

NOVARTIS AG  
Form 6-K  
February 08, 2008

## SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

### FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER  
PURSUANT TO RULE 13a-16 or 15d-16 OF  
THE SECURITIES EXCHANGE ACT OF 1934

Report on Form 6-K dated

(Commission File No. 1-15024)

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### Novartis AG

(Name of Registrant)

Lichtstrasse 35  
4056 Basel  
Switzerland

(Address of Principal Executive Offices)

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Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F:  Form 40-F:

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-

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Yes:  **No:**

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**OUR MISSION**

We want to discover, develop and successfully market innovative products to prevent and cure diseases, to ease suffering and to enhance the quality of life.

We also want to provide a shareholder return that reflects outstanding performance and to adequately reward those who invest ideas and work in our company.

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**GROUP**

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide.

Now focused solely on growth areas in healthcare, Novartis offers a diversified portfolio to best meet these needs innovative medicines, cost-saving generics, preventive vaccines and diagnostic tools, and consumer health products.

**FINANCIAL HIGHLIGHTS****KEY FIGURES**

| <b>(In USD millions, unless indicated otherwise)</b>                     | <b>2007</b>   | <b>2006</b> |
|--|---------------|-------------|
| Total Group net sales  | <b>39 800</b> | 37 020      |
| Continuing operations (1)  |               |             |
| - Net sales  | <b>38 072</b> | 34 393      |
| - Operating income excluding environmental and restructuring charges (2) | <b>7 815</b>  | 7 642       |
| - Return on net sales (2) (%)  | <b>20.5</b>   | 22.2        |
| - Operating income   | <b>6 781</b>  | 7 642       |
| - Net income   | <b>6 540</b>  | 6 825       |
| Net income Discontinued operations                                       | <b>5 428</b>  | 377         |
| Net income Total Group   | <b>11 968</b> | 7 202       |
| Basic earnings per share (3)   |               |             |
| - Continuing operations (1)  | <b>2.81</b>   | 2.90        |
| - Total Group  | <b>5.15</b>   | 3.06        |
| R&D investments (1)  | <b>6 430</b>  | 5 321       |
| - As % of net sales (1)  | <b>16.9</b>   | 15.5        |
| Number of associates (FTE (1), (4))                                      | <b>98 200</b> | 94 241      |

**SHARE INFORMATION**

|   | <b>2007</b>  | <b>2006</b> |
|---|--------------|-------------|
| Return on average equity (%)                              | <b>26.4</b>  | 19.3        |
| Free cash flow (1)  | <b>3 761</b> | 4 045       |
| Operating cash flow per share (1), (3) (USD)              | <b>3.97</b>  | 3.54        |
| ADS price at year-end (USD)                               | <b>54.31</b> | 57.44       |
| Share price at year-end (CHF)                             | <b>62.10</b> | 70.25       |
| Dividend payment (5) (CHF)                                | <b>1.60</b>  | 1.35        |
| Payout ratio of net income from continuing operations (%) | <b>49</b>    | 38          |

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(1) Excluding Consumer Health discontinued operations

(2) Excluding in 2007 USD 590 million of Corporate environmental and USD 444 million of Forward initiative restructuring charges

(3) Average number of shares outstanding in 2007: 2 317.5 million (2006: 2 345.2 million)

(4) Full-time equivalent positions

(5) Dividend payment for 2007 proposed to shareholders

## Business Review

### Overview

### NEWS IN 2007

#### GROUP

Record results in 2007 underscore benefits of strategic healthcare portfolio. Total Group net sales rise 8% (+3% in local currencies) to USD 39.8 billion. Net income reaches USD 12.0 billion. Results include contributions from Medical Nutrition and Gerber until divestment and an after-tax divestment gain of USD 5.2 billion in net income.

Strong contributions particularly from Sandoz and Vaccines and Diagnostics in continuing operations focused solely on healthcare. Net sales rise 11% (+6% lc) to USD 38.1 billion. Operating income decline reflects US pharmaceuticals slowdown and significant charges of about USD 1 billion for environmental provision as well as Forward initiative to improve competitiveness.

#### PHARMACEUTICALS

Europe, Latin America and key emerging markets generate double-digit growth and many products strengthen leading positions. Net sales grow 6% (+2% lc) to USD 24.0 billion. However, US impacted by generic competition and *Zelnorm* suspension. Operating income decline reflects lost US contributions and significant charges as well as major investments in new products and pipeline.

#### VACCINES AND DIAGNOSTICS

Net sales advance to USD 1.5 billion. Key growth drivers are vaccines for TBE (tick-borne encephalitis), pediatric immunization and seasonal influenza as well as NAT (nucleic acid testing) blood testing products. Meningitis vaccines in development progressing toward regulatory submissions.

#### SANDOZ

Dynamic performance with net sales up 20% (+13% lc) to USD 7.2 billion, providing an incremental increase of USD 1 billion thanks mainly to the US and Eastern Europe. Difficult-to-make generics provide competitive advantage. Operating income advances much faster than net sales, supported by productivity gains.

#### CONSUMER HEALTH

Solid expansion as OTC and Animal Health deliver double-digit growth from focus on strategic brands, new products and geographic expansion. CIBA Vision grows on improved product availability.

#### PIPELINE

15 major regulatory approvals in the US and Europe for new pharmaceutical products. Highly respected pipeline with 140 projects in clinical development. Many have potential best-in-class status that would advance or create new treatment standards.

#### RESEARCH

Novartis Biologics formed to accelerate R&D in biologic therapies, which represent 25% of the Novartis pre-clinical research pipeline. Many projects advancing rapidly at Novartis Institutes for BioMedical Research.

#### CORPORATE CITIZENSHIP

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Novartis access-to-medicine programs for those in need reach 66 million patients in 2007 through contributions valued at USD 937 million.

**DIVIDEND**

Proposal for 19% increase in 2007 dividend to CHF 1.60 per share. Represents 49% payout ratio of net income from continuing operations.



Letter from Daniel Vasella

**DEAR SHAREHOLDERS:**

It gives me great pleasure in our twelfth business year, which has been the most exceptional in the history of Novartis, to report another set of record results despite a difficult environment for the Pharmaceuticals Division, which experienced disappointments as well as successes.

We took decisive steps in 2007 to focus Novartis solely on healthcare through the divestments of Medical Nutrition and Gerber, which led to net income advancing 66% to USD 12 billion. This includes the after-tax gain of USD 5.2 billion from the divestments.

The sale of these businesses, along with one-time charges of approximately USD 1 billion for environmental provisions and restructuring measures, makes it challenging to compare this performance with the previous year. Therefore I will focus on continuing operations:

- Net sales from continuing operations rose 11% (+6% in local currencies) to USD 38.1 billion
- Operating income from continuing operations rose 2% to USD 7.8 billion excluding these one-time factors
- Earnings per share (EPS) rose 68% to USD 5.15 for the Group, and were up 9% to USD 3.15 for continuing operations when also excluding these one-time factors

- Free cash flow from continuing operations reached USD 3.8 billion

All divisions contributed to another record level of net sales for the Group. However, the overall results were impacted by a weaker performance in the Pharmaceuticals Division, which stood in stark contrast to the dynamic growth of Vaccines and Diagnostics and Sandoz. Consumer Health also delivered substantially improved results.

While the Pharmaceuticals Division faced a challenging year, it is important to note the overall good results, even if these were less likely to make headlines than the setbacks. Europe, Latin America and the priority emerging growth markets all posted double-digit expansion in net sales, while the Oncology and Neuroscience franchises delivered strong double-digit growth. Many of the top ten selling medicines – above all *Gleevec/Glivec* for the treatment of chronic myeloid leukemia and the high blood pressure medicine *Diovan* – maintained leading positions in their therapeutic areas. In the US, by contrast, net sales declined sharply following the withdrawal of *Zelnorm* in March and the entry of generic competition, which to some extent was unforeseen, for *Lotrel*, *Lamisil*, *Trileptal* and *Famvir*. In 2006, these five products together generated annual net sales of approximately USD 3 billion in the US, so these setbacks represent a loss of more than 10% of global Pharmaceuticals Division net sales. Additional challenges included the ongoing delay in gaining US regulatory approval for the new diabetes medicine *Galvus* and a regulatory decision in the US not to approve *Prexige*.

At the same time, all of our other healthcare businesses delivered excellent results.

The **Vaccines and Diagnostics** Division enjoyed dynamic growth in 2007. Strong deliveries of influenza vaccines to the US, as well as vaccines for tick-borne encephalitis and for pediatric immunization, were the most important growth drivers. The pipeline made significant progress, particularly the development of potentially first-in-class vaccines for meningococcal meningitis, and

supported by a new strategic alliance with Intercell that provides exclusive access to several promising projects.

The generics Division **Sandoz** also reported dynamic growth, especially in the US. The successful launches of several new difficult-to-make generics, which provide Sandoz a competitive advantage, underpinned the strong expansion. Operating income improved much faster than net sales, benefiting from sustained increases in sales volumes and productivity initiatives.

The **Consumer Health** Division delivered a good performance, as both OTC (non-prescription medicines) and Animal Health achieved attractive growth thanks to a common focus on strategic brands and the launch of new products as well as expansion in Japan and emerging growth markets. CIBA Vision improved its net sales, and in particular operating income, following the resumption of deliveries in 2007 after some recent product shortages. Operating income for the Division improved and supported significant R&D investments and geographic expansion.

**The overall good performance in a difficult environment confirms that we are on the right strategic path.** The events of 2007 have made clear the advantages of our strategy centered on focused diversification. We are active in fast-growing areas of the healthcare market while reducing risks, such as over-dependence on government-regulated pricing for medicines or the actions of regulatory agencies.

Despite the current industry challenges, the healthcare sector's future continues to promise robust growth. The growing need for medical services and medicines is driven above all by the following factors:

- First and foremost is the **aging of the world's population**. The incidence of chronic and degenerative diseases, such as arthritis, high blood pressure, cancer and, of course, dementia, rises with age. An estimated 80% of people over age 80 suffer from at least one disease, and more than 60% have two or more conditions. The entry of the baby boomer generation into retirement—the first members reached the traditional retirement age in 2007—will further support this trend.
- Younger generations are also being impacted by **health-related changes in society**. Changes in dietary habits and an increasingly sedentary lifestyle are having an impact. The number of over-weight people is not only rising in the US but also in Europe and many developing countries. Negative health consequences linked to obesity are becoming increasingly visible, especially cardiovascular disease and diabetes. At the same time, environmental pollution is causing more cases of cancer and pulmonary disease.
- **Strong economic growth in emerging markets** with large populations, particularly China, India and Russia, has led to rapid expansion of the middle class and greater demands for better healthcare services.
- Finally, **new technological discoveries and trends** are continuously enabling the development of innovative medicines to address a range of diseases that previously could not be adequately treated.

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Although these developments reaffirm prospects for rising demand for healthcare and our products, a number of challenges exist:

- **Increased pressure on costs:** Political resistance to high-price medicines is likely to grow throughout the world as

the overall cost of healthcare keeps rising. Although doctors, pharmacies and hospitals will not be able to escape political pressures, the pharmaceuticals industry unduly suffers due to its status as the most visible and tangible participant in the healthcare system. This makes us an easy scapegoat for rising costs.

- **Erosion of patent rights:** Our industry has recently found itself confronted by aggressive behavior from certain generics manufacturers. Some have launched copies of medicines before the expiry of patents because they consider these patents to be contestable, and in many instances courts have not yet stepped in to stop them.

- **Growing mistrust:** The pharmaceuticals industry has faced for some time a conservative attitude from the US Food and Drug Administration (FDA), which appears to be a reaction to public criticism. This conservatism is reflected in the agency's demands for growing volumes of data aimed at guaranteeing an unparalleled degree of safety. In the long term, this approach will be detrimental to medical progress since it is simply not possible to provide medicines that are completely free of side effects in all patients. The benefits and risks of any treatment must in the end be weighed individually by the physician and patient.

A strategy ignoring these trends, which to some extent overlap and are at times contradictory, will fail sooner rather than later. We are convinced that our diversified portfolio – yet one focused on growth areas of healthcare – ideally positions Novartis for the future and reduces risks. We have been steadfast in pursuing this strategy in recent years, for example, by purchasing Chiron in 2006 as well as by divesting the remaining non-core nutrition businesses in 2007.

**The most decisive factor remains our strength in innovation.** Our overall performance in gaining new product approvals was positive. It goes without saying that the delays in approvals for *Galvus* have been particularly disappointing. It is important, nonetheless, to recognize the overall successes during the year. Novartis received six positive regulatory decisions in the US and nine in the EU (15 positive decisions out of a total of 17). These included approvals for *Rasilez/Tektura* and *Exforge* (high blood pressure), *Exelon Patch* (Alzheimer's disease) and *Aclasta/Reclast* (osteoporosis) in the US and Europe. In addition, *Lucentis* (wet age-related macular degeneration, a leading cause of blindness) and *Sebivo/Tyzeka* (hepatitis B) were both approved in Europe. In the third quarter, *Galvus* received European approval as a new oral treatment option for patients with type 2 diabetes. At the end of 2007, the US and EU both granted approvals for *Tasigna* as a new medicine for patients with chronic myeloid leukemia no longer responding to *Gleevec/Imatinib*.

Novartis is widely recognized as having one of the industry's most attractive development pipelines. Research and Development activities are focused in particular on cardiovascular and metabolic diseases, oncology and neurology as well as respiratory and infectious diseases. Our portfolio includes 140 projects in clinical development, more than ever before. Several late-stage projects are progressing on track toward regulatory submissions. These include **FTY720** (multiple sclerosis), **QAB149** (respiratory diseases), **RAD001** (cancer), **ACZ885** (Muckle-Wells syndrome) and **SOM230** (Cushing's disease).

Breakthroughs have also been achieved in Sandoz and Vaccines and Diagnostics: Thanks to improvements in innovation and productivity, Sandoz has strengthened its leading position in bringing difficult-to-make generics to the market. European approval was granted in 2007 for epoetin alfa – a further milestone following the US approval of the growth hormone *Omnitrope* in 2006 as the world's first follow-on version of a previously approved biotechnology drug. As an affordable, high-quality biogeneric, epoetin alfa could be used to provide benefits to approximately 250 000 patients in Europe.

In 2007, Vaccines and Diagnostics gained European approval for the new pandemic flu vaccine *Focetria*. Novartis also gained a leading position in cell-culture flu vaccines with the European approval of *Optaflu*, which utilizes new technologies representing the most important innovation in influenza vaccine manufacturing in more than 50 years.

**Innovation is our core competency this comprises the development of novel medicines and the creation of new R&D strategies.** Driven by the increasing number of therapeutic proteins discovered by our researchers, we established a new Biologics R&D unit in 2007 to unify our core capabilities in biologics within one group.

**It takes courage during uncertain times to follow your own path and be true to your convictions, rather than just keeping an anxious eye on competition.** Novartis has steadfast positions and stands by them. Our points of view often do not win popularity contests. The tendency toward group thinking has sometimes been confused with the practice of benchmarking. This approach can often lead to errors in judgment. In such a situation, one rarely has the courage to review a situation objectively, draw conclusions and also take responsibility.

One of the fundamental aspects of the Novartis culture is being true to our values, ensuring that we remain committed ultimately to the needs of patients while engaging in social and political debates. It is critical

to differentiate between legitimate discussions about healthcare costs and those that appear to address this issue but instead actually mask hostility toward innovation.

Pressure on healthcare prices is simply a reality that must be accepted. Given the demographic trends, one can appreciate the cost reduction efforts. But there is a limit, and crossing it endangers incentives needed to drive innovation. Going beyond this limit would have dramatic consequences, massively weakening long-term investments that have led to historical advances in medicine. Progress is only possible in an environment that values innovation. I personally feel the level of hostility toward innovation goes too far when industrialized countries take for granted that they have the healthiest populations in the history of mankind but at the same time demand breakthrough medicines with no side effects and offered at minimal prices.

Aging societies are precisely those that can neither support such ill-considered views toward innovation nor the political conditions that facilitate them. On the contrary, aging societies must embrace innovation. One of the most urgent challenges in many critical markets for Novartis is the cost of healthcare, coupled with overall care of the elderly. Concern for the healthcare needs of the elderly could be reasonably addressed through innovation, especially if one eventually wants to avoid rationing. One interesting example is the link between Alzheimer's disease and the rise in life expectancy. If an effective treatment is not found, the costs of treating and caring for these patients could quickly skyrocket to absolutely unaffordable levels. The annual costs of caring for the estimated five million people in the US with Alzheimer's disease already represents about USD 150 billion of the nation's healthcare budget. Consider the implications of estimates forecasting the number of patients will rise to an unimaginable 100 million in 2025.

One would surmise that society would encourage research into these types of diseases, creating more attractive rewards for those who make significant R&D investments. This might seem counter-intuitive at first, but from a long-term perspective it could be the only viable approach.

**Another development eroding the vital culture of innovation is the increasing aversion to any conceivable risk.** This reflects several societal trends, and manifests itself mainly in relation to our products. Let me be clear: No medicine exists today that is completely free of side effects in all patients. Of course, this poses a dilemma for those involved—doctors and patients. During my time as a physician working in hospitals, I was confronted every day by this dilemma. I still firmly believe that one of the core capabilities of physicians is to take responsibility for decisions that involve their patients. When regulatory agencies take over these responsibilities, as is increasingly the case in the US, then healthcare policies will move toward a patronizing system where physicians and the pharmaceuticals industry are viewed with distrust instead of as important partners. These developments oppose the consistent demand for industry and individuals to take more responsibility for their actions, coupled with a corresponding reduction in the role of governments. Strict control systems are appropriate and important—and opinions should not differ on this point. But excessive anxiety will slow the pace of medical progress over the long term, and lead to suffering that will impact our entire society.

**A sustained commitment to social responsibility is a fundamental value of Novartis.** Our actions in corporate citizenship

are too critical to be linked to business cycles. Last year, for example, our access-to-medicine programs reached 66 million patients worldwide, with contributions totaling USD 937 million and representing about 2.5% of annual net sales from continuing operations.

Important Novartis initiatives are focused on neglected diseases, especially malaria, leprosy, dengue fever and treatment-resistant tuberculosis. In 2007 in more than 40 African countries, Novartis provided 66 million treatments of the anti-malaria medicine *Coartem* below costs, which saved an estimated 200 000 lives, a majority of which were children. Moreover, annual production capacity has been ramped up to deliver 100 million treatments of *Coartem*.

I would also like to take an opportunity to provide an industry perspective as well: An impressive 1.3 billion health-related interventions ranging from medicines to vaccines and disease awareness campaigns worth billions of dollars were distributed between 2000 and 2006 in developing countries considered to be of little commercial interest.

**Attracting the best talent from around the world is critical for a global company like Novartis, ensuring that associates feel respected and are recognized for their contributions.** Ensuring equal opportunities, fairness and mutual respect are a sine qua non in a world that, in business terms, is growing ever closer together. Our Diversity & Inclusion Advisory Council (DIAC), comprised of nine external experts with different cultural, ethnic and social backgrounds, supports the objective of building teams that are both diverse and talented. The DIAC will further strengthen our competitiveness by reinforcing the importance of an inclusive environment not only among our associates but also in interaction with patients and other interest groups. I have been personally following the progress of the DIAC members, and I am deeply impressed by their engagement and contributions.

Novartis has long been committed to the principles of sustainability, encompassing more than just environmental protection and long before this issue found its way to the forefront as one of the first signatories of the UN Global Compact. A key aspect of our corporate culture is ensuring appropriate use of energy and other resources. Three years ago, Novartis made a voluntary commitment to reduce its greenhouse-gas emissions to levels mandated by the Kyoto Protocol. The improvements in energy efficiency have already exceeded expectations. Sustainability is a prominent feature of the Novartis Campus at our headquarters in Basel. A key objective is to use renewable energy on the Campus and eliminate CO<sub>2</sub> emissions in the medium term. The changing composition of the worldwide vehicle fleet is also contributing to these objectives: A 10% reduction in CO<sub>2</sub> emissions is expected by 2010 through the replacement of older vehicles with new ones utilizing hybrid technology or diesel motors with micro-particle filters.

I am particularly pleased that our commitment to sustainability of all forms was acknowledged in 2007 with the selection of Novartis as a sustainability leader in the Dow Jones Sustainability Index, a worldwide rating of companies according to economic, environmental and social factors.

**This engagement in corporate responsibility and actually the success story of Novartis would not have been possible without a consistent focus on performance and results.** As a global company, we have consistently considered challenging periods as opportunities to review how we work and to pursue improvements. The initiatives announced in the second half of 2007 involve innovation, efficiency and leadership. Beyond the creation of the new Biologics unit, two other initiatives will help us more quickly achieve our objectives:

- Project Step-up is designed to improve the effectiveness of drug development: We want to strengthen our project teams, integrate decision-making under the leadership of experienced colleagues at the franchise level and simplify development processes.

- A Group-wide initiative called *Forward* is underway to simplify our structures, accelerate and decentralize decision-making processes, and redesign the way Novartis operates, while at the same time providing productivity gains. Although the results of internal surveys show Novartis performs in almost all aspects better than comparable companies, they also show many associates feel the organization is too complex and could benefit from simplification. Given these perspectives, we have taken this opportunity both to streamline our organization and to redefine the way we work.

Coping with change is never easy, especially when jobs are affected. However, it would be fatal if we were to ignore significant industry changes taking place. Only by taking a proactive approach can we improve our competitiveness.

Last year, some leadership changes were also made to broaden experience at the top management level and to provide fresh impetus to our business. Switching positions, Joseph Jimenez became Head of the Pharmaceuticals Division and Thomas Ebeling took over as Head of the Consumer Health Division.

**As a shareholder, you are naturally interested in the performance of our company.** Since its creation in 1996, Novartis has provided on average a total annual return of 9.9% to shareholders, more than the returns of most large pharmaceutical companies. Our earnings per share have risen approximately 80% during the last five years, while the annual dividend payout has risen on average 11% during the same period. Unfortunately, these improvements have not been reflected in the share price, and this is not something to gloss over. At the same time, our fundamentals remain strong and are reflected in the twelfth consecutive year of record results achieved in 2007 despite significant challenges.

Indeed, the pharmaceuticals industry has suffered from a period of overall devaluation in market capitalization. The industry's price/earnings ratios only a few years ago ranged from between 25 to 30, but many have since collapsed to between 10 and 15. This broad devaluation indicates that financial markets have viewed pharmaceutical stocks with suspicion for some time, based on reasons already discussed. However, I believe the emphasis is far too much on challenges than on opportunities. In turbulent times, investors have often turned to the pharmaceuticals sector; a downturn in the economy will offer pharmaceutical stocks an opportunity to again be seen as valuable investments.

**We are now preparing for a new growth cycle.** The results in the first half of 2008 will be negatively impacted by a weak performance in the Pharmaceuticals Division, particularly in the US. This period will be used to further improve productivity and efficiency.

Thanks to new product launches and the strength of our flagship products *Diovan* and *Gleevec/Glivec*, a new growth cycle in Pharmaceuticals is also expected to emerge in the second half of 2008.

**Cautious optimism seems appropriate for 2008:** One must remember that the industry is facing a more volatile phase than experienced in the past. I am confident that I speak for all Novartis associates in saying we all are well aware that greater efforts will be needed for success as compared to the past.

Even when considering the challenges and setbacks, we look to the future with confidence. My conviction that 2008 will be a successful year is based on our long-term strategy, well-acknowledged innovation capabilities, operational excellence and the courage to act independently.

In times like these, marked by uncertain dynamics and fundamental changes, I would like to thank our associates, whose outstanding performances have once again helped Novartis achieve a record performance in a very challenging environment. These particularly valuable efforts are anchored in our shared purpose of improving the lives of patients.

In closing, I would like to once again express my appreciation to you, our shareholders, for the trust you continue to place in Novartis.

Sincerely,

Daniel Vasella, M.D.

**Chairman and Chief Executive Officer**









## PHARMACEUTICALS

Strong performances in Europe, Latin America and key emerging markets lead to net sales rising 6% (+2% in local currencies) to USD 24.0 billion. However, US net sales decline 8% after entry of generic competition for *Lotrel*, *Lamisil*, *Trileptal* and *Famvir* as well as suspension of *Zelnorm*.

Many top ten products are leaders in their therapeutic categories. *Diovan* becomes the world's No. 1 branded high blood pressure medicine as net sales reach USD 5 billion for the first time in 2007. *Gleevec/Glivec* reinforces leadership in helping patients with certain forms of cancer as net sales reach USD 3 billion for the first time.

Operating income decline reflects lost contributions in the US, major investments in late-stage development compounds, new product launches and restructuring charges for the Forward initiative to improve competitiveness. Excluding these restructuring charges, operating income falls 5%.

15 major regulatory approvals during 2007 in the US and European Union. Many new medicines have the potential to set new treatment standards. Success reflects productivity from one of the industry's most respected pipelines. 140 projects in clinical development.

Recently approved products being rolled out around the world: *Exforge* and *Tekturna/Rasilez* (high blood pressure), *Lucentis* (age-related blindness), *Exelon Patch* (Alzheimer's disease), *Tasigna* (cancer), *Aclasta/Reclast* (osteoporosis), *Exjade* (iron overload) and *Xolair* (asthma).

Progress in late-stage pipeline. Potential for several new submissions between 2008 and 2010. FTY720 (multiple sclerosis), RAD001 (cancer) and QAB149 (chronic obstructive pulmonary disease) all complete enrollment in key Phase III trials.

Novartis Biologics created in 2007 as a dedicated unit. Objective to optimize research and development of biologic medicines by unifying and expanding expertise. Biologics represent 25% of pre-clinical research pipeline and are an increasing priority.

**PHARMACEUTICALS**

| <b>KEY FIGURES</b>                                   | <b>2007</b>   | <b>2006</b> |
|--|---------------|-------------|
| <b>(In USD millions, unless indicated otherwise)</b> |               |             |
| Net sales  | <b>24 025</b> | 22 576      |
| Operating income excluding restructuring charge (1)  | <b>6 393</b>  | 6 703       |
| Operating income                                     | <b>6 086</b>  | 6 703       |
| Research and development                             | <b>5 088</b>  | 4 265       |
| Research and development as % of net sales           | <b>21.2</b>   | 18.9        |
| Free cash flow                                       | <b>6 292</b>  | 6 501       |
| Net operating assets                                 | <b>13 984</b> | 13 640      |
| Additions to property, plant and equipment (2)       | <b>1 436</b>  | 1 135       |
| Number of associates (FTE (3)) at year-end           | <b>54 613</b> | 54 314      |

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(1) Excluding USD 307 million of Forward initiative restructuring charge

(2) Excluding impact of business combinations

(3) Full-time equivalent positions



The following table is an excerpt of Novartis Pharmaceuticals clinical pipeline that holds a broad stream of 140 future projects including both new molecular entities and additional indications or formulations for marketed products.

**Glossary of terms:**

**Compound** Molecular entity

**Generic name** International Non-proprietary Name (INN) designated by the World Health Organization (WHO)

**Indication** A disease or condition for which a particular drug is believed to be an appropriate therapy

**Phase I** First clinical trials in patients to determine safety, tolerability and usually proof of concept

**Phase II** Clinical trials in patients to determine dose ranging, safety and efficacy

**Phase III** Large clinical trials to determine definitive safety and efficacy in patients

**Submission** In registration

| Therapeutic area              | Project/compound                   | Generic name                   | Indication  |
|-------------------------------|------------------------------------|--------------------------------|---|
| Cardiovascular and Metabolism | <i>Galvus</i>                      | vildagliptin                   | Type 2 diabetes   |
|                               | <i>Diovan/Starlix</i><br>NAVIGATOR | valsartan, nateglinide         | Prevention of new-onset type 2 diabetes, cardiovascular morbidity and mortality |
|                               | <i>Lotrel</i> ACCOMPLISH           | amlodipine, benazepril         | High-risk hypertension  |
|                               | <i>Tekturna</i><br>ALTITUDE        | aliskiren                      | Type 2 diabetes   |
|                               | Tekturna FDC (1)                   | aliskiren, valsartan           | Hypertension  |
|                               | Tekturna FDC (1)                   | aliskiren, hydrochlorothiazide | Hypertension  |
| Oncology & Hematology         | <i>Tasigna</i><br>EPO906           | nilotinib<br>patupilone        | Gastrointestinal stromal tumor<br>Ovarian cancer and other solid tumors         |

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|                                  |                  |                                     |   |
|----------------------------------|------------------|-------------------------------------|---|
|                                  | RAD001           | everolimus                          | Renal cell cancer, pancreatic islet cell tumor, solid tumors                              |
|                                  | SOM230           | pasireotide                         | Acromegaly, GEP (6) tumors, Cushing's Disease   |
|                                  | PKC412           | midostaurin                         | Acute myeloid leukemia  |
|                                  | LBQ707           | gimatecan                           | Solid tumors  |
|                                  | LBH589           |                                     | Cutaneous T-cell lymphoma, hematologic tumors   |
|                                  | ASA404           |                                     | Non small cell lung cancer  |
| Neuroscience & Ophthalmology     | AGO178           | agomelatine (7)                     | Depression  |
|                                  | FTY720           | fingolimod                          | Multiple sclerosis  |
|                                  | SAB378           |                                     | Central nervous system  |
| Respiratory                      | <i>Xolair</i>    | omalizumab                          | Allergic asthma   |
|                                  | QAB149           | indacaterol                         | Chronic obstructive pulmonary disease   |
|                                  | MFF258           | formoterol, mometasone              | Asthma, chronic obstructive pulmonary disease   |
|                                  | NVA237           | glycopyrronium bromide              | Chronic obstructive pulmonary disease   |
|                                  | NIC002           |                                     | Smoking cessation   |
|                                  | QAT370           |                                     | Chronic obstructive pulmonary disease   |
|                                  | QMF149           | indacaterol,                        | Asthma, chronic obstructive pulmonary disease   |
|                                  |                  | mometasone                          |   |
|                                  | QVA149           | indacaterol, glycopyrronium bromide | Chronic obstructive pulmonary disease   |
|                                  |                  | TBM100                              | tobramycin  |
| Immunology & Infectious Diseases | <i>Certican</i>  | everolimus                          | Prevention of organ rejection   |
|                                  | <i>Mycograb</i>  | efungumab                           | Severe fungal infections  |
|                                  | <i>Albuferon</i> | albumin interferon alpha 2-b        | Chronic hepatitis C   |
|                                  | <i>Aurograb</i>  |                                     | Severe Staphylococcus aureus infections   |
|                                  | AEB071           |                                     | Prevention of organ rejection   |
|                                  | ACZ885           |                                     | Muckle-Wells syndrome, rheumatoid arthritis, systemic onset juvenile idiopathic arthritis |
|                                  | SBR759           |                                     | Hyperphosphatemia   |
|                                  | SMC021           | calcitonin                          | Osteoporosis, osteoarthritis  |
|                                  | TFP561           | tifacogin                           | Severe community acquired pneumonia   |

- 
- (1) Fixed dose combination
  - (2) Breakpoint cluster region-Abelson fusion protein
  - (3) Important receptor tyrosine kinase protein
  - (4) Platelet-derived growth factor receptor protein
  - (5) Mammalian target of rapamycin protein
  - (6) Gastroenteropancreatic
  - (7) Licensed from Servier; Novartis has rights in the US
  - (8) Heat shock protein 90



| Mechanism of action  | Formulation                      | Planned submission dates           | Phase I                      | Phase II | Phase III | Submitted |
|--|----------------------------------|------------------------------------|------------------------------|----------|-----------|-----------|
| <b>Dipeptidyl peptidase 4 inhibitor</b>                                      | Oral                             | Submitted US (approved EU)         | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| <b>Angiotensin II receptor antagonist and insulin secretagogue</b>           | Oral                             | 2010                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| <b>Angiotensin I converting enzyme inhibitor and calcium channel blocker</b> | Oral                             | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| <b>Renin inhibitor</b>   | Oral                             | ≥2011                              | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Renin inhibitor and angiotensin II receptor antagonist                       | Oral                             | 2008                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Renin inhibitor and diuretic   | Oral                             | Submitted US, EU                   | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Bcr-Abl (2), c-Kit (3) and PDGFR (4) inhibitor                               | Oral                             | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Microtubule depolymerization inhibitor                                       | Infusion                         | 2010                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| mTOR (5) inhibitor   | Oral                             | 2008                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Somatostatin analogue  | Injection                        | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Signal transduction inhibitor  | Oral                             | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Topoisomerase I inhibitor  | Oral                             | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Deacetylase inhibitor  | Oral                             | 2009                               | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Vascular disrupting agent  | Infusion                         | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| <b>Melatonin receptor agonist and 5-HT<sub>2C</sub> antagonist</b>           | Oral                             | 2008                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Sphingosine-1-phosphate receptor modulator                                   | Oral                             | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Cannabinoid receptor agonist   | Oral                             | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Anti-IgE monoclonal antibody   | Liquid formulation for injection | 2008                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Long-acting beta-2 agonist   | Inhalation                       | 2008                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| <b>Long-acting beta-2 agonist and long-acting steroid</b>                    | Inhalation                       | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Long-acting antimuscarinic   | Inhalation                       | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Nicotine Qbeta therapeutic vaccine   | Injection                        | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Long-acting antimuscarinic   | Inhalation                       | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Long-acting beta-2 agonist and long-acting steroid                           | Inhalation                       | 2010                               | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Long-acting beta-2 agonist and long-acting antimuscarinic                    | Inhalation                       | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Aminoglycoside antibiotic  | Dry powder for inhalation        | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Growth-factor-induced cell proliferation inhibitor                           | Oral                             | Submitted US, (approved EU, Japan) | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Anti-HSP90 (8) antibody  | Infusion                         | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Long-acting interferon   | Injection                        | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Anti-Staph. aureus antibody  | Infusion                         | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Protein Kinase C inhibitor   | Oral                             | ≥2011                              | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Anti-interleukin-1 b antibody  | Injection                        | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
| Selective binding of phosphate (Fe(III) containing polymer)                  | Oral                             | 2010                               | XXXXXXXXXXXXXXXXXXXX         |          |           |           |
| Regulator of calcium homeostasis   | Oral                             | ≥2011                              | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |
|  | Infusion                         | 2009                               | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |          |           |           |

Recombinant tissue factor  
pathway inhibitor



## PHARMACEUTICALS

Increased life expectancy is one of the most remarkable achievements of the past century. Yet old age brings increased risk of chronic ill health, disability and loss of independence. During 2007, Novartis received major approvals for new medicines that are helping to transform treatment of many diseases that represent paramount public-health challenges for the aging society.

Before Midge Hatzman was diagnosed with osteoporosis in the late 1980s, she had a succession of fractures including her back, wrist, ankle and ribs.

Osteoporosis, a progressive bone-thinning disease, forced Mrs. Hatzman to give up skiing and tennis. At the age of 80, however, she still gardens and hikes in her home town, Ossining, New York. During the summer, she even visits the local swimming pool with her husband, Al.

In 2004, her physician recommended that she consider participating in a clinical trial of *Aclasta/Reclast*, a new, once-yearly treatment for osteoporosis developed by Novartis. Mrs. Hatzman liked the fact that a single 15-minute infusion would protect her for the whole year. It was a snap, she says.

Even more important, she hasn't had any new fractures during the three years she has remained on treatment with *Aclasta/Reclast*.

Mrs. Hatzman exemplifies the challenges that aging populations are posing for healthcare systems around the globe. Increased life expectancy is one of the most remarkable human achievements of the past century; average life expectancy at birth has increased by nearly 20 years worldwide since the mid-1950s, according to the World Health Organization (WHO).

Yet old age brings increased risk of chronic ill health, disability and loss of independence. Moreover, the cost of providing healthcare for an older American is three to five times greater than for someone younger than 65, according to the US Centers for Disease Control and Prevention. The nation's healthcare spending is projected to climb a further 25% as the population of Americans older than 65 doubles by the year 2030.

The WHO estimates that the population aged 60 and older will triple worldwide by 2050, with most of the increase occurring in developing countries. At the same time, the disease profile is changing with low-and middle-income countries moving rapidly from an era of infectious diseases to an era of chronic diseases associated with lifestyle and economic changes.

The risk of outbreaks—a new influenza pandemic, for example—will require constant vigilance, the WHO warns. But it is the looming epidemics of heart disease, stroke, cancer and other chronic diseases that for the foreseeable future will take the greatest toll in deaths and disability.

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Novartis is responding to these challenges with a broad portfolio of businesses addressing the needs of customers. Innovation remains the key to success.

There is no way around that; innovation is vital and will remain vital, says Daniel Vasella, M.D., Chairman and Chief Executive Officer of Novartis.

Innovation means breakthrough medicines that address unmet medical need and change the way medicine is practiced in diseases ranging from cancer to high blood pressure. Research and Development also delivers incremental innovation such as the once-yearly infusion of *Aclasta/Reclast*, to enhance adherence to treatment and improve outcomes.

### **Transforming Treatments**

During 2007 Novartis received major approvals for a succession of new medicines that are helping to transform treatment of many diseases that represent paramount public-health challenges for the aging society.

*Aclasta/Reclast* was approved in the European Union (EU) and the US in 2007 as the first and only once-yearly medicine for postmenopausal osteoporosis. Osteoporosis is a long-term disease that causes bones to break more easily and affects more than 200 million people worldwide.

Novartis also launched *Exelon* Patch, the first transdermal skin patch for treatment of Alzheimer's disease. The new patch formulation maintains steady drug levels in the bloodstream, improving tolerability and allowing a higher proportion of patients to receive therapeutic doses of the well-established medication, *Exelon*.

*Lucentis* received approval in the EU as the first and only treatment proven in clinical trials to maintain and improve vision in patients with the wet form of age-related macular degeneration (AMD). A degenerative eye disease, wet AMD is a leading cause of severe vision loss in people older than 50 in the Western world. Currently there is no cure and treatment options are limited.

In addition, two new Novartis medicines were approved and launched for treatment of high blood pressure, a condition that affects a quarter of the world's adult population and causes more than 7 million deaths and an even greater number of debilitating events from cardiovascular disease every year. High blood pressure is the leading cause of death in the developed and developing world and the number-one modifiable risk factor.

*Exforge*, a single-pill treatment combining the power of the two most commonly prescribed branded hypertension medicines, was rolled out in both Europe and North America during 2007. *Rasilez/Tekturna*, a direct renin inhibitor, became the first new type of antihypertensive to reach patients in more than a decade, broadening a portfolio anchored by *Diovan*, now the world's best-selling branded antihypertensive medicine.

### **Aclasta - Improving Adherence**

One out of every two women older than 50 suffers an osteoporotic fracture during her lifetime. Fractures are responsible for an estimated 500 000 hospitalizations in the US every year, costing the healthcare system more than USD 12 billion annually. Approximately 20% of women

older than 50 who suffer a hip fracture will die within one year.

Regulatory applications for *Aclasta/Reclast* were based on efficacy and safety data from the three-year Pivotal Fracture trial, involving more than 7 700 women. Results from the study showed that *Aclasta/Reclast* increases bone strength and reduces fractures in areas of the body typically affected by osteoporosis, such as the hip, spine, wrist and rib. *Aclasta/Reclast* is the only treatment approved to reduce fractures across all these key sites.

The active ingredient in *Aclasta/Reclast*, zoledronic acid, belongs to the chemical family known as bisphosphonates, the current standard of care. The once-yearly administration of *Aclasta/Reclast* gives physicians and payors an opportunity to address the problem of sub-optimal patient adherence to treatment with bisphosphonates taken weekly or monthly as tablets.

In an editorial about the Pivotal Fracture Trial in the New England Journal of Medicine (NEJM), Juliet Compston, M.D., University of Cambridge School of Clinical Medicine, wrote: Despite the availability of effective treatments for osteoporosis, poor adherence to drug regimes reduces the benefit and presents a major challenge for health professionals. Dr. Compston acknowledged that even a single infusion (of *Aclasta/Reclast*) appears to ensure efficacy for at least one year and probably longer. She concluded: Increased treatment choices for patients are to be welcomed and may provide one means of improving adherence and treatment outcomes in osteoporosis.

A separate study published by NEJM in 2007 confirmed the potential of *Aclasta/Reclast* to significantly improve treatment outcomes in the first-ever clinical study in patients with osteoporosis who already had suffered a hip fracture. Once-yearly infusions of *Aclasta/Reclast* resulted in a 35% reduction in new clinical fractures and a 28% reduction in death from any causes as compared with placebo.

The study involved more than 2 100 patients, between the ages of 50 and 98, who began treatment with *Aclasta/Reclast* within three months after hip-fracture repair and continued treatment for two years. An accompanying editorial in NEJM declared: The reduction in fracture incidence and death (for patients treated with *Aclasta/Reclast*) was striking and clearly establishes the need for pharmacologic intervention in patients who fracture a hip.

More than 300 000 hip fractures occur annually in the US, the majority related to osteoporosis and falls in older people. A third of hip-fracture patients die within two years of their injuries, and many of those who survive do not regain pre-fracture levels of mobility. They also endure loss of independence and deterioration in health-related quality of life, according to NEJM.

Still, few patients currently receive osteoporosis treatment following a hip fracture despite high risk of morbidity and mortality. Data from the Recurrent Fracture Trial have been submitted to regulatory authorities worldwide to broaden the treatment indication for *Aclasta/Reclast*.

For all the medical benefits demonstrated in clinical studies, once-yearly infusion represents a challenge for payors because of the one-time cost compared to oral daily, weekly or monthly treatments. Novartis has tried to assuage such concerns with innovative pricing models. In Germany, for example, Novartis has agreed to refund medication costs to health insurers in cases of treatment failure within a year of *Aclasta/Reclast* infusion. The money-back guarantee has accelerated reimbursement negotiations with German authorities.

Another program aimed to improve access to treatment encompasses a network of 130 Lighthouses, or mini-clinics, across Germany. Each clinic is fully equipped and has trained staff to deliver infusions for patients referred to the Light-house by their own physicians. For doctors who lack staff or infrastructure in their practices to offer infusions, the Lighthouse is a safe haven where they can feel confident their patients will receive optimal treatment with *Aclasta/Reclast*, says Emmanuel Puginier, M.D., Head of Marketing and Sales, General Medicines, at the Novartis Pharmaceuticals Division. It is another way we are building confidence with our stakeholders.

### **Lucentis – Important Advance in Treatment**

John Blake is an avid golfer on links around his home in Birmingham, England, but he had difficulty following the flight of the ball after losing the central vision in his left eye. When Mr. Blake was diagnosed with the wet form of macular degeneration in the other eye two years ago, his

physician recommended treatment with Lucentis, a new medicine jointly developed by Novartis and Genentech Inc.

If you've gone blind in one eye you wonder if going to be the same in the other one, he muses. An independent life is everything to me and it makes you reflect how precious your eyes are.

*Lucentis* is administered as an intravitreal injection and Mr. Blake had to battle a fear of needles as well as the threat of losing his sight. I've got a phobia about injections so it did put a lot of fear into me but the fear of going blind was much more severe so I overcame that, he says. In the end the injection wasn't half as bad as I thought it would be.

His first *Lucentis* injection was successful. There was further improvement following a second and, after the third injection, my sight was quite good, Mr. Blake says. I can go and play anyone at golf, go fishing and drive a car. Everything has opened up again.

AMD is a disease caused by damage in the macula, the central part of the retina where light-sensitive cells send signals to the brain. The macula is responsible for straight-ahead central vision needed for activities ranging from driving to reading and identifying faces.

There are two forms of AMD. The dry form accounts for the vast majority of cases but the more severe wet form is responsible for up to 90% of cases of blindness from AMD, according to the US National Eye Institute.

There are an estimated 2.5 million wet-AMD patients living in EU member countries. More than half of those patients have not yet been diagnosed and, of those diagnosed, 40% are not receiving treatment.

The evolution of the disease and visual loss is very fast for wet AMD, says Professor Francesco Bandello, Chairman of the Department of Ophthalmology at the University of Udine, Italy. Moreover, the frequency of wet AMD is increasing because the number of older patients is increasing day by day.



By contrast to previous therapies that could only slow the decline in vision, treatment with *Lucentis* stabilizes vision in most patients treated and actually improves vision and vision-related quality of life in a significant number of people suffering from wet AMD. *Lucentis* is able to produce stabilization of visual function in 90% to 95% of our patients and we have about 30% of these patients who show some degree of improvement of visual function, Professor Bandello says. This is really a revolution compared to what we had before.

A therapeutic monoclonal antibody fragment, *Lucentis* was specifically designed to penetrate all the layers of the retina to reach the macula. The medicine binds to vascular endothelial growth factor (VEGF-A), a growth factor essential for the formation of new blood vessels. By binding to VEGF-A, *Lucentis* reduces abnormal vessel growth and leakage of fluid into the retina. This allows the retinal structure to return to normal.

The pivotal studies included in regulatory submissions for *Lucentis* show an unprecedented response rate among wet AMD patients. As Professor Bandello indicated, almost 95% of patients with *Lucentis* maintained their vision, defined as a loss in visual acuity (or clarity of vision) of less than 15 letters on the eye chart used in the study. About two out of three patients in the study treated with *Lucentis* gained some vision compared to baseline visual acuity measured at the beginning of the trial. That gain in vision has been sustained for two years with monthly treatments with *Lucentis*.

Adherence to treatment is important for wet AMD patients. *Lucentis* is given as a monthly injection for three months, followed by a maintenance phase in which patients are monitored monthly. *Lucentis* should be re-administered if a patient loses more than five letters of visual acuity. Novartis has developed self-monitoring tools for use by patients during the maintenance phase.

*Lucentis* was jointly developed by Novartis and Genentech Inc. Novartis holds exclusive commercial rights to *Lucentis* outside the US. Since the initial approval by Switzerland, more than 45 additional countries have approved *Lucentis*.

Even before the launch of *Lucentis*, Novartis was already at the forefront of treatment of AMD through *Visudyne*, a photodynamic therapy that combines intravenous injection of a drug and laser therapy to destroy abnormal blood vessels that cause AMD without harming healthy tissue. Expertise in the field helped Novartis to work closely with regulatory authorities to speed reimbursement discussions and make *Lucentis* available to patients as quickly as possible.

Switzerland and Canada granted the new medicine accelerated regulatory reviews and pre-license sales were allowed in Germany and France. Reimbursement discussions with French authorities were completed only five months after approval, about half the nine months usually required. In Australia, reimbursement talks took a mere four months versus the normal 12 months.

That's very important because treatment with *Lucentis* has to start fairly quickly after diagnosis, Dr. Puginier says. After onset of the disease, the optimum treatment window is six to 12 months.

**Pioneering Patch**

Petra Lauhoff-Spiegel is the main caregiver for her mother, who has been diagnosed with Alzheimer's disease. It's necessary for someone to be with her every day, Ms. Lauhoff-Spiegel says. I help her dress, tidy up the flat, do the laundry and prepare food. But I also provide the affection that a person in her situation needs.

Her mother's condition deteriorated gradually over several years, but eventually medication was prescribed to slow progression of the disease. Administering capsules can be very difficult. Sometimes I put the capsule into her hand along with a glass of something to drink but she lays the capsule down somewhere and just forgets about it, Ms. Lauhoff-Spiegel adds.

A few years ago, the family read about a clinical study sponsored by Novartis testing *Exelon Patch*, a unique new formulation in which medication was administered through a transdermal patch applied to the skin. After contacting St. Josef-Hospital in Bochum, Germany, her mother was enrolled into the study. Using the patch, Ms. Lauhoff-Spiegel says, her mother seems to have fewer side effects: The patch is easier to handle and once she has it on her shoulder, I know it will stay there and she will get the medication she needs.

*Exelon Patch* is the first and only transdermal treatment for Alzheimer's disease, a degenerative brain disorder affecting 18 million people worldwide and the third-leading cause of death in people older than 65 after cardiovascular disease and cancer.

Alzheimer's disease initially involves the parts of the brain that control thought, memory and language. Age is the most important known risk factor for Alzheimer's disease.

Approval of *Exelon Patch* by both the US and the EU in 2007 was based on results of the international IDEAL study involving almost 1 200 patients with mild-to-moderate Alzheimer's disease. The patch showed similar efficacy to the highest doses of *Exelon* capsules as well as significant improvement, compared to placebo, in memory and the ability to perform everyday activities. In addition, the IDEAL study demonstrated a sharp reduction in reported gastrointestinal side effects (nausea and vomiting) compared to the oral form of the medication.

The patch has been shown to increase compliance, reduce side effects and allow medication to be delivered through the skin into the bloodstream smoothly and continuously over 24 hours, helping to achieve

optimal dosing, says James Shannon, M.D., Global Head of Pharmaceutical Development at Novartis. All these benefits offer the potential for improved outcomes in patients.

Importantly, the patch was preferred by more than 70% of caregivers of participants in the IDEAL study. The patch, which is applied daily to the back, chest or upper arm of patients, was designed with compliance in mind. Caregivers said that transdermal delivery helped them follow treatment schedules and was easier to use than an oral medicine. I am pleased that the patch offers a new approach to treatment adds Mark Wortmann, Executive Director of Alzheimer's Disease International, an umbrella organization that offers support and advice to people with Alzheimer's disease and their caregivers.

*Exelon* was first approved in 1997 and is available in more than 70 countries to treat patients with mild-to-moderate Alzheimer's disease. Since 2006, *Exelon* in capsule form has been approved in the US and EU for the additional indication of Parkinson's disease dementia. In 2007, the US Food and Drug Administration approved *Exelon* Patch for treatment of Parkinson's disease dementia as well as Alzheimer's disease.

### **Comprehensive Blood Pressure Control**

When Paul Bridge was diagnosed with high blood pressure during an annual check-up at the age of 52, it came as a surprise. I was quite active and swam very frequently, even competitively, but my doctor felt that my blood pressure just wasn't where it ought to be, given my lifestyle, Mr. Bridge recalls. He said we had time but that we should tackle it early.

The result was a journey of discovery between doctor and patient. Initially Mr. Bridge explored non-pharmaceutical treatment but it had no more than marginal effect, he says. The next step was to test different classes of antihypertensive medication. Eventually, he was prescribed *Co-Diovan*, a fixed combination of *Diovan* plus a diuretic. That was it, the key to getting my blood pressure down to the good values we were after, Mr. Bridge adds. And once I started with *Co-Diovan*, I stayed on it. My values have remained good and I have had no side effects.

The use of combination therapies is becoming increasingly common, reflecting US and EU treatment guidelines stating that a majority of patients with high blood pressure will require two or more anti hypertensive drugs to achieve effective control.

Yet Mr. Bridge, a retired banking executive who lives in Basel, Switzerland, is unusual in adhering to treatment and keeping his blood pressure under control during the past 10 years. Using a widely accepted definition of normal blood pressure, only about 30% of patients in the US achieve goal blood pressure, and the US does far better than other countries.

I understood early on that hypertension is a killer, Mr. Bridge says. But as lifestyle was not an issue in my case, I never regarded having to take medication for high blood pressure as a failure on my part. My swimming gives me an awareness of the state of my body and I have every interest in keeping it in as good shape as possible. *Co-Diovan* is one of the tools that modern medicine gives me to do that and I do indeed have the necessary self-discipline to make sure I keep it up.

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The risk of developing high blood pressure increases with age. About 60% of Americans older than 60 have high blood pressure, according to the Seventh Report of the Joint National Committee on the Detection, Evaluation and Treatment of High Blood Pressure.

Clinical studies have clearly demonstrated that effective treatment of high blood pressure reduces both coronary and renal events as well as strokes. Yet hypertension control rates are lowest among people

older than 60 in the US. According to a recent study in the Journal of the American Medical Association, the increase in hypertension prevalence in older Americans highlights the need for interventions that would target prevention.

High blood pressure makes the heart work harder and over time can damage blood vessels throughout the body. Atherosclerosis – deposition of fats in the arteries, caused in part by hypertension – can impede supply of blood to the heart muscle, leading to coronary heart disease and heart attack.

Long-term exposure to high pressure can lead to damage to the blood vessels of the kidney, allowing functional deterioration. This deterioration can lead to kidney failure, also commonly called end-stage renal disease.

Current treatment guidelines recommend a blood pressure goal of 140/90 mmHg in patients and more stringent goals for people with conditions such as diabetes or renal disease that increase the risk of organ damage. Despite the availability of multiple classes of blood pressure-lowering medicines, fewer than half of people with hypertension receive treatment and about 70% of people who are treated fail to achieve their recommended blood pressure goal. Importantly, a decrease of just 2 mmHg in systolic blood pressure is associated with a reduction in the risk of death from heart disease by 7%, and death from stroke by 10%.

Today, most treatment guidelines recognize that the majority of patients will require combinations with at least two anti-hypertensive drugs. In the US, Japan and major countries in Europe, more than 60% of patients treated for high blood pressure receive combination therapy.

*Exforge*, approved in both the US and EU last year, is a single-tablet combination of two of the worlds leading high blood pressure medicines, amlodipine and *Diovan*, flagship of the Novartis cardiovascular franchise. Delivering two agents in a single pill is expected to improve compliance with treatment.

Approval of *Exforge* was supported by an extensive clinical trial program involving more than 5 000 patients. Results show that *Exforge* can help up to nine out of 10 patients reach their treatment goal of systolic blood pressure under 140 mmHg. *Exforge* also works across all grades of high blood pressure and offers blood pressure reductions of over 40 mmHg in patients with higher baseline blood pressure.

By contrast to *Exforge*, which is a fixed combination of two established medicines, *Rasilez/Tekturna* is a direct renin inhibitor, a novel mechanism of action. The renin system is a key regulator of blood pressure and overactivity of the renin system is one of the principal causes of hypertension in a substantial proportion of patients. By directly inhibiting renin at the point of activation, *Rasilez/Tekturna* provides more complete control of the renin system than other antihypertensives that work further downstream.

With an elimination half-life of about 40 hours, *Rasilez/Tekturna* provides sustained and consistent blood pressure efficacy for 24 hours and beyond. This is an important treatment consideration because many high blood pressure medicines fail to work around the clock, especially during the early-morning hours when blood pressure often surges.

Moreover, poor compliance with anti-hypertensive therapy can lead to suboptimal blood pressure control and substantial increases in blood pressure can occur even after an occasional missed dose. Studies with *Rasilez/Tekturna* have shown that blood pressure reductions are maintained for four days even after the last dose.

Regulatory approval of *Rasilez/Tekturna* was based on data from more than 7 500 patients, generated in more than 40 clinical trials. Novartis also has begun an ambitious program of new studies, called ASPIRE HIGHER, to demonstrate whether more complete control of the renin system can provide organ-protection benefits beyond blood pressure lowering.

Initial studies in the ASPIRE HIGHER program, including heart-failure patients and people with type 2 diabetes with proteinuria (excessive amounts of protein in the urine) delivered positive results during 2007. Additional studies including patients with high blood pressure and left-ventricular hypertrophy, an enlargement of the left pumping chamber of the heart are due to report in 2008.

Another milestone in 2007 was the start of ALTITUDE, a large clinical-outcomes trial that will evaluate the efficacy of *Rasilez/Tekturna*, in addition to conventional therapy, in preventing cardiovascular and renal complications in patients with diabetic nephropathy who are at high risk of such events. ALTITUDE has a projected study population of more than 8000 patients and completion is anticipated by the year 2012.

Data from outcomes studies are viewed as the final proof of treatment by patients and physicians, and the gold standard of value-for-money by cost-conscious governments, insurers and other payors. Outcomes data generated through the *Diovan* megatrial program, involving more than 50 000 patients across the cardiovascular continuum, led to additional approvals for the indications of heart failure, and reduction of cardiovascular death in patients at high risk following a heart attack.







## **NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH**

AIN457 was among a group of development compounds completing positive proof-of-concept trials in 2007. As a promising treatment for psoriasis and other autoimmune disorders, AIN457 underscores the growing emphasis on biologic therapies at the Novartis Institutes for BioMedical Research (NIBR) as well as intense collaboration between disease areas that is a distinctive feature of NIBR research strategy.

During 2005, tantalizing evidence of a link between Th-17 cells and patients suffering from psoriasis provided scientists at Novartis a key ingredient for transforming their own fundamental work into a medical advance.

Th-17 cells are specialized immune cells that help to protect the body against attack by certain microorganisms and fungi. Evidence had been mounting that Th-17 cells also appear to play a key role in several autoimmune diseases, ranging from rheumatoid arthritis to multiple sclerosis and dozens of other rare conditions.

The destruction of tissue characteristic of autoimmune diseases is caused by interleukin 17 (IL-17), a protein secreted by Th-17 cells. This meant that blocking Th-17 should abrogate ill effects in autoimmunity.

But how to confirm this hypothesis safely and quickly? Autoimmune diseases fluctuate in intensity, and many tissues affected are hard to check routinely to see if a drug is effective. That is one reason why the possibility that IL-17 was important in psoriasis, a skin disease, seemed such an exciting opportunity.

Moreover, Novartis scientists had created AIN457, a monoclonal antibody that inhibits IL-17. Monoclonal antibodies are laboratory-made versions of naturally occurring proteins that can locate and bind to substances in the body.

We decided immediately to examine AIN457 in psoriasis in patients, recalls Timothy Wright, M.D., Head of Exploratory Development at Novartis. That study exceeded expectations as a single infusion of AIN457 provided relief lasting for more than three months to a majority of patients taking part.

The successful Proof of Concept (PoC) with AIN457 in treatment of psoriasis is the first time that this IL-17/Th-17 mechanism has been proven in man. And as a result, we now have a strong position in the industry in this area, says Dhaval Patel, M.D., Head of Autoimmunity & Transplantation research at the Novartis Institutes for BioMedical Research (NIBR) site in Basel, Switzerland.

The AIN457 program says a lot about research and development at Novartis. First and foremost, it underscores the importance of being at the cutting edge of biology. Work at NIBR on AIN457 began as part of fundamental programs directed at a particular cell type, the lymphocyte, with suspected, but by no means certain, relationships to autoimmune diseases. The project took off in earnest as evidence of its medical importance accumulated.

AIN457 promises to be one of the first projects tackled by the new Biologics development unit formed during 2007 in response to the growing emphasis on monoclonal

antibodies and other biologic technologies at NIBR. Monoclonal antibodies now comprise 25% of NIBR's research portfolio, compared to only 4% of the portfolio a few years ago.

The Biologics program deserves a focused effort so we really can reap all the opportunities and benefits we have from this discovery effort, says Daniel Vasella, M.D., Chairman and Chief Executive Officer of Novartis.

The AIN457 program also underscores the integration between research and development as well as across disease areas in each function that has become a distinctive feature of research strategy at Novartis. Drug discovery at NIBR focuses on pathways, fundamental signaling networks that control many of the basic cellular functions of life. By identifying components of the core pathway, as well as other proteins that interact with the pathway and can modify its function, Novartis scientists seek to pinpoint key nodes that can be inhibited with a drug or biologic therapy, thus arresting the abnormal pathway function that underpins disease.

Approaches that integrate research across traditional disease-area boundaries are critical because a defective pathway may be involved in multiple diseases. At Novartis, sharing ideas as well as compounds to be tested among disease areas allows us to understand the biology, as well as the best patient population, for a given molecule as early as possible, Dr. Wright says.

As the AIN457 program demonstrates, availability of a medicine with a well-defined mechanism of action for testing in patients enables a company to confirm promising hypotheses much earlier than rivals. We are very responsive to emerging data and don't wait years to bring these treatments to patients, Dr. Wright adds. In fact, we can do so very nimbly as in this case branching off in mid-stream in a new direction that could end up being beneficial for patients and the company.

### **Orchestrating Immune Defenses**

IL-17 was isolated in 1995 but Th-17 cells weren't identified as a subset of immune cells and the source of IL-17 for another decade. Many details about the role of Th-17 cells are still under investigation today but their normal function appears to be orchestrating immune defenses against microbial invasion. As part of an elaborate signaling cascade, naïve T-cells differentiate into Th-17 cells that secrete IL-17 and that protein known as a cytokine recruits other immune-system cells to the scene of the attack.

The suspected role of Th-17 in rheumatoid arthritis stems from observations that levels of IL-17 are elevated in fluids taken from joints of patients afflicted with the condition. Moreover, studies in animals demonstrate that IL-17 acts in concert with other cytokines to enhance joint inflammation and destruction of cartilage and bone. Basically the picture that is emerging is that Th-17 cells are really the ones that cause the damage in the tissue, says Jan de Vries, Ph.D., Global Head of the Autoimmunity & Transplantation Disease Area at NIBR.

Clearly, Novartis scientists working in those early days in the area of rheumatoid arthritis under leadership of Brian Richardson, Dr. vet. med., Head of Arthritis and Bone Metabolism Research, were ahead of their time in picking IL-17 as a potential antibody target. Establishment of the new disease area Autoimmunity & Transplantation at NIBR in 2003 combined with the renewed interest in therapeutic monoclonal antibodies was instrumental in enabling Dr. de Vries and his collaborators to move AIN457 forward quickly into testing.

Of course, the AIN457 program tapped deep pools of knowledge at NIBR, particularly a heritage of cytokine research dating back almost two decades. Franco Di Padova, M.D., the Senior Research Investigator at NIBR who led the team that generated AIN457, recalls that, at the outset of the program, it was barely possible to detect

low levels of IL-17 in blood and infected cells of patients. Subsequent progress was due to development of increasingly sophisticated and sensitive assays.

At first, IL-17 was considered a less-potent cytokine than tumor necrosis factor and IL-1, both established targets for drug discovery, Dr. Di Padova says. The AIN457 team broadened its understanding of IL-17 biology through a crucial collaboration with Professor Wim van den Berg, Head of Experimental Rheumatology at Radboud University Nijmegen Medical Centre in the Netherlands.

That's how it all started, says Dr. Di Padova. Professor van den Berg and others in the field were putting out threads of emerging biology and hints about the potential involvement of IL-17 in disease pathogenesis.

Working closely with Professor van den Berg helped the AIN457 team unravel the biology of IL-17 and steer through the explosion of research targeting the cytokine and Th-17 cells in recent years.

#### **A Fully Integrated Biologics Company**

Once AIN457 had been discovered, the program gained additional traction from an increasing strategic focus at NIBR on biologic treatments, and monoclonal antibodies in particular.

The 1984 Nobel Prize in Medicine was awarded to Georges Koehler and Cesar Milstein for their discovery of so-called hybridoma technique that allows unlimited production of monoclonal antibodies with predetermined specificity. The technology is now a pillar of modern biotechnology and according to the US industry group PhRMA, more than 150 monoclonal antibodies are currently in development as biotechnology medicines.

Both of the predecessor companies of Novartis were active in research targeting monoclonal antibodies. *Xolair*, the first monoclonal antibody to be approved for the treatment of asthma, was developed under an agreement between Novartis, Genentech Inc., and Tanox Inc. *Simulect* is a monoclonal antibody approved for the prevention of acute rejection episodes in recipients of kidney transplants. Under the leadership of Professor Mark Fishman, M.D., President of NIBR and member of the Executive Committee of Novartis, discovery and development of monoclonal antibodies and other biologics has become a strategic priority.

The push into biologics reflects limits on biological targets accessible to traditional small-molecule therapies. Ultimately what we want to do is to use the whole human genome for drug discovery, Dr. Fishman explains. Antibodies are able to hit parts of pathways inaccessible to low molecular-weight compounds, especially molecular targets that are secreted by cells or located on the cell surface.

Yet even antibodies only touch about half the potential targets in the human genome, Dr. Fishman says. That is why Novartis has moved rapidly into another cutting-edge biologic technology, RNA interference (RNAi), a natural gene-silencing defense used by plants and animals against invading pathogens. Synthetic versions of RNAi could silence malfunctioning genes that cause disease.

There is no single answer in drug discovery. We need the entire armamentarium of potential therapeutics, Dr. Fishman adds. To that end, complementing our traditional strength in discovering chemicals as drugs, it's fair to say that Novartis now is also a full-fledged biologics company.

The growing output from NIBR promises to have a knock-on effect downstream in Pharmaceutical Development, prompting creation of the new Biologics development unit last year.

More and more, research at NIBR is focusing on targets that require us to go to biologics, but the development of biologics is different from small molecules, says James Shannon, M.D., Global Head of Pharmaceutical Development. Safety management is different in biologics and it is important to invest early, and to get the manufacturing process right early on. In addition, the intellectual property space relating to biologics is very complex and needs special focus.

The new Biologics development unit headed by Abbie Celniker, an executive with extensive experience in the US biotechnology industry will tackle those challenges. The Biologics unit will work closely with both NIBR and Development but also maintain key interfaces with marketing and production. The aim is to bring together all the talent we have in the Group relating to biologics and cultivate that entrepreneurial biotech culture, which is needed to really push the innovation of biotech products forward, Dr. Shannon adds.

### **Overarching Strategy**

The success of AIN457 underscores the intimate and persistent interactions between research and development that set Novartis apart from many rivals. This teamwork is most apparent in the Exploratory Development function that serves as a bridge between research and later clinical development.

Working closely with NIBR scientists, Exploratory Development focuses on selection and effective profiling of drug candidates, and their transition to early stages of development. A distinctive feature of Early Development is the contribution of physician-scientists from the Translational Medicine group who complement the fundamental scientific discoveries by NIBR with clinical acumen needed to pinpoint both the diseases and patients most likely to benefit from a new treatment.

Proof-of-Concept studies (PoCs) are the cornerstone of the overarching strategy to bring more and better new medicines to

market in the shortest possible time. PoCs are small-scale Phase I clinical trials in well-defined diseases or targeted patient populations that allow a preclinical hypothesis about a mechanism of action to be tested and also provide a quick confirmation of potential therapeutic benefit to patients. Unsuccessful PoC studies help to eliminate compounds with toxicity or other liabilities early in the development process.

Once a successful PoC provides evidence that the medicine can help patients in these carefully targeted disease areas, Novartis R&D strategy expands that therapeutic benefit with parallel studies in additional diseases that share a common disease mechanism.

The clinicians in our Translational Medicine group are continuously part of a cross-functional research approach from the earliest stages of drug discovery. Often, uncommon but well-defined diseases are chosen for initial PoC studies, using biomarkers to provide clear, preliminary readouts about new Novartis medicines.

While each positive PoC represents a key milestone, success doesn't guarantee that the compound will make it to market. Discovery and testing of back-up compounds, based on the same mechanism of action, is another established feature of drug development at Novartis. This backup strategy provides alternative compounds if studies uncover side effects that rule out a lead compound as a candidate for further development.

The role of Translational Medicine physicians includes planning alternative development paths for a compound, working in what Dr. Wright calls a "tidal zone" where research and translational medicine interface. "It's where you see a lot of the action and intense interchange of ideas. And it's where these parallel indications pop out," he says.

The research component is identifying the biology and the indications for that particular molecule in humans. The development part is getting the medicine registered. No one can succeed alone; we have to cooperate to get through the research phase, into the clinic and ultimately into the market. And the counterculture here is that ideas are shared openly because we share the ultimate goal: to help patients.

The initial PoC study for AIN457 in late 2005 explored safety and efficacy through a careful dose escalation schedule in accordance with regulatory guidance. As an unplanned dividend, safety data on AIN457 obtained during the rheumatoid arthritis study was critical in gaining the green light from regulators to begin the parallel PoC in psoriasis.

For all the positive results to date, Dr. Wright cautions that it is still early in terms of exploring safety and efficacy of AIN457 in psoriasis in a clinical setting. Follow-up studies are planned to explore a broader range of dosage. "At week 12 we're still not seeing any evidence of flaring and some patients are still improving after the first dose," he adds. Psoriasis is a cyclical disease and episodes of flaring, or recurrences, appear repeatedly over time.

Patients in the initial study cohort of patients have been invited to extend the follow-up period to six months, rather than the four to six weeks initially planned.





## VACCINES AND DIAGNOSTICS

Second year of strong growth in new Division created after Chiron acquisition in April 2006. Significant increase in vaccine deliveries underpins profitable growth ahead of schedule.

Net sales up 52% (+47% in local currencies) to USD 1.5 billion. Excellent performance driven by TBE (tick-borne encephalitis), pediatric and seasonal influenza vaccines as well as NAT (nucleic acid testing) blood testing products. On a comparable full-year basis, net sales rise 25% (including unaudited net sales from Chiron before April 2006 acquisition).

Strong business performance underpins improvement in operating income. Significant investments made in R&D, particularly for late-stage trials involving meningococcal meningitis vaccine candidates. The adjusted operating margin is 21.3% of net sales.

Novartis the second-largest manufacturer of influenza vaccines for the US. Developing a broad portfolio of vaccines against seasonal influenza and to protect people from an influenza pandemic. New cell-culture technology, approved in Europe in 2007, considered the most important production innovation for influenza vaccines in over 50 years.

Two meningococcal meningitis vaccine projects achieving key milestones. Results from Phase II trials show *Menveo* quadrivalent vaccine against four serogroups A, C, W135 and Y may protect infants as young as two months old. Highest attack rate for this potentially fatal bacterial disease seen in infants from three to 12 months of age. Existing vaccines have not worked in very young children.

Comprehensive Intercell alliance formed in 2007 to provide access to a promising vaccine development pipeline. Builds on collaboration for IC51 Japanese encephalitis vaccine.

Consistent growth through geographic expansion in diagnostics business. Dedicated to preventing the spread of infectious diseases through novel blood-screening tools. Important West Nile Virus assay test launched in the US in 2007.

## VACCINES AND DIAGNOSTICS

| <b>KEY FIGURES</b>                                   | <b>2007</b>  | <b>2006 (1)</b> |
|--|--------------|-----------------|
| <b>(In USD millions, unless indicated otherwise)</b> |              |                 |
| Net sales  | <b>1 452</b> | 956             |
| Operating income                                     | <b>72</b>    | -26             |
| Research and development                             | <b>295</b>   | 148             |
| Research and development as % of net sales           | <b>20.3</b>  | 15.5            |
| Free cash flow                                       | <b>-91</b>   | 151             |
| Net operating assets                                 | <b>4 801</b> | 4 536           |
| Additions to property, plant & equipment (2)         | <b>287</b>   | 113             |
| Number of associates (FTE (3)) at year-end           |              |                 |
|  | <b>4 810</b> | 3 395           |

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(1) Chiron post-acquisition period: April 20 - December 31

(2) Excluding impact of business combinations

(3) Full-time equivalent positions





## VACCINES AND DIAGNOSTICS

The meningitis franchise is a linchpin of dynamic growth ambitions in the Vaccines and Diagnostics Division. Two meningitis vaccines currently in development aim to set new standards for broad protection and extend coverage across all ages. At the same time, Novartis achieved significant advances with influenza vaccines last year, reinforcing its position as a global leader.

At an advanced stage of negotiations leading to the acquisition of Chiron Corp. two years ago, Novartis executives learned that future development of *Menveo*, a promising vaccine against bacterial meningitis, was in doubt.

At that time it was close to being stopped, recalls Joerg Reinhardt, Ph.D., Head of the new Vaccines and Diagnostics Division and member of the Executive Committee of Novartis. We were told there was no money to take the program forward.

Once Dr. Reinhardt took the helm at the new Division that encompasses most operations of the former Chiron, development of *Menveo* was accelerated. During 2007, more than 10 000 subjects were enrolled in clinical trials of the vaccine. This year, Novartis expects to submit an initial regulatory application for use of *Menveo* in people age 11 years or older. And in 2009, regulatory filings are planned for use of the vaccine in infants and young children, the group most vulnerable to meningococcal disease.

There are more than a dozen distinct classes of *Neisseria meningitidis* or meningococcus, the bacterium that causes most cases of bacterial meningitis. *Menveo* is a vaccine against the A, C, W and Y serogroups (MenACWY) but Novartis Vaccines is also developing a pioneering recombinant vaccine against all strains of serogroup B meningococcus (MenB).

If we're successful with *Menveo* and our recombinant MenB vaccine, we'll transform the field of meningitis, says Ralf Clemens, M.D., Head of Development at Novartis Vaccines.

Net sales growth in 2007 of 25% (on a comparable 2006 basis) has made the Vaccines and Diagnostics Division one of the fastest-growing vaccine manufacturers and helped it achieve profitability ahead of schedule. Moreover, the acquisition and turnaround of the Vaccines and Diagnostics Division underscores the strategic focus of Novartis on entering high-growth sectors of healthcare. The global market for vaccines and molecular diagnostics is expected to grow at solid, double-digit rates during the coming five years, significantly faster than demand for prescription medicines during the period.

Novartis Vaccines expects to do even better, according to Dr. Reinhardt. Over the next five years or so, we want to become one of the top three players in the vaccine market, Dr. Reinhardt says. Currently, Novartis ranks fifth among global vaccine manufacturers.

## Meningitis

The meningitis-vaccine franchise is shaping up as a linchpin of the Division's ambitions. Meningococcal meningitis, a disease caused by the *Neisseria meningitidis* bacterium, strikes more than 500,000 infants, adolescents and young adults every year and kills 50,000 of them, according to the World Health Organization.

Sometimes meningococcal meningitis can lead to death only hours after the onset of symptoms, despite prompt treatment with antibiotics. A large proportion of people who survive an infection suffer long-lasting disability, including hearing loss, brain damage, renal failure or limb amputations. Outbreaks of meningococcal meningitis constitute a major public-health threat across sub-Saharan Africa but have also occurred in developed countries, ranging from Norway and New Zealand to the Normandy region of northern France.

Among the different serogroups, or distinct classes, of meningococcus that have been identified. Group A meningococcus (MenA) is the most common cause of epidemics in Africa. Group B and Group C predominate in Europe, and serogroups Y and W are becoming increasingly important in the US and the Middle East. MenB is the most lethal form of meningococcus in many countries.

One Novartis vaccine is already in use against a specific strain of MenB found only in New Zealand. Since the start of a nationwide vaccination program in 2004, the incidence of meningococcal meningitis in New Zealand has fallen by more than 80%.

Two other vaccines in development at Novartis—*Menveo* and the recombinant vaccine for MenB—aim to set a new standard for broad protection against serogroups as well as to extend protection across all ages, including infants and young children.

*Menveo* is a conjugate vaccine providing simultaneous protection against the A, C, W, and Y serogroups of meningococcus. Phase III studies in adolescents, adults and infants are ongoing, and it is expected that a regulatory submission will be made for *Menveo* in adolescents in 2008. Phase II data have shown good protection in this population, and Phase III data are expected to be released during the first half of 2008. A dossier for the use of *Menveo* in infants is planned for submission in 2009.

The recombinant MenB vaccine is a prototype for a new paradigm in vaccine discovery. After several decades of conventional vaccine research failed to deliver a vaccine against Group B meningococcus, Novartis scientists used a radically new approach to identify a set of protein antigens from the bacterium. Known as reverse vaccinology, this method makes use of genomic information on a range of different MenB sub-types, as well as recombinant methods, to identify and produce conserved, surface-accessible protein antigens.

The availability of pathogen genomes that can be mined using reverse vaccinology has increased the number of potential antigens by orders of magnitudes, says Rino Rappuoli, Ph.D., Head of Research for Novartis Vaccines. It allows us to develop novel vaccines by using the rules of the game that we know and have been successful with in the past. Every program where we are using reverse vaccinology is doing extremely well and we've only taken a handful of top candidates so far. The opportunity is huge.

## Edgar Filing: NOVARTIS AG - Form 6-K

For the recombinant MenB program, a vaccine composed of three proteins and an outer membrane vesicle component was selected as the lead candidate. In a recent Phase II study, this vaccine has demonstrated that it protects infants from more than 70% of the known MenB strains, an enormous improvement over the best previous vaccines for which coverage was about 20%.

Phase III trials will begin this year; an estimated 5 000 subjects are expected to be enrolled in studies. If our initial data are

confirmed in Phase III trials, we will make the MenB vaccine the highest priority in our development program because of the unmet medical need, Dr. Clemens says.

## **Influenza**

To achieve its ambitious goal of becoming a top-three player in vaccines, Dr. Reinhardt says Novartis Vaccines not only needs to gain global leadership of the meningitis business but also must maintain its leading position in influenza vaccines.

In keeping with this objective, the most significant advances for Novartis Vaccines last year came in the influenza market. The Division shipped 40 million doses of *Fluvirin* influenza vaccine to the US during last year's flu season, including the first shipments to healthcare providers in August. In addition, more than 30 million doses of influenza vaccines were produced for European markets in the 2007-2008 flu season.

Influenza vaccines in development also passed key regulatory milestones last year. Novartis received approval from European Union (EU) regulatory authorities for *Optaflu*, the first influenza vaccine produced using a proprietary cell-culture technology in place of the traditional production based on chicken eggs. Cell-culture manufacturing is the first major innovation in influenza vaccines in more than 50 years. The new technology enables flexible, faster start-up of vaccine manufacturing and a rapid response to potential pandemic influenza threats.

*Optaflu*, the cell-culture-based vaccine, will be rolled out in Europe this year and a regulatory application for the vaccine is also expected to be submitted to US authorities during 2008. Novartis has broken ground on a new USD 600 million cell-culturebased manufacturing facility in Holly Springs, North Carolina, where initial production is anticipated by 2011.

According to the WHO, seasonal influenza epidemics typically result in up to 500 000 deaths annually. Significant demand for flu vaccine is expected as countries such as Russia and China, where only 5% to 7% of the populations are vaccinated, move closer to US and EU vaccination rates of more than 25%. Demand in more developed markets for superior efficacy products will account for additional growth in the market.

In another major advance for preparations against a possible influenza pandemic, EU regulators approved *Focetria*, a new Novartis vaccine for use following the declaration of an influenza pandemic. *Focetria* contains the proprietary adjuvant *MF59*, which enhances the response of the immune system to the vaccine, improving efficacy and reducing the quantity of antigen needed to achieve protection.

Manufacture of *Focetria* would begin once a pandemic is declared by the WHO using the influenza strain that was actually causing widespread illness. Dr. Clemens notes that, based on experience from the 1918-1919 pandemic, "There will be a rapid spread of the disease within the first two months and if we wait for the true pandemic strain to be available, we'll be too late for many people."

In consequence, Novartis is developing *Aflunov*, a vaccine for H5N1 influenza that could be stockpiled or even used in advance of a pandemic: a so-called pre-pandemic vaccine. *Aflunov* became the first such vaccine submitted to EU regulatory authorities.

*Aflunov* is based on the currently circulating H5N1 influenza strain, and clinical data have demonstrated that it is protective for this strain as well as offering a degree of protection from other related strains. *Aflunov* also contains the *MF59* adjuvant, strengthening the immune response to the vaccine, and helping to provide a degree of cross-strain protection. Clinical studies in more than 4 000 people have demonstrated that *Aflunov* is as safe as *Fluad*, the adjuvanted seasonal-flu vaccine from Novartis that has been used to vaccinate more than 27 million people to date.

Global public-health advocates recognize avian influenza as a major worldwide health concern and we are ready to produce vaccines that will help protect people before and during an influenza pandemic, Dr. Reinhardt says.





## SANDOZ

The world's second-largest generics company with leading positions in key markets, a broad product portfolio and expertise critical for success in providing difficult-to-make generics and biosimilars.

Going beyond traditional generics to offer higher-value, differentiated products that apply advanced technologies such as skin patches, inhalation devices and sustained-delivery dosage forms.

Dynamic performance as net sales expand 20% (+13% in local currencies) to USD 7.2 billion, led by the US and recent product launches as well as growth initiatives in Eastern Europe and emerging markets. 2007 growth represents incremental contribution of USD 1 billion in net sales.

Operating income grows faster than net sales, up 41% to USD 1.0 billion thanks to strong business expansion as well as operational improvements throughout Sandoz following 2005 acquisitions of Hexal and Eon Labs. Operating margin improves to 14.5% of net sales from 12.4% in 2006, but rises to 20.0% on an adjusted basis.

US accounts for 27% of net sales. Growth driven by a broad portfolio, demand for difficult-to-make generics with limited competition, including metoprolol succinate ER (Toprol-XL®) and cefdinir (Omnicef®), and the launch of authorized generics that include amlodipine/benazepril combination (*Lotrel*) and ondansetron (Zofran®).

Market-share gains in Eastern Europe reflect benefits of expanding presence in this fast-growing region. Germany sustains leadership under tough conditions. Double-digit growth in Latin America and key emerging markets.

Sandoz the leader in gaining US and European approvals for biosimilars, which are generic versions of previously approved biotechnology drugs. Biosimilars offer savings for patients and payors. European approval of epoetin alfa biosimilar in 2007 comes after landmark *Omnitrope* approval in 2006.

**SANDOZ**

| <b>KEY FIGURES</b><br><b>(In USD millions unless indicated otherwise)</b> | <b>2007</b>   | <b>2006</b> |
|---|---------------|-------------|
| Net sales   | <b>7 169</b>  | 5 959       |
| Operating income  | <b>1 039</b>  | 736         |
| Research and development  | <b>563</b>    | 477         |
| Research and development as % of net sales                                | <b>7.9</b>    | 8.0         |
| Free cash flow  | <b>1 112</b>  | 876         |
| Net operating assets  | <b>14 664</b> | 13 464      |
| Additions to property, plant & equipment (1)                              | <b>627</b>    | 264         |
| Number of associates (FTE (2)) at year-end                                | <b>23 087</b> | 21 117      |

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(1) Excluding impact of business combinations

(2) Full-time equivalent positions





## SANDOZ

Sandoz, the generics Division of Novartis, is leading the industry in difficult-to-make generics based on specialized formulations ranging from transdermal patches and implants to extended-release tablets. This strategy is epitomized by biosimilars, follow-on versions of existing biologic medicines. Sandoz achieved a second regulatory milestone in its drive to bring high-quality, cost-effective biosimilars to patients with the European approval of a copy of epoetin alfa.

On May 7, 2007, the day after patent protection expired on the antibiotic cefdinir, Sandoz began shipping the first generic version to wholesalers and pharmacies across the United States.

Marketed under the brand name Omnicef®, cefdinir was one of the most widely prescribed cephalosporin antibiotics in the US. Once patent protection lapsed, it promised to be a prize addition to the broad antibiotic portfolio of Sandoz, the generics Division of Novartis and one of only a handful of companies worldwide with dedicated production of third-generation cephalosporins.

Yet beating rivals to market required a combination of deft development, legal acumen and a nimble trans-Atlantic supply chain. Only four days before the projected launch, the Sandoz Legal Department won a crucial judgement in a US District Court that could have blocked distribution of generic cefdinir. As soon as the court delivered its ruling, trucks loaded with generic cefdinir pulled out of the Sandoz cephalosporin facility in Kundl, Austria, and raced to a nearby airport where three jumbo jets were waiting to fly the cargo across the Atlantic.

To be successful, our products need to be on the market on Day One following patent expiry of the originator productsays Andreas Rummelt, Ph.D., Head of Sandoz and member of the Executive Committee of Novartis. I was particularly impressed that our cefdinir shipment cleared US customs and was released in only a few hours. That usually takes several days and at times can take more than a week, Dr. Rummelt adds. It was a great performance and shows the kind of commitment from our people I like to see.

As a global leader in the rapidly growing generics industry, Sandoz is a key pillar of the Novartis business portfolio that meets the evolving needs of patients and societies. Sandoz provides high-quality, affordable medicines in markets that encompass 90% of the world's population. And by replacing branded medicines after patent expiry, generics also spur innovation by freeing up funds payors redeploy to purchase innovative medicines.

During 2007 Sandoz net sales climbed 13% (in local currencies). Operating profit rose 41% and profit margins widened by two percentage points. The dynamic performance was driven by recent launches of difficult-to-make generics that more than offset continued pricing pressure in many markets. The US was the biggest growth driver last year but the Division's net sales also rose strongly due to initiatives in emerging growth markets and Eastern Europe.

### Dynamic Launches

Sandoz is leading the way in difficult-to-make generics, products that are based on challenging active pharmaceutical ingredients or require specialized formulations and technologies, ranging from implants and extended-release tablets to transdermal patches and inhalation devices.

Along with cefdinir, key launches in the US included additional dosages of metoprolol succinate, a drug used to treat high blood pressure and heart failure. Sandoz is the first generics company to launch metoprolol succinate in a state-of-the art sustained-release formulation using a multiple-unit pellet system (MUPS).

The Sandoz version of ipratropium albuterol, a medicine used to treat respiratory disorders, earned a coveted period of market exclusivity following the US launch last year. It was an important strategic mile-stone for Sandoz because treatments for respiratory diseases represent a major growth initiative.

In Europe, Sandoz launched leuprorelin, a treatment for prostate cancer, in an implant formulation injected into the abdominal skin of patients. The implant offers patients and physicians cost savings and greater convenience compared to the originator product.

There isn't a single element that leads to hard-to-make products. It's usually a combination of things, says Bernhard Hampl, Ph.D., Head of Sandoz operations in the US. It's about getting the right products to market on time. Opportunities like these are what drive our business.

Crowning the difficult-to-make strategy are biosimilars, follow-on versions of existing medicines derived from living organisms that have been genetically modified to produce a desired protein. Last year, Sandoz became the first company to receive European Commission approval for a biosimilar epoetin alfa (EPO), another milestone in the company's efforts to bring high-quality, cost-effective biological medicines to patients. The Sandoz version of epoetin alfa was launched in Germany and the Netherlands during 2007 and will be rolled out in additional EU markets this year.

In a precedent-setting decision in April 2006, Sandoz became the first company to obtain European approval for a biosimilar medicine, the human growth hormone *Omnitrope*. Approval of *Omnitrope* in the US followed a month later. As more biopharmaceuticals lose patent protection in coming years, biosimilar products are expected to play a key role in the growth strategy of Sandoz.

Markets are so crowded today that generic versions of most blockbuster drugs become low-margin commodities, Dr. Rummelt says. Sandoz needs to make the products which not everyone else can make, where our resources and specialist technologies and capabilities set us apart from the competition.

### Deep Pipeline

During 2007, Sandoz submitted regulatory applications for 92 different projects to authorities around the world. At the same time, the Development team has submitted supplementary regulatory applications in new markets for many existing products, part of a growth initiative prompted by the acquisition of Hexal and Eon Labs, says Gerhard Schaefer, Ph.D., Head of Global Product Development at Sandoz. We want to increase our business outside traditional core markets of Europe and the US by covering more and more countries with a potential for generics where we are not yet active, Dr. Schaefer adds.

The Sandoz development pipeline encompasses more than 750 projects, including a significant proportion of difficult-to-make products. Each new project completed by Sandoz Development represents a specific formulation, often available in multiple doses.



Development of difficult-to-make projects can take as long as seven years. Registration normally takes two years in the US but three years in Europe. Classical bioequivalence studies last about six months but some difficult-to-make products and biosimilars require Phase III clinical studies that last up to two years. Additional years are needed to develop the active pharmaceutical ingredient and specific formulations.

Project selection is a crucial competitive step. We look very early at potential future blockbusters, sometimes while pivotal clinical studies are ongoing, always aware of the risk that the originator may fail, Dr. Schaefer says. Even at this early stage, we focus on additional developments based on in-house technologies in order to create intellectual property that could make life more difficult for our main generic competitors.

A difficult-to-make product often starts with a complex active pharmaceutical ingredient. Traditionally, generic companies have sourced active pharmaceutical ingredients from third parties but in-house development offers an increasingly important competitive advantage for leading generic companies today.

Often we can create our own intellectual property by using more modern technologies in chemistry than ones available when the originator developed the molecules many years earlier. And the new technologies enable us to improve quality by reducing impurities, for example, Dr. Schaefer adds. Development projects involving more than 70 active pharmaceutical ingredients are currently underway at Sandoz.

### **Patch Prototype**

The prototype difficult-to-make product for Sandoz was a generic version of fentanyl patch, an opioid analgesic marketed under the brand name Duragesic® and used for decades in the management of pain. By the time the basic patent expired in Germany two years ago, fentanyl had become the country's biggest-selling prescription medicine.

That commercial potential made fentanyl a major opportunity for generic manufacturers but the route of administration by transdermal patch posed a formidable hurdle. In addition, as expiry of the basic patent was approaching, the originator company introduced a new-generation matrix-patch formulation of fentanyl and managed to convert a large proportion of physicians and patients to the newer product.

Sandoz began its own patch project in the year 2000 and reached outside the pharmaceutical industry for novel technology. The inspiration was audio tape produced by German chemical giant BASF AG. We looked at both the material itself and the technology used to bring together different layers that comprise an audio tape, then adapted the technology and equipment to development of pharmaceutical patches, Dr. Schaefer says. It's a perfect example of what we mean by development: looking at technologies used in other fields and combining or adapting these ideas to new applications.

Sandoz conducted parallel development programs for both the reservoir-style patch originally used for fentanyl and the new matrix patch. Because we developed our own technology, both of our products avoided infringement of additional patents filed and granted to Johnson & Johnson, Dr. Schaefer says.

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The launches of the Sandoz fentanyl patches during 2005 were huge successes and it's just the beginning. There are clear advantages for patches, mainly in the form of better patient compliance, Dr. Schaefer says. Drugs delivered with patches sometimes help patients avoid side effects such as nausea and vomiting associated with tablet versions of the same medicine. And for patients unable to swallow or elderly patients who often are prescribed multiple

medications for chronic diseases or caregivers who supervise treatment a single patch applied weekly offers greater convenience than tablets that must be taken several times a day.

Sandoz has a broad-based program for additional patch products focusing on indications where patches aren't yet available, Dr. Schaefer says.

The Sandoz version of metoprolol succinate, launched in Germany in 2005, is the first MUPS product introduced to date by a generics manufacturer. The medicine was introduced in the US a year later and earned Sandoz a period of market exclusivity as the first to file for the lowest dosage strengths. Additional dosages of metoprolol succinate were introduced in the US during 2007. Along with a constant release profile, the MUPS formulation allows patients to disperse the tablet in a glass of water and still maintain the extended release dosage.

In Europe the Sandoz product is still the only MUPS version of metoprolol on the market and we have the full range of strengths in most countries, including Germany, Dr. Schaefer says. We will use this platform technology for other products, including cardiovascular treatments and other classes of medicines as well, he adds.

Implants are another platform technology being rolled out at Sandoz. Last year's launch of leuprorelin, a medicine used to treat advanced prostate cancer, culminated a six-year development program and represents the first implant formulation of an anticancer therapy from Sandoz.

Clinical studies demonstrated that the Sandoz implant version of leuprorelin has the same mode of action and achieves the same clinical results as the originator product. By contrast to micro-capsule or powder formulations that must be specially prepared by a physician before injection, the Sandoz leuprorelin comes ready to use. It also requires less of the active pharmaceutical ingredient, giving Sandoz a significant cost advantage over rivals.

Meanwhile, the launch of ipratropium albuterol in the US is the clearest sign yet of a strategic focus on medicines to treat respiratory disorders. Along with external collaborations, the expansion in the respiratory field will tap in-house technologies. We have a dedicated development center for respiratory products and a dedicated plant for production, Dr. Schaefer says.

### **Pioneering Biosimilars**

Pioneering approvals of *Omnitrope* by the US and EU in 2006 as the first follow-on recombinant biotechnology medicine culminated a seven-year process that led through courts on both sides of the Atlantic. The case underscored the commitment of Sandoz to biosimilars, the epitome of difficult-to-produce products.

Sandoz brings unique acumen to the field with more than 25 years of experience in production of biologic medicines. The Kundl, Austria, site is one of the world's biggest development and manufacturing centers for microbially expressed recombinant proteins.

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During 2007, Sandoz built on the initial approvals by rolling out *Omnitrope* in additional countries. Along with geographic expansion, Sandoz introduced more sophisticated formulations of *Omnitrope*, including a new liquid formulation administered with a pen device. Pen devices have been popular delivery options for injectable biotechnology medicines for years, offering accurate dosing as well as convenience that allows use even away from home.

Acceptance of *Omnitrope* by physicians improved steadily during 2007, reflecting growing familiarity with the product. Doctors are switching more and more patients to *Omnitrope*, especially newly diagnosed patients, Dr. Schaefer says.

The European Union approved epoetin alfa (EPO) in August for treatment of patients with renal anemia, as well as those receiving chemotherapy. Sandoz launched the development project in the year 2000 in collaboration with Rentschler Biotechnologie GmbH, a German biotech firm.

In some respects, EPO was a more complex protein to develop than *Omnitrope* because it is produced in mammalian cells and undergoes glycosylation, the addition of certain sugar molecules that cause the protein to fold in a certain way. The regulatory process was also stringent for EPO: three Phase III clinical trials required for approval involved 593 patients and took two years to complete.

This is the beginning of a constant flow of follow-on products coming out of our biotechnology development, Dr. Schaefer adds. Sandoz scientists already are assessing second-generation, long-acting biotechnology products as possible projects. Another major focus will be follow-on versions of monoclonal antibodies that will begin losing basic patent protection in about five years. This is the future and as one of the major players in the field we clearly are looking into these opportunities, Dr. Schaefer says.





## CONSUMER HEALTH

Focus on OTC (Over-The-Counter), Animal Health and CIBA Vision. The final divestments of nutrition businesses completed in 2007 with Medical Nutrition and Gerber sold for after-tax divestment gain of USD 5.2 billion.

Net sales from continuing operations rise 11% (+6% in local currencies) to USD 5.4 billion as OTC and Animal Health deliver double-digit expansion and grow faster than their respective markets. CIBA Vision advances on improved supplies of contact lens and lens-care products.

Thanks to solid performance, operating income improves and supports significant investments in R&D and marketing for product launches and geographic expansion, particularly Japan and emerging markets.

OTC expands thanks to continued focus on strategic brands including *Voltaren*, *Theraflu*, *Benefiber* and *Excedrin* and expansion in emerging markets, including Eastern Europe and Russia. Rapid growth in Japan following entry in 2007 into the world's second-largest OTC market. Maintains position as world's fourth-largest OTC company.

Animal Health, ranked No. 5 in its industry, benefits from solid performances in Europe, Asia-Pacific and Latin America. Sankyo Lifetech acquisition in Japan strengthens presence in companion-animal segment.

CIBA Vision successfully addresses production challenges for lens-care and contact lens products.

**CONSUMER HEALTH CONTINUING OPERATIONS**

| <b>KEY FIGURES</b><br>(In USD millions unless indicated otherwise) | <b>2007</b>   | <b>2006</b> |
|--|---------------|-------------|
| Net sales  | <b>5 426</b>  | 4 902       |
| Operating income excluding restructuring charge<br>(1)             | <b>909</b>    | 761         |
| Operating income   | <b>812</b>    | 761         |
| Research and development   | <b>301</b>    | 260         |
| Research and development as % of net sales                         | <b>5.5</b>    | 5.3         |
| Free cash flow   | <b>772</b>    | 553         |
| Net operating assets (2)   | <b>3 154</b>  | 3 133       |
| Additions to property, plant & equipment (3)                       | <b>209</b>    | 197         |
| Number of associates (FTE (4)) at year-end                         | <b>13 956</b> | 13 111      |

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(1) Excluding USD 97 million of Forward initiative restructuring charge

(2) Excluding Consumer Health discontinued operations

(3) Excluding impact of business combinations

(4) Full-time equivalent positions

**MARKET INFORMATION FOR CONSUMER HEALTH BUSINESSES**

|                   | <b>OTC</b> | <b>Animal Health</b> | <b>CIBA Vision</b> |
|-------------------|------------|----------------------|--------------------|
| Market Growth (1) | 4.0%       | 4.5%                 | 4.0%               |
| Sales Growth (2)  | 6.4%       | 7.7%                 | 3.1%               |
| Market share (1)  | 3.7%       | 6.4%                 | 21.8%              |
| Rank              | No. 4      | No. 5                | No. 2              |

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(1) Source: Nicholas Hall, Internal Market Research

(2) 2007 Local currency growth vs. prior year



## CONSUMER HEALTH

Veterinary reformulations of Novartis medicines discovered and developed for human patients enable the Consumer Health Division to generate additional value from research breakthroughs elsewhere in the Group. Such synergies fuel dynamic growth and make Consumer Health a key pillar in the Novartis strategy of focused diversification in healthcare.

*Percorten* was a pioneering treatment from Novartis for Addison's disease, an uncommon but potentially fatal disorder in which adrenal glands do not function properly and the body is unable to produce normal amounts of certain hormones.

Dogs suffer from a canine version of Addison's disease and the Animal Health Business Unit developed *Percorten-V*, a veterinary reformulation of the original medicine that enables thousands of pets to live long, active lives today.

*Percorten-V* is only one example of the broad portfolio of veterinary versions of Novartis medicines originally discovered and developed for human patients. Just as over-the-counter (OTC) adaptations of prescription-only originator medicines open new markets, human-to-veterinary switches enable the Novartis Consumer Health Division to generate development opportunities from breakthroughs made elsewhere in the Group.

The Consumer Health Division is a key pillar of the Novartis strategy of focused diversification in healthcare to address the evolving needs of patients and societies worldwide. The benefits of that strategy are becoming increasingly clear as new challenges slow growth of the flagship Pharmaceuticals Division.

Our strategy balances risks to some degree and takes advantage of fundamental trends in customer needs, says Daniel Vasella, M.D., Chairman and Chief Executive Officer of Novartis. Consumer Health, which traditionally had lower growth rates than pharmaceuticals, is now growing faster and has the potential to further expand dynamically.

And while pricing pressure on innovative pharmaceuticals continues to intensify in almost all markets around the world, Dr. Vasella adds, pressures are much less severe in the consumer brands. In fact, one has the opportunity to certainly compensate for inflation, sometimes even slightly more, he says.

In 2007, net sales at the Consumer Health Division climbed 6% (in local currencies) as both the OTC and Animal Health Business Units posted double-digit gains through a focus on strategic brands, new product launches and expansion in emerging markets and Japan. Net sales at CIBA Vision rose as deliveries of its contact-lens portfolio rebounded.

On the back of this solid performance, significant investments were made in research and development as well as marketing throughout the Division. For example, Animal Health stepped its up collaborations across the Group, from the Novartis Institutes for BioMedical Research (NIBR) and the new Vaccines and Diagnostics Division to Sandoz, the generics Division of Novartis.



The partnership with NIBR enables the Animal Health Business Unit to identify early-stage active compounds with potential for veterinary indications and has resulted in several new projects being added to the Animal Health development pipeline.

Animal Health and Novartis Vaccines are also joining forces to seek vaccine solutions for viral and bacterial targets. While vaccines traditionally have been a relatively small part of the total human pharmaceutical market, they represent a significantly greater proportion of global sales in animal health. Moreover, sales growth of veterinary vaccines continues to outpace other sectors of the animal health industry.

We seem to be able to move some of the new technologies into our industry more quickly than it is possible to adapt them to human health, says George Gunn, Head of Novartis Animal Health.

The Aqua Health business, which focuses on developing and marketing vaccines used in salmon farming, launched the first effective vaccine to prevent infectious haematopoietic necrosis (IHN), a viral disease spread by wild salmon among farm-raised Atlantic salmon, the mainstay of Canada's burgeoning aquaculture industry. Outbreaks of IHN have caused mortality rates of up to 80% and severe economic losses for fish farmers in British Columbia.

The *Apex-IHN* vaccine developed by Novartis uses plasmids, tiny spheres found naturally in bacteria, to stimulate production of pure viral protein, which in turn triggers an effective immune response in fish.

Yet another example of cutting-edge science emerging from labs at the Animal Health unit is discovery of amino acetonitrile derivatives as the first potential new class of livestock parasiticides in 25 years. Resistance to existing classes of parasiticides is a growing international problem that potentially threatens the viability of livestock farming.

### **Building Brands**

While scientific innovation remains the foundation for success, the convergence of major industry trends today represents an inflection point in consumer health, says Thomas Ebeling, Head of the Consumer Health Division and member of the Executive Committee of Novartis. And this convergence creates massive opportunity for Novartis Consumer Health.

One key trend is privatization of healthcare as the public sector pushes more and more of the cost of care onto individuals. There is a shift away from visiting physicians for treatment of minor ailments like earache, for example. Nurse practitioners and pharmacists are taking a more active role in treating these minor ailments, Mr. Ebeling says.

Second, consumers today are becoming more aware and seek to take greater control of their health. It's clear that in the future there is going to be more self-choice about how people are medicated for non-acute conditions, Mr. Ebeling adds.

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Finally, consolidation among retailers is spawning regional and global giants that want to capture a greater share of healthcare dollars. The trend is clearest in the US, where companies such as Wal-Mart Stores Inc., Walgreen Co. and CVS Caremark Corp. are looking for new growth vehicles and see opportunities in healthcare.

Amid these trends, building and owning brands are increasingly important. Optimal sales-force execution is also critical to success. Along with global retailers, Novartis Consumer Health targets small business, from eye-care practitioners and veterinarians to small pharmacies. And even as globalization advances, Novartis also needs to help these smaller customers grow their businesses.

Two success stories from 2007 exemplify the brand-building capability of Novartis. *Lamisil Once*, a novel OTC product

that cures athlete's foot with a single application, is adding incremental value to the prescription-only formulation of *Lamisil*, a blockbuster medicine for treatment of toe-nail fungus. The typical consumer of athlete's-foot medication is an active male, around the age of 35, who wants immediate relief and doesn't want to apply medication two times a day, several days a week. *Lamisil Once* offers a novel administration, combining the active ingredient with a thin polymer that attaches to the skin and holds the active ingredient against the infected area without washing off.

We found a high degree of tryer/rejectors in the athlete's-foot category, Mr. Ebeling says. The efficacy of *Lamisil Once* is attracting back users who had dropped out of the category, driving a high rate of repeat purchases and providing incremental sales.

The success of *Voltaren* shows how compelling advertising can rejuvenate an established brand. Net sales of non-prescription *Voltaren* surged 16.2% last year, eclipsing low single-digit growth for the topical analgesic segment worldwide. The consumer insight driving *Voltaren* is that many people personalize pain because it prevents them from doing simple things they enjoy, for example, a grandmother picking up and playing with a two-year-old grandchild. An advertising campaign called *The Joy of Movement* portrays people enjoying those small but important activities, without pain, after using *Voltaren*.

#### **Salesforce Execution**

In recent years, Novartis Consumer Health has established key account teams to cater to large, sophisticated and demanding retailers such as Wal-Mart, Walgreens and CVS Caremark. By pooling efforts of Consumer Health business units and drawing on cross-functional capabilities, key-account teams generate synergies and additional sales. Aggressive expansion by customers is creating opportunities for continued growth for Consumer Health and potentially other Novartis divisions as well.

For example, Wal-Mart challenged pharmacy rival Walgreens by announcing plans to open as many as 400 in-store health clinics in the next two to three years, with prospects of reaching 2,000 clinics by 2012. The health clinics, which lease space in Wal-Mart stores, will be managed by local or regional hospitals or other organizations independent of Wal-Mart. The giant retailer has expanded rapidly from a pilot program launched in 2005, and more than 75 clinics are currently operating in 12 states across the US. The clinics are staffed by certified nurse practitioners or physicians, and offer preventive and routine care for ailments such as allergies and sinus conditions.

Walgreens, the largest drugstore chain in the US, responded by moving beyond its traditional pharmacy business to acquire Take Care Health Systems, a leading operator of convenient-care clinics. With the acquisition, Walgreens expects to have more than 400 convenient-care clinics in its stores nationwide by the end of 2008.

Take Care Health's clinics also are staffed by certified nurse practitioners who treat patients 18 months and older for common illnesses, including ear and sinus infections and strep throat. They also provide vaccinations and physical examinations.

Hoping to leverage existing relationships, the Consumer Health Division is developing product offerings tailored to the needs of new in-store clinics.

Meanwhile, expansion combined with an increasing focus on productivity of the sales force at the Animal Health Business Unit has accelerated sales growth to 12% between 2004 and 2007, from only 4% during the preceding four-year period, 1999 to 2003.

The additional muscle in key markets throughout the world has enabled Novartis Animal Health to deepen its business relationships with existing veterinary customers, while improving coverage of new customer groups.

One successful example is *CLiK*, a preventive treatment for Blowfly Strike. Novartis almost doubled its UK market share last year as the percentage of British sheep farms using *CLiK* surged to 43% from 26% a year earlier. The main attraction for new customers is the longer protection offered by *CLiK* compared to rival products.

The expanded sales force also propelled growth of more than 20% last year for *Atopica*, the only non-steroidal treatment available for atopic dermatitis in dogs. *Atopica* provides increased comfort for pets with reduced risk of complications associated with long-term use of steroids in dogs.





## CORPORATE CITIZENSHIP

### Introduction

Corporate Citizenship at Novartis rests on four pillars: Commitments to Patients, to People and Communities, to the Environment, and to Ethical Business Conduct

Treatments worth USD 937 million are contributed through access-to-medicine programs in 2007, reaching 66 million patients in need

During 2007, Novartis and partners complete clinical trials of a new pediatric formulation for the antimalarial medicine *Coartem*, enhancing convenience of use and palatability for young children who are especially vulnerable to this disease

Novartis issues guidelines on interactions with patient advocacy groups and makes public a list of patient groups given support in the United States and Europe, underscoring commitment to transparency

Diversity & Inclusion Advisory Council plays an active role in building diverse and talented teams, reinforcing the importance of an inclusive environment

External carbon-offset projects, launched in support of voluntary commitment to reduce greenhouse-gas emissions to Kyoto protocol levels, will be submitted for registration under the UN Clean Development Mechanism

Novartis again achieves top-level positions in influential rankings:

- A sustainability leader in 2007 Dow Jones Sustainability Index, which tracks the global economic, environmental and social performance of companies
- Fifth consecutive year in Science magazine list as one of the top ten employers in biotechnology, biopharmaceuticals and pharmaceuticals
- Again one of the world's 25 most respected companies in annual Barron's survey

- The top-ranked major pharmaceutical company in a survey of the World's Most Ethical Companies by Ethisphere magazine

## KEY PERFORMANCE INDICATORS

| Indicator (1)  | 2007      | 2006      | 2005      | 2004      | 2003     |
|--|-----------|-----------|-----------|-----------|----------|
| <b>Economic (2)</b>  |           |           |           |           |          |
| Net sales in USD billions  | 38.1      | 34.4      | 29.4      | 25.7      | 22.7     |
| Net income in USD billions (% of net sales)  | 6.5 (17)  | 6.8 (20)  | 5.8 (20)  | 5.4 (21)  | 4.7 (21) |
| Research and Development in USD billions (% of net sales)  | 6.4 (17)  | 5.3 (15)  | 4.8 (16)  | 4 (16)    | 3.6 (16) |
| Purchased goods and services (2), (3) in USD billions (% of net sales)                                 | 19.4 (51) | 15.8 (46) | 13.3 (45) | 11.2 (44) | 9.7 (43) |
| Personnel costs in USD billions (% of net sales)   | 9.9 (26)  | 8.7 (25)  | 7.5 (25)  | 6.5 (25)  | 5.9 (26) |
| Taxes in USD billions (% of income before taxes)   | 0.9 (13)  | 1.2 (15)  | 1.0 (14)  | 1.0 (16)  | 0.9 (16) |
| Dividends in USD billions (% of net income)  | 3.2 (49)  | 2.6 (38)  | 2.0 (35)  | 2.1 (39)  | 1.9 (40) |
| Cash returns to shareholders in USD billions (% of Group total net income)                             | 4.7 (39)  | 0 (0)     | 0.5 (8)   | 1.7 (32)  | 0.9 (20) |
| Share price at year-end (CHF)  | 62.10     | 70.25     | 69.05     | 57.30     | 56.15    |
| <b>Patients</b>  |           |           |           |           |          |
| Access to medicine (4): value in USD millions  | 937       | 755       | 696       | 570       | 371      |
| Access to medicine (4): number of patients reached   | 65.7      | 33.6      | 6.5       | 4.25      | 2.76     |
| <b>People and Communities</b>  |           |           |           |           |          |
| Number of full-time equivalent positions   | 98 200    | 100 735   | 90 924    | 81 392    | 78 541   |
| Resignations, separations, hiring (% of associates)  | 9, 4, 17  | 8, 4, 19  | 8, 4, 16  | 7, 3, 15  |          |
| Women in management (5) (% of management)  | 35        | 31        | 28        |           |          |
| Lost-time accident rate [accidents per 200 000 hours worked] (2)                                       | 0.41      | 0.45      | 0.51      | 0.47      | 0.73     |
| <b>Environment (2), (6)</b>  |           |           |           |           |          |
| Water use [million m3]   | 82.8      | 84.5      | 87.0      | 81.3      | 87.4     |
| Energy [million GJ]  | 16.4      | 16.4      | 15.3      | 13.8      | 13.5     |
| Emission CO <sub>2</sub> /GHG, Scope 1: Combustion and processes [1000 t]                              | 388       | 401       | 383       | 372       | 362      |
| Emission into Air: halogenated and nonhalogenated VOCs [t]   | 2 080     | 1 744     | 1 905     | 1 316     | 1 675    |
| Total Operational Waste [1000 t]   | 229       | 206       | 165       | 144       | 131      |
| <b>Ethical Business Conduct</b>  |           |           |           |           |          |
| Number of associates trained on Code of Conduct (7) (e-learning courses)                               | 16 697    | 14 574    | 33 000    |           |          |
| Managers completing certification on Code of Conduct   | 27 000    | 23 000    | 20 000    |           |          |
| Cases of misconduct reported   | 906       | 651       | 442(8)    | 410(9)    |          |
| Cases of misconduct substantiated  | 290       | 228       | 142(8)    | 204(9)    |          |
| Dismissals/resignations (related to misconduct)  | 168       | 130       | 78(8)     | 107(9)    |          |
| Number of suppliers  | 228 558   |           |           |           |          |
| Number of suppliers informed of Novartis Third Party Guidelines (Annual sales of more than USD 10 000) | 61 715    | 42 200    | 39 000    | 30 000    |          |
| Number of suppliers to confirm key standards (10) (self-declaration)                                   | 1 377     | 8 600     | 5 500     | 4 600     |          |

(1) Data reported in the Ethical Business Conduct (except Number of suppliers items) and Health, Safety and Environment sections (except Lost-time accident rate ) include the entire Group; Data reported in Number of suppliers items excludes the Vaccines and Diagnostics Division

All items relate to continuing operations excluding Consumer Health Division divestments unless stated otherwise

(2) As included in the Group's Value Added Statement

- (3) See table on page 76 (Access-to-medicine table)
- (4) Management defined locally
- (5) Details see: [www.novartis.com/hse](http://www.novartis.com/hse)
- (6) 2007 figure includes new associates and other associates not previously trained
- (7) From April to December 2005
- (8) From October 2003 to September 2004
- (9) In 2007 Novartis modified financial requirements for self-declarations by suppliers, focusing on suppliers with the highest business volumes and resulting in a significant decline in the number confirming key standards
- (10)



## **CORPORATE CITIZENSHIP**

Corporate Citizenship at Novartis begins with the success of our core business. During 2007, medicines and vaccines from Novartis were used to treat and protect more than 800 million people worldwide. Innovation is the key to our ability to change lives and we strive to maintain ethical corporate standards and do business in a manner that is responsible and sustainable.

Corporate Citizenship at Novartis begins with the success of our core business. The more successful we are in discovering, developing, manufacturing and marketing new medicines, the greater the benefits we can offer to patients, healthcare professionals, associates, shareholders and other key stakeholders.

Novartis provides a uniquely broad range of healthcare solutions that address the evolving needs of patients and societies worldwide. Our business portfolio includes innovative prescription medicines with improved efficacy and fewer side effects. Our vaccines and diagnostic tools offer protection against life-threatening diseases, including some newly emerging diseases that have triggered major international concern. Generic products that replace branded medicines after patent expiry free up funds for innovative medicines. And consumer health products, including OTC or self-medication brands, are readily available and enable healthy lifestyle choices.

During 2007, medicines and vaccines from Novartis were used to treat and protect more than 800 million people around the world, according to internal estimates. If all the patients reached by Novartis last year stood shoulder to shoulder, the line would circle the earth 10 times.

Medicine has made huge advances in recent decades due in large part to pharmaceuticals. Innovation is the key to this remarkable progress and scientists from Novartis have contributed breakthroughs that address unmet medical need and transform the lives of patients. These medicines include *Gleevec/Glivec*, the pioneering treatment for certain forms of cancer, and *Diovan*, the world's top-selling branded treatment for high blood pressure. To sustain that stellar record of innovation, Novartis invested USD 6.4 billion in research and development during 2007.

### **Adhering to Values**

At the same time, Novartis believes that companies contribute to the positive development of societies by doing business in a responsible way and supporting ethical values and principles. We strive to operate in a manner that is economically, socially and environmentally sustainable, and responsible toward stakeholders. We actively take on societal challenges in areas in which we are competent, helping where most needed while also establishing and implementing transparent ethical corporate standards and policies.

Novartis was one of the first pharmaceutical companies to sign the United Nations Global Compact. It is an initiative in which signatories embrace, support and implement, in their sphere of influence,



principles for responsible corporate conduct within the areas of human rights, labor standards, environmental care and efforts to combat corruption.

Novartis associates are expected to uphold the ideals and values defined in our Code of Conduct. If we don't have a set of values and live by them the Group won't be successful, says Daniel Vasella, M.D., Chairman and Chief Executive Officer of Novartis.

Our efforts have been recognized by external observers. Novartis was selected as one of the sustainability leaders in the 2007 Dow Jones Sustainability Index, (DJSI), a global index tracking economic, environmental and social performance of companies. We are pleased to see that the DJSI recognizes our responsible business approach and the increasing engagement of Novartis in the area of sustainability, says Thomas Wellauer, Ph.D., Head of Corporate Affairs and member of the Executive Committee of Novartis.

### **Framework of Corporate Citizenship**

Corporate Citizenship at Novartis is based on four pillars: Commitment to Patients, Commitment to People and Communities, Commitment to the Environment, and Commitment to Ethical Business Conduct.

Novartis associates strive to create value beyond business success in the world at large. When we operate in a way that is respectful of human rights, socially equitable and environmentally sustainable, we can better meet our economic responsibilities. Business success and social responsibility are mutually inclusive indeed, they depend on each other.

The hierarchy of corporate responsibilities at Novartis begins with essential, non-negotiable corporate duties: compliance with national laws and regulations, avoidance of deception or fraud, and protection of the environment and the health and safety of employees, customers and neighbors.

Enlightened companies have long recognized that acting in a responsible way means taking into account legitimacy as well as legality and sometimes doing more than the law requires. Legitimate corporate conduct is doing the right thing: for example, maintaining consistent global standards, regardless of legislation or regulation at the local level.

Finally, our hierarchy of corporate responsibilities includes philanthropy: pro bono research, community and neighborhood programs, volunteerism and donations.

We recognize that access to our medicines clearly favors people who live in affluent, developed societies. Millions of poor people are being left behind and diseases that are curable with modern medicines are still destroying lives. We want to be leaders and partners in finding and implementing solutions to help close the access gap.

To enhance access to treatment, Novartis has created innovative programs targeting diseases such as leprosy, malaria and tuberculosis, working with partners ranging from the World Health Organization to procurement agencies and nongovernmental organizations. In 2007, our access-to-medicine programs reached 65.7 million patients in need through contributions valued at USD 937 million.

### **Defending Innovation**

Novartis faces an increasingly complex map of external stakeholders today and expectations of those stakeholders can be contradictory. In making decisions about how we are going to navigate, I think it is extremely important to follow the direction shown by our own inner compass, Dr. Vasella says. In adhering to our values we should recognize that sometimes we have to make unpopular decisions.

One example during 2007 was a legal dispute in India about patent protection for *Gleevec/Glivec*, our pioneering anticancer medicine. In 2006 an Indian patent court rejected an application from Novartis seeking a patent for *Glivec*, which already had been granted patent protection by almost 40 countries. Novartis appealed the patent court's ruling and separately challenged the constitutionality of a controversial section of the 2005 Indian Patents Act.

In August of last year an Indian High Court dismissed the petition from Novartis, challenging the constitutionality of the country's new patent law, and deferred to the World Trade Organization (WTO) to resolve a question about compliance under the international Trade-Related Aspects of Intellectual Property Rights agreement. In a related proceeding, the Intellectual Property Appellate Board in India is now reviewing the *Glivec* patent appeal.

Protection of intellectual-property rights is essential to encourage research and development. Only with effective patent laws can Novartis continue to bring therapeutic improvements to patients that ultimately result in better care.

The journey of *Glivec* through India's patent process, however, underscores the potential uncertainties of a country in transition. In India, Novartis faces a globalization dilemma that characterizes many emerging economic powers: two markets in a single country. Novartis recognizes that poor patients in India face many obstacles to access to medical care. Through the *Glivec* International Patient Assistance Program (*GIPAP*), Novartis provides *Glivec* free to more than 99% of patients prescribed the life-saving medicine in India, because they would not otherwise be able to afford treatment. To date, more than 8 000 Indian patients diagnosed with chronic myeloid leukemia or gastrointestinal stromal tumors have participated in the *GIPAP* program.

At the same time, Novartis seeks business opportunities with affluent urban consumers and the burgeoning middle class in India's dynamic economy. International trade agreements offer both rights and responsibilities to member countries. Ensuring

effective protection for intellectual property is among these responsibilities.

### **Incremental Innovation**

In challenging a provision of India's new patent law, the primary objective for Novartis was to ensure protection for incremental innovation. Medical progress occurs through incremental innovation—innovation by steps—providing important value for patients in the form of enhanced efficacy or improved side-effect profiles.

One example is *Sandostatin LAR*, a Novartis medicine used to treat debilitating gastrointestinal tumors. Development of a long-acting formulation reduced the number of injections from more than a thousand per year to only 12, a huge benefit for patients. Development of *Exelon Patch*, the first and only transdermal treatment for Alzheimer's disease, has been shown to increase compliance, reduce side effects and allow medication to be delivered through the skin continuously for 24 hours, helping to achieve optimal dosing.

These types of advances are currently not acknowledged by India's patent law even though they meet WTO patentability standards and deliver significant value for patients. Novartis is concerned that hurdles to recognition of genuine innovation in the Indian patent law will hinder development of future medicines. We took on this case because we firmly believe it was the right thing to do for patients.

International nongovernmental organizations (NGOs), including Médecins sans Frontières and Oxfam, drew attention to the case by claiming that, if Novartis prevailed, India would no longer be able to supply much of the developing world with inexpensive medicines, including treatments for HIV/AIDS.

The basis of those arguments is false and misleading. Safeguards established under international-trade accords allow governments in developing countries to make exceptions to patent rights and to import pharmaceuticals produced under compulsory license in cases of a national emergency. Access to HIV/AIDS medications is not, and has never been, threatened by our case. Independent of the legal outcome, currently available generic drugs launched before 2005—including HIV/AIDS medicines and generic versions of *Glivec*—will continue to be available under a so-called grandfather clause in the Indian patent law.

We commend the progress India has made in recent years to advance intellectual-property rights. But more needs to be done to align this increasingly important industrial country with minimum international standards.

We are confident that dialogue about shortcomings in India's patent law will continue and ultimately lead to establishment of effective protection for incremental innovation. Novartis will continue to participate in this essential debate both in India and as it expands globally.

Despite the strident comments of some NGOs, I am convinced our efforts to gain clarity on India's commitment to meet minimum international intellectual-property standards will benefit India and its people, Dr. Vasella says. For a research-based company like Novartis, patents are non-negotiable.





**CORPORATE CITIZENSHIP: TARGETS AND RESULTS FOR 2007 AND TARGETS FOR 2008**

**UN Global Compact**

**Targets 2007**

Publish a case study about implementation of living wage-initiative at Novartis plus separate third-party supplier case study delayed in 2006. Continue active engagement in country networks. Start conceptual work on project about accountability of nongovernmental organizations (NGO).

**Results 2007**

Two case studies were published in 2007: Implementing the Living Wage Globally and Chain Reaction, the third-party supplier case. Both were communicated internally and externally. Novartis continued to participate in various Global Compact events, including those related to the still-emerging Swiss network. Two articles about the role of NGOs for the Global Compact's mission were published in academic journals.

**Targets 2008**

Publish a case study about Corporate Citizenship at Novartis. Continue to look for opportunities to support the United Nations Global Compact in shaping projects and opportunities for maximum impact.

**Respect for Human Rights**

**Targets 2007**

Evaluate pilot Human Rights Compliance Assessment and carry out compliance assessment in one new country. Participate in debate about corporate content of the Right to Health. Work closely with UN Representative on Business and Human Rights, as well as Special Rapporteur on the Right to Health.

**Results 2007**

Fulfilling the objective, the Human Rights Compliance Assessment was piloted in Taiwan in cooperation with the Danish Institute for Human Rights. Novartis Foundation for Sustainable Development co-hosted two conferences on business and human rights, one leading to the book Human Security & Business and the other providing state-of-the-art input to the work of the UN Representative on Business and Human Rights. Professor Klaus M. Leisinger was appointed a member of the Business and Human Rights Working Group of the Global Compact Board.

**Targets 2008**

Pilot a Human Rights Compliance Assessment in an additional country and develop a pharma-specific version of the assessment. Support the Business Leadership Initiative on Human Rights (BLIHR) in development of an online tool to help companies assess and address challenges related to human rights. Contribute to the new round of discussions about business and the right to health.

**Transparent Reporting**

**Targets 2007**

Achieve further progress in UN Global Compact reporting. Define structure and content of online Corporate Citizenship reporting. Publish Corporate Citizenship brochure.

**Results 2007**

The Global Compact Office recognized the Communication on Progress (CoP) for 2006 as a Notable CoP. A print version of Corporate Citizenship review was released in January 2007 and the online report, Citizenship@Novartis, launched in April 2007

**Targets 2008**

Release 2007 Communication on Progress. Continuously update Citizenship@Novartis.

**Government Relations/Lobbying**

**Targets 2007**

Establish integrated policy development across divisions. Improve professional, public-affairs skills through internal training.

**Results 2007**

Published Novartis perspective about key topics on Novartis.com to increase transparency. Integrated new Vaccines and Diagnostics Division into position development and yearly planning process. Conducted public-affairs training in all major regions. In 2007, Novartis spent USD 23 million in support of major international, American and European trade associations.

**Targets 2008**

Publish additional position papers about healthcare topics to maintain transparency with topics of interest to external stakeholders.

**Financial Community**

**Targets 2007**

**Results 2007**

**Targets 2008**

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Update online reporting using Global Reporting Initiative (GRI) format.

The online GRI report for 2006 was completed and received the in accordance check from the GRI.

Transition to the G3 Guidelines for the 2007 GRI report.





## COMMITMENT TO PATIENTS

Access to our medicines clearly favors people who live in affluent, developed societies. To help close that access gap, Novartis has developed programs to enhance access and affordability of treatments for diseases that are curable with modern medicines, but still continue to destroy lives. Responsibility must be shared, however, and each sphere of society has a role to play.

Novartis endorses the right to health. Our most important contribution to patients is providing medicines to treat and prevent disease, ease suffering and improve quality of life.

Discovery and development of new medicines at Novartis benefit from an ongoing dialogue with patient groups. Many of us engage with patients or patient advocacy groups, says Professor Mark Fishman, M.D., President of the Novartis Institutes for Biomedical Research (NIBR) and member of the Executive Committee of Novartis. And we bring in patient-advocacy groups as soon as we start thinking about a project.

Under the leadership of Dr. Fishman, NIBR often tests new medicines in genetically well-defined diseases to provide the initial readout on safety and efficacy. Often these diseases are rare: ACZ885, a monoclonal antibody targeting interleukin-1-beta, was first tested in patients with Muckle-Wells syndrome, an inflammatory disorder that affects only a few hundred patients worldwide. Following the successful proof-of-concept study, ACZ885 has progressed steadily to an advanced stage of clinical testing as a treatment for Muckle-Wells syndrome.

Last year ACZ885 was designated an orphan medicinal product by the European Commission. That is a status, reserved for medicines used to treat rare diseases, that entitles the manufacturer to a period of market exclusivity. In all, nine Novartis medicines have been designated orphan products in Europe in the past five years.

### **Affordability and Access**

Even the best medicines cannot help patients who do not adhere to treatment. According to a report by the World Health Organization, patient adherence to long-term therapy for chronic illnesses averages a mere 50% in developed countries and rates are even lower in developing countries. Non-adherence is a common problem in patients with high blood pressure; less than half of patients being treated take all of their prescribed medication.

Novartis has developed a broad array of programs aimed at enhancing affordability and access to treatment, as well as driving improved compliance.

In the US, more than 300 000 patients have enrolled in BP Success Zone, a patient-education program from Novartis to help people who have been prescribed *Diovan* reach the blood pressure goal set by their healthcare professional. The program includes a free-sample supply of *Diovan* plus a membership card good for discounts and other benefits. Novartis also offers to refund out-of-pocket costs for



patients who fail to control their blood pressure after taking the maximum recommended dose of *Diovan HCT* for at least 30 days.

In Brazil, Novartis has introduced a customer-service card known as Vale Mais Saude (VMS) that offers patients discounts on the price of Novartis medicines when they fill their prescriptions at selected pharmacies. The program also includes educational material and reminder calls to refill prescriptions. Currently, 40 000 physicians and more than 700 000 patients in Brazil are enrolled in the VMS program. Data collected to date indicate that people participating in the VMS program have an average duration of treatment more than double that of people not enrolled in the program.

Money-back guarantees as part of patient-support programs offer an incentive for patients who lack prescription-drug coverage or live in less-affluent countries that often require patients to pay for their own medicines. In the US, for example, Novartis introduced a patient starter kit for *Tyzeka*, a new treatment for hepatitis B infection. As part of the program, eligible self-paying patients who take *Tyzeka* for six consecutive months and have detectable virus in their blood at week 24 will be reimbursed for their entire out-of-pocket drug costs.

Moreover, the efficacy demonstrated in clinical studies of *Aclasta/Reclast*, along with the guaranteed compliance of once-yearly administration, has enabled Novartis to develop innovative pricing models for the medicine. A once-yearly infusion represents a challenge for payors because of the one-time cost of *Aclasta/Reclast*, compared to oral daily, weekly or monthly treatments.

In Germany, Novartis has agreed to refund medication costs to health insurers in cases of treatment failure within one year. The money-back guarantee has had an added benefit for Novartis, speeding reimbursement negotiations for *Aclasta/Reclast* with German authorities.

Novel commercial models are likely to become increasingly common amid intense pressure on pricing from governments, insurers and other healthcare payors. Payors obviously want fair value for their investment and if we offer them guaranteed value for their money, very often they will accept our prices, says Joseph Jimenez, Head of the Pharmaceuticals Division and member of the Executive Committee of Novartis.

I think you can offer an attractive proposition if you have differentiated products in a specialty category, he adds. We start to reflect on the payor's value proposition very early in our development process and the end point is reflected in our clinical and marketing plans. This will become an integral part of our marketing strategy.

### **Trusted Partner**

Interaction with patient groups provides an important opportunity for the exchange of balanced, accurate and easy-to-understand scientific information about diseases and available treatments, as well as healthcare policies that affect patients. Novartis believes that it is important for patients to be able to communicate their views clearly and to build effective relationships with diverse stakeholders in the pursuit of superior access to healthcare. Stable links with patient groups enable Novartis to understand more intimately the needs of patients and how to best address such needs.

Patient groups seek financial support from a wide variety of sources and this funding sustains important activities enhancing the well-being of many people living with serious or debilitating medical conditions. Yet there is increasing public scrutiny of funding from industry and questions about whether such payments might compromise the independence of patient groups that receive them.

Both industry and patient groups have taken steps in recent years to ensure that interactions are fully transparent. In 2006, Novartis issued guidelines for interactions with patient groups worldwide to ensure all projects comply with the groups' own by-laws and self-regulatory codes, as well as local laws and regulations.

Funding receives special attention in the new guidelines. Financial support from Novartis to a patient group must be in the form of a grant, donation, support of an educational program or other type of arm's-length arrangement. Funding must be clearly documented by way of written agreements that set forth in detail all the rights and obligations of both parties.

Activities should be mutually beneficial and fall within the objectives of both organizations. For the long term, Novartis must not provide the majority of financial contributions to a patient group. And the guidelines call for particular attention when Novartis provides the only available treatment option for a specific disease or condition.

During 2007, Novartis posted on the company website the names of US and European patient groups that receive financial support. The initiative was part of a pilot program for public reporting of interactions with patient groups; this initial list of US and European patient groups will be updated annually. In addition, individual Novartis country organizations can list on national websites the names of patient organizations they support. For competitive reasons, Novartis does not disclose the amounts given to patient groups.

One recent example of mutually beneficial advocacy was the first audit of diabetes prevalence, costs and policies across the 25 European Union member states published two years ago. The audit was commissioned by the Federation of European Nurses in Diabetes (FEND) and the European arm of the International Diabetes Federation (IDF Europe), with financial support from Novartis.

FEND is a professional organization that promotes the delivery of evidence-based





based care for people with diabetes throughout Europe. FEND also is an active advocacy group with the aim of influencing European healthcare policy relevant to diabetes care and research. IDF Europe is an affiliate of the umbrella organization that calls itself the only global advocate for people with diabetes and their healthcare providers. IDF encompasses almost 200 diabetes organizations in 150 countries.

The Diabetes EU 25 report provided empirical evidence that EU member states were not addressing the diabetes pandemic effectively. For example, only 11 of 25 member countries had a national framework or plan for diabetes in place. Moreover, the report underscored severe inequalities in standards of diabetes prevention, diagnosis and control across Europe, and concluded: Patients are suffering needlessly as a result.

The audit served as the basis for policy recommendations that FEND and IDF Europe presented at an EU healthcare summit held during the Austrian presidency. One compelling reason for member-state governments to take action, according to FEND and IDF Europe, was to contain the threat of a dramatic rise in costs of diabetes from an estimated 50 billion euros per year at that time. Sharing best practices could help reduce inequalities across the EU 25, the report asserted. The Austrian EU Presidency went on to declare type 2 diabetes a key health priority and call for urgent targeted action to address growing incidence and prevalence of the disease, as well as the rapid rise in direct and indirect costs of diabetes across the EU. FEND and IDF Europe had an opportunity to raise the profile of diabetes further at a similar health summit focusing on chronic diseases in July 2007, under the Portuguese EU Presidency.

The EU 25 audit was a unique study of the status of diabetes in national health plans at that time. It highlighted those countries that have national plans and are implementing them, but also encouraged those countries that have not yet addressed diabetes as a priority to do so, says Anne-Marie Felton, President of FEND and a key architect of the audit. It isn't sufficient to just have national plans. They have to be implemented and mechanisms to monitor implementation are another integral part of any national plan, Ms. Felton adds.

The audit provided FEND and IDF Europe, as advocacy organizations, with a means of holding Ministries of Health and politicians to account in their decision-making and ensuring that diabetes remains a priority.

Importantly, the audit will be repeated during 2008 within the current 27 member states, as well as aspiring countries that plan to apply for EU membership. Underscoring its continued commitment to diabetes, Novartis will also be a major sponsor of the 2008 audit by providing an unrestricted educational grant. Our hope is that this will become an ongoing and dynamic document, Ms. Felton says.

There are still major gaps in data related to diabetes across the EU. From the audit, we saw an interesting discrepancy in data from different entities within the same country, she adds. And one by-product is that governments are more willing to talk to patient organizations today, and wish to appear in a better light in future audits.

Like representatives from other advocacy organizations, Ms. Felton welcomes clearer rules of engagement in interaction with Novartis. It's a delicate area because, on the one hand, none of us can do this on our own and we regard the pharmaceutical industry as a key stakeholder in prevention of diabetes and the fight against the complications of diabetes. But as an organization, FEND must be extremely careful to maintain our credibility and independence, and not fall within the control of industry.

**Closing the Access Gap**

Major initiatives by Novartis target neglected diseases, ranging from malaria and leprosy to drug-resistant tuberculosis (TB). We provide medicine at no profit, or sometimes free, to patients in the developing world. We also offer discounts and support programs to patients in industrialized countries without medical insurance or other financial resources.

Since the year 2000, Novartis has provided free treatment for all leprosy patients worldwide in a pioneering collaboration with the WHO. In another partnership, with the WHO and the United Nations Children's Fund, Novartis is providing the pioneering antimalarial medicine Coartem on a non-profit basis for public-sector use in developing countries.

Through the WHO, Novartis is providing fixed-combination tablets to treat 500 000 tuberculosis patients in the world's poorest countries with Directly Observed Therapy Short-Course, or DOTS. The DOTS approach requires TB patients to swallow their medicines in the presence of a health worker or community volunteer. The spread of drug-resistant TB is one of the world's most pressing public-health challenges and DOTS has emerged as the most effective form of treatment.

In addition to donations, Novartis is helping poor patients in the tropics benefit from the revolution in biomedical science and technology that underpins the Group's commercial research.

The Novartis Institute for Tropical Diseases (NITD) was founded in 2002 as a state-of-the-art research facility focusing on scourges such as dengue fever and drug-resistant tuberculosis that take a daunting toll among patients in the developing world. Any therapies discovered at NITD will be made available to poor patients without profit.

The Singapore-based research center was envisaged as a scientific catalyst, rejuvenating interest in neglected tropical disorders while at the same time transplanting the special skills needed to translate basic science into actual drugs.

Dengue fever and drug-resistant TB were chosen as the initial targets for research at NITD after discussions with physicians, public-health officials and industry experts underscored the urgency of scientific advances in treatment of those diseases. When we selected the first diseases for research, we wanted to choose disease areas where there was clear unmet medical need and insufficient resources allocated, says Professor Paul Herrling, Ph.D., Chairman of NITD and Head of Corporate Research at Novartis.

That urgency also was reflected in the challenging objectives Prof. Herrling set for drug-discovery programs. By the end of 2008, NITD expects that at least two new compounds discovered at the institute will begin clinical testing.

NITD expanded its research operations to include malaria in 2006 under a five-year, USD 20 million collaboration funded by the Wellcome Trust, the Singapore Economic Development Board and Medicines for Malaria Venture (MMV). The malaria project has two unprecedented objectives: development of a single-dose cure for *Plasmodium falciparum*, the most dangerous form of malaria, as well as a curative modality for *Plasmodium vivax*, the most frequent and widely distributed form of malaria.

### **Eliminating Leprosy**

The 17th International Leprosy Congress in Hyderabad, India, will be a landmark in the battle against neglected diseases. As a result of decades of concerted international action, the burden of leprosy has been greatly reduced, and Novartis, through the efforts of the Novartis Foundation for Sustainable Development, has been at the forefront of this public-health breakthrough.

The face of leprosy has changed dramatically thanks to the development of multi-drug therapy (MDT), a curative treatment, and its increasing availability to patients free of charge. Two of the three drugs used in multi-drug therapy, the treatment recommended by the WHO, were developed in the research laboratories of Novartis.

The commitment by the Novartis Foundation to provide MDT free of charge was made at a critical juncture in the effort to eliminate leprosy. Availability of free treatment is the cornerstone of the leprosy-elimination strategy and MDT donations by the Novartis Foundation have led to the cure of about 4.5 million patients so far, according to WHO estimates.

In 2005, Novartis decided to extend the MDT donation for an additional five-year period, until the end of 2010. Adequate supplies of free, high-quality MDT will help to ensure that the remaining endemic countries reach the elimination target and that other countries sustain the impressive progress made so far. Continued availability of MDT will be crucial in maintaining high coverage of leprosy services in the coming years to interrupt transmission of the disease.

As well as introducing the concept of social marketing to leprosy treatment – using marketing techniques to enhance social ends – the Novartis Foundation has made a significant contribution to simplifying the provision of disability-prevention services in communities. Many of the approaches devised under the Foundation's Comprehensive Leprosy Care Project in India have now been incorporated into the disability-care packages of both the government and NGOs.

Support from Novartis and its Foundation has helped change the face of leprosy, from one of disfigurement and despair to the promise of cure, says Margaret Chan, M.D., Director General of the WHO.

The development of high-quality drugs, and the decision to make these drugs

available at no cost, are a model of corporate social responsibility. At least 4 million leprosy patients can thank this Foundation for their cure, and their freedom to live a normal and productive life. This is proof of the gains for sustainable development as we move toward a world that knows this ancient disease no more.

### **Battling Malaria**

For almost a decade, Novartis has led a revolution in the treatment of malaria. The main battleground is Africa, where malaria kills more than a million people every year, mainly pregnant women and children younger than five years of age.

Malaria is more than an ordinary disease on this continent, says the Honorable Richard Nduhura, Uganda's Minister of State for Health. It has major implications on all essential aspects of our life, as individuals, as families, as communities and as a nation.

When Novartis joined the fight against malaria during the late 1990s, Africa was on the brink of a public-health disaster. Malaria parasites had developed resistance to the older antimalarial drugs, such as chloroquine, on which African countries relied for decades.

Working with partners in China, Novartis developed *Coartem*, the first of a new class of antimalarial medicines known as artemisinin-based combination therapy, or ACT. *Coartem* included a component used for centuries in traditional Chinese medicine to treat fever. A second antimalarial compound, working through a different mechanism of action, acts synergistically to eliminate remaining parasites that might have survived the initial assault.

To ensure broad access to *Coartem*, Novartis forged a partnership with the WHO to provide *Coartem* at no profit for use by public-health systems in developing countries. The exceptional efficacy of *Coartem*, combined with availability of international donor financing through the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria, pushed demand for the new drug higher than anyone could have imagined.

### **NOVARTIS ACCESS-TO-MEDICINE PROJECTS 2007**

| <b>Project</b>                                     | <b>Objective</b>  | <b>Target region</b>        | <b>Value<br/>(USD millions)</b> | <b>Patients</b> |
|--|---|-----------------------------|---------------------------------|-----------------|
| Malaria/WHO (1)                                    | Provide <i>Coartem</i> at cost for public sector use  | Africa, Asia, Latin America | 190                             | 64 800 000      |
| Leprosy/WHO (2)                                    | Eliminate leprosy by providing free medications to all patients worldwide with WHO, through 2010                      | Global                      | 6                               | 244 000         |
| Tuberculosis (2)                                   | Donation of fixed-dose combinations   | Tanzania, Sri Lanka         | 3                               | 112 000         |
| Novartis Foundation for Sustainable Development(3) | Improve health and quality of life of poor people in developing countries through Think Tank, policy and project work | Developing countries        | 8                               | 390 000         |
|  |   | Developing countries        | 12                              |                 |

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|  |   |                       |            |                     |
|--|---|-----------------------|------------|---------------------|
| Novartis Institute for Tropical Diseases (NITD)(3)                 | Discover novel treatments and prevention methods for major tropical diseases; NITD discoveries to be available in poor endemic countries without profit |                       |            |                     |
| Patient Assistance Programs (PAP); excl. <i>Gleevec/Glivec</i> (2) | Assistance to patients experiencing financial hardship, without third-party insurance coverage for their medicines                                      | US                    | 113        | 106 000             |
| <i>Gleevec</i> US PAP (2)  | Within capability of Novartis, continue to ensure access for patients in the US who cannot afford the drug  | US                    | 56         | 3 000               |
| <i>Glivec</i> Global PAP (2), (4)                                  | Within capability of Novartis, continue to ensure access for patients outside the US who cannot afford the drug   | Global (excluding US) | 534        | 20 000              |
| Together Rx Access   | Discount program for the uninsured  | US                    | 1          | 12 000              |
| Emergency relief & other product donations                         | Support to humanitarian organizations   | Global                | 14         |                     |
| <b>Total</b>   |   |                       | <b>937</b> | <b>65.7 million</b> |

(1) During 2007, 64.8 million *Coartem* treatments reached patients based on a preliminary analysis of local distribution; Of these, 29 million treatments came from shipments completed in 2006, and 35.8 million from the total shipment of 66 million completed in 2007. The Value of the *Coartem* program in 2007 was calculated using the number of treatments shipped and the ex-factory price of *Coartem* to private-sector purchasers in malaria-endemic developing countries, minus payments to Novartis to cover costs under terms of the public-private partnership with WHO. These payments were received through WHO, UNICEF and other procurement agencies, acting on behalf of governments and other public sector institutions in developing countries eligible to receive *Coartem* at the not-for-profit price.

(2) Ex-factory price to private market

(3) Operating costs

(4) Inclusive Shared Contribution Model as described on page 77

During 2007, 66 million treatment courses of *Coartem* were delivered to more than 30 countries across Africa. About 70% of treatments delivered were for children who account for the vast majority of deaths from malaria.

Cumulative deliveries of *Coartem* under the not-for-profit partnership with the WHO reached 142 million treatments, helping to save an estimated 450 000 lives. Production capacity for *Coartem* if orders are placed in a timely manner is currently 100 million treatments per annum.

The Novartis Foundation has agreed to donate *Coartem* in support of the Millennium Villages Project, an initiative aiming to help impoverished communities in rural Africa achieve the United Nations Millennium Development Goals and halve poverty by 2015. Along with *Coartem* donations, the Foundation is providing financial support to Ilongangulu village in Tanzania for a transition from subsistence farming to self-sustaining commercial activity.

With some of the most populous countries in Africa now rolling out *Coartem*, malaria experts are upbeat about the potential impact on public health. We have the opportunity to use *Coartem* as an entry point for making the whole government healthcare sector work better, not only by managing sick patients, but also by streamlining distribution and maintaining supplies of drugs to ensure effective treatment at remote healthcare facilities, says Robert W. Snow, Professor of Tropical Public Health at the University of Oxford and one of the world's leading authorities on malaria.

During 2007, Novartis and partners completed clinical testing of a new dispersible formulation of *Coartem*, aiming to increase convenience of administration and improve palatability for young children. Dispersing *Coartem* in milk or water to drink promises to make dosing more reliable than the current practice of crushing adult tablets for use by children. And a new cherry flavor developed for the dispersible formulation masks the bitter taste that *Coartem* has in common with most other artemisinin-based antimalarial medicines.

#### **Gleevec/Glivec Patient Assistance Programs**

For the breakthrough anticancer therapy *Gleevec/Glivec*, Novartis maintains one of the most comprehensive patient-assistance programs yet implemented on a global scale in the field of cancer to help people who otherwise would not be able to afford treatment.

The *Glivec* International Patient Assistance Program (*GIPAP*) provides free *Gleevec/Glivec* as well as additional support to eligible patients in developing countries with minimal reimbursement capabilities. A separate patient-assistance program gives *Gleevec/Glivec* to patients in need in the US and Canada.

Eligible patients must be properly diagnosed with chronic myeloid leukemia (CML) or gastrointestinal stromal tumor (GIST); lack coverage by reimbursement or insurance; and have no other financial resources. *GIPAP* also provides information and referral assistance to patients, members of their families and caregivers.

*GIPAP* works through a global network of more than 900 qualified physicians. To date, more than 27 000 patients in more than 80 countries have received free treatment through *GIPAP*.

To ensure independence in evaluation and approval of eligible patients, the Max Foundation, a non-profit organization based in Seattle, Washington, serves as the main partner in the administration of *GIPAP*. In countries in which Novartis Oncology has no local representation, Novartis partners with Axios International, a consulting firm, to administer the *GIPAP* program.

Unlike traditional donation programs, *GIPAP* is based on a patient-direct model, facilitating delivery of *Gleevec/Glivec* to patients by their treating physician. Novartis has continued to explore new ways to maximize *Glivec* access by designing models built on public-private partnerships in which Novartis enlists governments and other third parties, including payors, as partners. Under shared-contribution models, Novartis is no longer the sole provider of therapy through a donation; rather, national healthcare systems or other payors assume portions of the cost of *Glivec* treatment.

**COMMITMENT TO PATIENTS: TARGETS AND RESULTS FOR 2007 AND TARGETS FOR 2008**

**Stakeholder Engagement**

**Targets 2007**

Increase transparency in collaborations with patient-advocacy groups. Expand systematic stakeholder-engagement process.

**Results 2007**

Implemented new Novartis guidelines for interactions with patient groups. Continued training of business teams about how to work with patient groups, using patient-group leaders as coaches. Published names of all patient groups supported by Novartis in Europe and the United States on Novartis.com.

**Targets 2008**

Embed concept of consulting with key patient groups in the development and marketing cycles of major brands and therapy areas. Increase involvement of Novartis in civil-society debate about access to medicines.

**Access to medicine**

**Targets 2007**

Expand partnerships for *Coartem* distribution beyond World Health Organization. Establish research collaboration in malaria with Wellcome Trust.

**Results 2007**

Proportion of *Coartem* sales supplied through alternative providers such as UNICEF, Crown Agents, Mission Pharma, Médecins Sans Frontières and direct deliveries to countries increased to 51% in 2007. Following a grant from the Wellcome Trust, Medicines for Malaria Venture and Singapore Economic Development Board, an NITD-led consortium initiated research to deliver lead compounds for a one-dose cure for *Plasmodium falciparum* and a curative modality for *Plasmodium vivax*.

**Targets 2008**

Launch pediatric dispersible formulation of *Coartem*. Facilitate data collection and publication of studies showing health impact of *Coartem* use.

**Novartis Institute for Tropical Diseases  
(New target)**

**Targets 2007**

**Results 2007**

**Targets 2008**

Fully consolidate Institute's new ventures Eijkman Institute; Hasanuddin University Clinical Research Institute (NEHCRI); and malaria research while continuing the build-up of the pipeline in dengue fever, tuberculosis and malaria. Maintain vigorous teaching and training activity, as well as high international scientific presence in tropical diseases research and development.









## **COMMITMENT TO PEOPLE AND COMMUNITIES**

Novartis endeavors to promote the livelihoods of our associates and to be a good neighbor in the communities where we operate. Through our commitment to Diversity and Inclusion, we foster equality of opportunity, fairness and mutual respect. Global surveys last year underscored the high level of engagement among Novartis managers and associates worldwide.

Novartis has a profound impact on the lives of more than 98 000 associates from diverse cultural backgrounds, as well as their families and the communities in which they live.

Through our commitment to Diversity and Inclusion (D&I), we foster equality of opportunity, fairness and mutual respect. As a responsible and fair employer, Novartis is committed to paying living wages to all associates. We promote health and safety to protect associates and contractors against hazards, and provide our people with voluntary programs to maintain and improve their health.

### **Feedback from Associates**

In March 2007, more than 40 000 associates in the Pharmaceuticals Division took part in a global survey that posed questions about how they perceive the company.

An exceptionally high response rate of 83% provided a solid foundation of data and underscored the high level of employee engagement around the globe. The survey showed that associates have a very favorable overall image of the company. Novartis ranked better than, or equal to, pharmaceutical industry benchmarks in 13 out of 15 categories.

This is a milestone in terms of developing a better understanding of ourselves and how we compare with other pharmaceutical companies, says Neil Anthony, Global Head Human Resources for the Pharmaceuticals Division. It also gives us hard data that can be used as an internal benchmark to track progress in our efforts to evolve our corporate culture.

The survey underscored five areas of particular strength at Novartis: clarity of strategic direction, performance focus, confidence in senior leadership and effective immediate managers, training and career development opportunities, and the Corporate Citizenship program.

Results of the Pharmaceuticals Division's survey were mirrored by a parallel Global Leadership Survey of the top 400 managers across the Novartis Group that has been conducted every other year since 1999. The response rate for the 2007 Leadership Survey was 82%, matching the best participation to date.

Of senior managers polled, 95% said they believe the values and behaviors of the company are clear and 97% believe that Novartis operates with integrity in its external dealings. In addition, 94% answered that they have a clear understanding of the goals and objectives of the company

as a whole while 92% feel that the organization treats associates with respect, regardless of their jobs. In these areas, Novartis ranks considerably above an external benchmark of senior leaders of 142 leading multinational companies in various industries.

Results among senior Novartis managers also surpassed the benchmark in attitudes toward personal engagement and empowerment, with 86% of respondents saying they can challenge the usual way of doing things. The survey showed an overall 77% satisfaction with the performance-management system, well ahead of the norm and an improvement from the most recent Global Leadership Survey in 2005.

Strong leaders are a key success factor for Novartis, says Juergen Brokatzky-Geiger, Ph.D., Head of Human Resources and member of the Executive Committee of Novartis. They are the role models for our people and drive change.

### **Diversity and Inclusion**

In both the Global Leadership Survey and the Pharmaceuticals Division Employee Survey, diversity and inclusion received high marks, significantly above the external benchmarks. Novartis has set targets for continuing to build a highly diverse and talented workforce that represents and understands the needs of its diverse patients and customers. To support this objective, Novartis has created a Diversity and Inclusion Advisory Council (DIAC), comprising 10 members drawn from

different countries, ethnic backgrounds and walks of life. DIAC members share a strong commitment and passion for diversity and inclusion in business, as well as all aspects of daily life.

I have participated in meetings of the DIAC and I am very impressed by the quality and experience of this council, says Daniel Vasella, M.D., Chairman and Chief Executive Officer of Novartis. These are people who are all knowledgeable and very engaged in this field.

The DIAC members include:

- Yasmin Alibhai-Brown, a journalist, author and television broadcaster born in Uganda and today a naturalized British citizen and resident of the UK
- Kurt April, Professor at the Graduate School of Business at the University of Cape Town, South Africa, where he lectures and researches in the fields of leadership, diversity and inclusion
- Juergen Brokatzky-Geiger, Head of Human Resources at Novartis and member of the Executive Committee of Novartis
- Ted Childs, former Vice President, Global Workforce Diversity at International Business Machines Corp., where he had worldwide responsibility for diversity programs and practices
- Ingrid Duplain, former Secretary to the Board of Directors of Novartis AG
- Manisha Girotra, Managing Director and Chair, India, for the Union Bank of Switzerland
- Sir Nicholas Scheele, former President and Chief Operating Officer for Ford Motor Co. and Chancellor, University of Warwick (UK)
- David Thomas (Chair), the H. Naylor Fitzhugh Professor of Business Administration at Harvard Graduate School of Business Administration, where he also holds the posts of Senior Associate Dean and Director of Faculty Recruiting
- Lan Yang, co-founder of Sun Media, one of China's most prominent private media groups, and a leading television anchor and broadcaster in China

- Barbara W.K. Yee, Professor and Chair of the Department of Family and Consumer Science, College of Tropical Agriculture and Human Resources at the University of Hawaii at Manoa (See DIAC group photograph on page 84 and photo caption on page 254.)

The DIAC acts as an independent body of experts who advise Novartis Group companies on issues related to diversity and inclusion and best practices. The strategic aim of the council is to help Novartis strengthen its competitive advantage by being more adaptive, inclusive and creative in meeting the needs of patients, employees and other stakeholders. The DIAC seeks to increase awareness of, and sensitivity to, diversity while focusing on business success. In addition, it helps to identify challenges, barriers and opportunities in the advancement of diversity and inclusion at Novartis.

In addition to that strategic role, DIAC members play an active part in internal programs at Novartis. DIAC meetings offer the opportunity for associates to listen and interact with DIAC members through open-dialogue sessions.

To date, several thousand Novartis associates around the world have attended customized diversity and inclusion training to support their personal development. Diversity and inclusion champions have been appointed for country organizations and business units.

While the Pharmaceuticals Division has been a driving force in raising awareness of diversity and inclusion at Novartis, the Group also stepped up activity in other divisions and business units during 2007, according to Dr. Brokatzky-Geiger. We have put networks in place to drive initiatives based on business needs in all divisions, he says. This is a crucial initiative for talent attraction and for mirroring the outside world within our global company.

### Community Partnership Day

More than 9 500 Novartis associates in more than 20 countries participated in the 11th annual Community Partnership Day on April 26, 2007. Novartis organizes Community Partnership Day to commemorate creation of the company in its present form in 1996. Associates engage in volunteer activities to benefit their local communities.

It is an event that serves as a reminder of the values established at the creation of

### FLUCTUATIONS 2007

|   |                |             |
|---|----------------|-------------|
| <b>Associates as of January 1, 2007</b> | <b>100 735</b> | <b>100%</b> |
| Separations                             | -3 934         | -4          |
| Retirements                             | -781           | -1          |
| Resignations                            | -8 674         | -9          |
| External hirings                        | 17 348         | 17          |
| Effect of divestments/acquisitions, net | -6 494         | -6          |



Novartis and illustrates the commitments of associates to improving access to medicines, conducting business with integrity, protecting the environment and caring for the communities in which we live and work, Dr. Vasella says.

In Italy, the motto for Community Partnership Day 2007 was "No one excluded." Associates visited inmates at a prison near Milan, Italy, to demonstrate their commitment to overcome barriers and combat social exclusion.

In Thailand, Novartis associates focused on activities at a local temple, cleaning the temple yard, donating rabies vaccinations and using a Novartis Animal Health product to kill flies. In Bangladesh, associates continued a long-standing support program for a local school for under-privileged children.

In Venezuela, volunteer activities included maintaining emergency rooms in two public hospitals and reconditioning an orphanage. In the US, associates supported local non-profit organizations and assembled backpacks with school supplies for children infected with HIV/AIDS. Other associates collected coats for homeless people and business attire for low-income women seeking to re-enter the workforce.

## **Biocamp**

The Novartis Biotechnology Leadership Camp - or Biocamp - is an increasingly popular initiative that gives talented students an opportunity to learn about career opportunities in the pharmaceutical and biotechnology industries, providing a point of reference in career planning. The initial Biocamp was held in Taiwan in 2004 and last year the program was expanded to Europe as well.

In August, a three-day European Biocamp at Novartis headquarters in Basel, Switzerland, attracted 40 participants. Half were from Switzerland and the remainder from eight other European countries, including the UK, Sweden, Turkey, Poland and Russia. "As a highly innovative company, we believe that research and know-how play an important part in the future success of Switzerland. It is important to attract the interest of promising young talents and show them career prospects in industry," says Michael Pluess, Head Novartis Switzerland.

In October, 42 young researchers from 15 Asian and European countries assembled in Tokyo for the 2007 International Biocamp. Jointly hosted by the Japanese unit of Novartis and the Novartis Foundation Japan for the Promotion of Science, the three-day program included lectures by Professor H. Robert Horvitz of Massachusetts Institute of Technology, the 2002 Nobel laureate in Medicine, and other scientific luminaries.

Biocamp is open to university students in the natural sciences and business administration. Selection is based on the academic records of applicants as well as a motivation letter each applicant submits. While recruiting is not the primary purpose of Biocamp, there have been cases in which outstanding students have had the possibility of internships or job placements with Novartis.

## **Health and Safety of Associates**

Ensuring a safe and healthy workplace for our associates is key to the success of Novartis. Rigorous technical standards are supplemented with regular training programs. Novartis encourages a positive, caring and cooperative working atmosphere and we regard the safety of all our associates as a priority that requires continuous attention.

During 2007, the lost-time accident rate for continuing operations declined to 0.41 per 200 000 hours worked from 0.45 the previous year. Underscoring the Group-wide emphasis on safety, 29 Novartis sites have had no accidents with lost time during four consecutive years. Associates at these sites have developed and fostered an excellent culture, demonstrating that our ultimate goal of zero accidents can become a reality for the entire Group.

Continuous improvement has been achieved through safety-awareness programs and actions implemented as a result of systematic investigations following accidents. Comprehensive follow-up of accidents has helped to reinforce the strong focus on safety throughout the Group.

There were no work related fatalities of Novartis associates in 2007.

**ASSOCIATES BY REGION AND DIVISION AS OF DECEMBER 31, 2007 (1)**

|                          | US            | Canada and<br>Latin America | Europe        | Africa/Asia/<br>Australia | Total         |
|--------------------------|---------------|-----------------------------|---------------|---------------------------|---------------|
| Pharmaceuticals          | 14 364        | 4 632                       | 24 811        | 10 806                    | 54 613        |
| Vaccines and Diagnostics | 1 021         | 6                           | 3 572         | 211                       | 4 810         |
| Sandoz                   | 1 368         | 2 532                       | 14 848        | 4 339                     | 23 087        |
| Consumer Health          | 4 299         | 1 562                       | 4 858         | 3 237                     | 13 956        |
| Corporate                | 679           | 32                          | 851           | 172                       | 1 734         |
| <b>Total</b>             | <b>21 731</b> | <b>8 764</b>                | <b>48 940</b> | <b>18 765</b>             | <b>98 200</b> |

(1) Full time equivalent positions





**COMMITMENT TO PEOPLE AND COMMUNITIES: TARGETS AND RESULTS FOR 2007 AND TARGETS FOR 2008**

**Living Wages**

**Targets 2007**

Salaries of 21 associates to be increased in early 2007 as adjustment to Living Wage level of respective locations.

**Results 2007**

Salaries of 21 associates were adjusted to meet Living Wage levels in respective locations.

**Targets 2008**

Continue to use established process for periodic updates of living-wage levels and adjustment of salaries of associates that are below those levels.

**Global Employee Survey**

**Targets 2007**

Design and conduct annual employee climate survey for Novartis associates in all divisions.

**Results 2007**

Completed Global Leadership Survey across divisions. Completed annual survey for all Pharmaceuticals Division associates.

**Targets 2008**

Plan an aligned approach for the Novartis Global Leadership survey and annual employee climate survey to allow synchronized implementation in 2009.

**Diversity & Inclusion**

**Targets 2007**

Provide a systematic framework for Diversity & Inclusion. Define priorities, goals and actions for each division.

**Results 2007**

Established vision and strategy for Diversity & Inclusion and drafted business case for Group. Designed and implemented Diversity & Inclusion framework for Novartis. Each division has defined priorities, goals and actions, according to business needs.

**Targets 2008**

Continue to use the DIAC (external Diversity & Inclusion Advisory Council) as implementation aid. Continue divisional and functional implementation, according to business needs.

**Lost-Time Accident Rate(1) (LTAR)**

**Targets 2007**

Reduce to 0.42 by 2007

**Results 2007**

LTAR declined to 0.41.

**Targets 2008**

In 2008, the Lost-Time Accident Rate will be replaced by the Lost-Time Injury and Illness Rate (LTIR), a measure of employment-related injuries and illnesses with lost time per 200 000 hours worked. The objective for 2008 is to reduce LTIR to 0.39.

(1) Accidents per 200 000 hours worked





## COMMITMENT TO THE ENVIRONMENT

Three years ago, Novartis made a voluntary commitment to reduce on-site emissions of greenhouse gases (GHG) to the level prescribed in the Kyoto protocol. So far, improvements in energy efficiency and reduction of GHG emissions have exceeded expectations. Along with internal initiatives, Novartis is taking advantage of carbon offset options to achieve the emission-reduction target by 2012.

Sandoz, the generics Division of Novartis, is one of the world's leading manufacturers of bulk antibiotics and filtration of culture broths piles up tons of biomass waste every month at fermentation plants in Germany, Austria and India.

Waste mycelium, the branching filaments in a fungus that account for most excess biomass, was traditionally dried and distributed for use as fertilizer. But recycled mycelium is also an ideal raw material for biogas, a source of renewable energy.

So the Sandoz plant in Frankfurt, Germany, pumps waste mycelium to a nearby site-service provider that generates biogas from the wastewater sludge. That biogas is then used to generate heat and steam in a combined heat and power plant, improving energy efficiency and saving 7 000 tons of annual emissions of greenhouse gases (GHG). Following that example, Sandoz facilities in Mahad, India, and Kundl, Austria, are planning their own programs to recycle mycelium waste.

In recent years, dozens of energy-efficiency projects have been launched at Novartis under a Group-wide campaign. For the period 2004-2006, Novartis set a target of improving energy efficiency by 2% per year, based on the Group's 2003 performance. By 2006, energy efficiency had improved by 15%, exceeding the original objective and a new target was established calling for a further 10% improvement by 2010. Preliminary figures for 2007 show a robust 9% gain in energy efficiency versus 2006.

In 2005, Novartis made a voluntary commitment to reduce on-site GHG emissions from combustion and processes for the period 2008-2012 to the level prescribed in the Kyoto protocol, i.e. 5% below the 1990 level. That commitment strongly correlates with the targets that already had been set for energy efficiency.

Moreover, in 2006 Novartis set a target to reduce CO<sub>2</sub> emissions from the vehicle fleet owned or leased by the company, another key source of GHG emissions. The Group plans to trim CO<sub>2</sub> emissions from vehicles at least 10% by 2010 through the introduction of hybrid gasoline/electric cars in the US and increased use of diesel engines fitted with particulate filters in Europe.

### **Targets and Incentives**

The energy-efficiency program incorporates a balance of targets and incentives to build pride in achieving challenging objectives, as well as maintain the commitment of associates at a high level. Increasingly, divisions and business units are appointing energy managers and energy advisors for their worldwide operations. Energy management



tools and dedicated training programs are applied systematically, together with continuous monitoring of targets and performance.

Annual Energy Excellence Awards recognize outstanding examples of energy management and reductions of GHG emissions across the Novartis Group. Even more important, the awards underscore that energy efficiency is good business.

The 46 projects submitted for the 2007 Energy Excellence Award program will provide USD 40 million in net savings during the next five years. That figure is equivalent to 3% of projected worldwide energy costs at Novartis in the same period.

More than a third of the projects have a payback time of less than one year and more than half will repay their initial investment within three years. The majority of projects allows savings in the use of electricity or other purchased energy but 10 projects also help reduce use of fossil fuels for on-site energy generation.

Compared to 2006, Novartis used less energy and reduced CO<sub>2</sub> emissions for the first time, says Keith Saveal, Head of Corporate Health, Safety and Environment at Novartis. Given the growth in the business, this is a truly sustainable performance reflecting cumulative effects of the energy-efficiency program to date. It confirms that we are on the right track.

Reductions in GHG emissions also reflect increased use of renewable energy. Along with adoption of biofuels and organic-waste fuels, solar energy is being implemented in a number of energy-efficiency projects within Novartis. Bagasse, a sugar cane-based residue, is used for process steam generation in India. In another example, a wood-chip heating installation has been approved for a factory in Germany.

At the Rosia, Italy, production site of the Vaccines and Diagnostics Division, an ongoing energy-reduction program includes installation of photovoltaic and thermal solar panels on the roofs of existing buildings. With projected capacity of 300 Kilowatts, the solar panels will cover about 1% of the site's total electricity consumption.

### **Carbon-Offset Projects**

The challenging commitments to energy efficiency and reduction of GHG emissions set Novartis apart from many competitors. Less than a third of the world's 500 largest companies by market capitalization have established a GHG emissions program with targets.

By the time Novartis announced its intention to lower GHG emissions in line with the Kyoto Protocol, strong net sales growth had pushed energy consumption well above the 1990 benchmark level. And projections for sustained net sales growth through 2012 indicate that GHG emissions must shrink by about 100 000 tons of CO<sub>2</sub> each year to achieve the target. During 2007, Group-wide GHG emissions totaled 388 000 tons.

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While the long-term goal is to lower GHG emissions through internal programs, additional measures will be needed to achieve the 2012 target. The Kyoto protocol includes carbon-offset options such as the United Nations Clean Development Mechanism that enable companies or countries to compensate for exceeding emission limits through offsetting investments, particularly in developing countries or emerging markets. Novartis has so far embarked on two external carbon-offset projects designed to fulfill requirements of the UN Clean Development Mechanism.

Land has been purchased in Latin America for afforestation of pasture land to sequester carbon. Plantations were started during 2007 and so far 785 hectares have been planted with approximately 600 000 saplings. Ultimately, the goal is to establish

a sustainable forest with 75% local species. Certification by the Forest Stewardship Council is expected, and Novartis plans to register the project under the Clean Development Mechanism.

The second carbon-offset project is a jatropha plantation in Africa. Jatropha is a plant that can be used as a raw material for production of biofuel as well as electrical power. In a pilot phase, 350 hectares of jatropha have been planted at three locations. The jatropha plantation will also be submitted for registration under the UN Clean Development Mechanism.

Land-use carbon-offset projects have been relatively uncommon to date. But they are attractive to Novartis as platforms that can foster long-term economic growth for the local population, while also helping to meet the Group's CO<sub>2</sub> reduction target.

### **Building Energy Efficiency from the Outset**

To hold GHG emissions in check, Novartis applies a proactive policy for capital investments associated with energy conservation. Pay-back periods up to the lifetime of the asset are allowed for projects that save energy. And for all investments or asset acquisitions exceeding CHF 20 000, a review of energy-usage implications by an energy expert is mandatory.

We are still identifying low-hanging fruit, Mr. Saveal says. There is potential to improve energy efficiency at existing facilities, as well as in planning of new capital projects.

New projects are a major focus because it is more effective to build in energy efficiency from the beginning than to revamp an existing system. For example, equipment installed at the headquarters buildings of the Novartis Institutes for Biomedical Research in Cambridge, Massachusetts, save GHG emissions of more than 3 000 tons of CO<sub>2</sub> annually.

Combined heat and power plants (CHP) have become another key option as Novartis strives toward more efficient energy production and use. By generating electricity on site where it is needed, CHP facilities help avoid transmission losses experienced by the distribution of electricity generated at power plants.

And by being close to the consumer, CHP facilities can also put heat to work that otherwise would be wasted. Overall efficiency of a CHP installation is about double that of a conventional plant and carbon savings of up to 45% can be achieved by operating a CHP plant rather than by separate heat and electricity supply.

An additional CHP plant began operations early last year at a new Novartis facility in Singapore, providing almost half the heat and electricity used by the site. By contrast, the Novartis production site in Ringaskiddy, Ireland, conducted a feasibility study but decided against construction of a CHP plant because there was insufficient demand for steam that would have been generated onsite.

**Minimizing Environmental Impacts**

**Greenhouse-Gas Emissions**

In terms of CO<sub>2</sub> emissions from on-site-generated energy and purchased energy, 2007 was a sustainable year for Novartis.

Scope 1 emissions, which include combustion and manufacturing processes, declined to 388 000 tons in 2007 from 401 000 tons a year earlier. Scope 2 emissions, from purchased energy, fell to 866 000 tons from 873 000 tons the previous year.

Because of a substantial expansion of the Novartis vehicle fleet during 2007, emissions from vehicles edged up slightly, to 186 000 tons from 180 000 tons a year earlier. Nevertheless, Novartis still expects to achieve its target of reducing vehicle emissions by 10% in 2010, from the level in 2005.

**GHG EMISSIONS 2003-2007 VERSUS TARGET PATH TO 2012**  
**(Continuing Operations)**  
(in kilotons CO<sub>2</sub>)

**Air Emissions**

Volatile organic compounds (VOCs) are precursors for photochemical (tropospheric) ozone creation that leads in turn to smog and related detrimental effects on health and the environment. Halogenated VOCs can also contribute to the greenhouse effect.

Novartis emphasizes reductions in VOC emissions in operations worldwide and targets have been set for both halogenated and non-halogenated VOC emissions for the period 2005-08.

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Novartis achieved a further reduction in emissions of halogenated volatile organic compounds in 2007 to 156 tons, beating the interim target of 160 tons set for that year. Due to significant lead times required to change production processes, however, the target of 30 tons originally set for 2008 is now seen as too ambitious. Halogenated VOC emissions are expected to remain unchanged during 2008 but Novartis is

## NOVARTIS HEALTH, SAFETY AND ENVIRONMENT DATA 2007

|  | Group (1) |      | Pharmaceuticals |      | Research (2) |      | Vaccines and<br>Diagnostics |      | Sandoz |      | Consumer<br>Health* |      |
|--|-----------|------|-----------------|------|--------------|------|-----------------------------|------|--------|------|---------------------|------|
|  | 2007      | 2006 | 2007            | 2006 | 2007         | 2006 | 2007                        | 2006 | 2007   | 2006 | 2007                | 2006 |
| Associates   |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| HSE Personnel  |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| [number of associates working at least 50% for HSE]  | 501       | 509  | 217             | 210  | 23           | 24   | 39                          | 42   | 157    | 162  | 65                  | 71   |
| Health/safety  |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Lost-time accident rate                              |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| [accidents per 200000 hours worked]                  | 0.41      | 0.45 | 0.44            | 0.43 | 0.13         | 0.21 | 0.73                        | 0.94 | 0.53   | 0.66 | 0.23                | 0.23 |
| Production   |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Total production [1000 t = metric tons]              | 169       | 168  | 26              | 23   | 0            | 0    | 0.4                         | 0.4  | 90     | 97   | 52                  | 47   |
| Resources  |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Water use [million m3]                               | 82.8      | 84.5 | 21.2            | 19.6 | 1.1          | 1.2  | 1.1                         | 0.8  | 56.7   | 60.5 | 2.6                 | 2.4  |
| Energy use [million GJ]                              | 16.4      | 16.4 | 5.4             | 5.2  | 1.0          | 1.0  | 1.2                         | 1.2  | 7.3    | 7.6  | 1.5                 | 1.4  |
| Emissions into water                                 |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Effluent discharge [million m3]                      | 15.5      | 14.5 | 4.1             | 3.8  | 0.4          | 0.4  | 1.1                         | 0.3  | 8.1    | 8.5  | 1.8                 | 1.5  |
| Chemical oxygen demand COD [1000 t]                  | 3.98      | 3.80 | 0.95            | 0.75 | 0            | 0    | 0                           | 0    | 2.83   | 2.78 | 0.20                | 0.27 |
| Emissions into air                                   |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Sulfur dioxide, SO2 [t]                              | 59        | 130  | 5               | 10   | 0            | 0    | 0                           | 0    | 52     | 118  | 1                   | 2    |
| Nitrogen oxide NO2 [t]                               | 330       | 334  | 136             | 135  | 9            | 8    | 17                          | 21   | 147    | 139  | 22                  | 31   |
| Volatile organic compounds (VOC) halogenated [t]     | 156       | 161  | 12              | 6    | 0            | 0    | 0                           | 0    | 144    | 154  | 0                   | 0    |
| Volatile organic compounds (VOC) non-halogenated [t] | 1925      | 1583 | 474             | 430  | 1            | 1    | 6                           | 10   | 1378   | 1086 | 66                  | 55   |
| Emissions CO2 / GHG                                  |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Scope 1, Combustion and process [1000 t]             | 388       | 401  | 149             | 146  | 12           | 11   | 27                          | 30   | 177    | 190  | 24                  | 24   |
| Scope 1, Vehicles [1000 t]                           | 186       | 180  | 133             | 129  | 0            | 0    | 1                           | 1    | 30     | 27   | 18                  | 18   |
| Scope 2, From purchased energy [1000 t]              | 866       | 873  | 202             | 222  | 66           | 64   | 73                          | 55   | 371    | 389  | 153                 | 144  |
| Waste  |           |      |                 |      |              |      |                             |      |        |      |                     |      |
| Non-hazardous operational waste [1000 t]             | 70        | 69   | 17.5            | 21.5 | 2.5          | 2.4  | 20.2                        | 16.8 | 18.8   | 17.8 | 10.9                | 10.2 |
| Hazardous operational waste [1000 t]                 | 159       | 137  | 99.0            | 83.2 | 0.9          | 0.8  | 0.7                         | 0.9  | 56.6   | 49.6 | 2.3                 | 2.4  |
| Debris, non-hazardous [1000 t]                       | 109       | 119  | 83              | 93   | 0.1          | 1.8  | 2.6                         | 4.5  | 23.3   | 20.0 | 0.4                 | 0.3  |
| Debris, hazardous [1000 t]                           | 18.8      | 17.0 | 18.6            | 16.7 | 0            | 0    | 0.19                        | 0.11 | 0.02   | 0.12 | 0                   | 0    |
| Hazardous operational waste landfilled [1000 t]      | 0.10      | 0.52 | 0.01            | 0    | 0            | 0    | 0.02                        | 0.05 | 0.07   | 0.46 | 0                   | 0    |

(1) HSE data for Novartis Group and Consumer Health reflect continuing operations in 2006 and 2007 (excluding Medical Nutrition and Gerber, which were divested during 2007).

(2) Research data includes NIBR and Corporate Research

## The Reporting Process

The HSE Data Management System and data collection process are key elements of Corporate Citizenship Management at Novartis. The data describes our major material flows across company boundaries and environmental impacts originating from our own operations (Scope 1), as well as greenhouse gas emissions (GHG) from the generation of purchased energy (Scope 2). We do not monitor environmental impacts from the manufacture and delivery of purchased goods and services, nor the use of resources and other related emissions for activities outside company boundaries (Scope 3), such as GHG emissions from transportation by third parties.

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HSE data is collected and reviewed on a quarterly basis. The 2007 environmental and resource data published in the Annual Report and on our website are actual data for the period from January through September and best estimates for the period October through December, which will be updated with actual data in the first quarter of 2008. Significant deviations will be reported on our website and restated in next year's Annual Report. The Employees and Health/Safety data are actual from January through December 2007.

committed to further reductions once process improvements become feasible in future years.

Emissions of non-halogenated VOCs increased during 2007, to 1 925 tons from 1 583 tons a year earlier. The increase resulted from a substantial expansion of production processes requiring solvents. Still, a reduction of 13% in emissions of non-halogenated VOCs is targeted for 2008 and additional abatement measures will be implemented in coming years.

## **Water**

With water becoming an increasingly precious commodity in many parts of the world, Novartis has set a medium-term target of increasing efficiency of water usage by 10% between 2005 and 2010. Results during the first two years of that period show a 25% improvement in efficiency, well beyond the target established.

## **Hazardous Waste to Landfills/Responsibility for Historical Landfills**

The amount of hazardous waste disposed in landfills has been effectively minimized in recent years, from more than 6 000 tons in 2003. During 2007, the amount of hazardous operational waste disposed in landfills declined to 99 tons, from 520 tons the previous year. It is expected that in coming years virtually no hazardous waste will be disposed in landfills.

Separately, as a legacy of chemical operations of predecessor companies, Novartis shares a number of confirmed or potential environmental liabilities from contaminated sites and landfills that were created in various countries. During 2007, Novartis increased its provisions, excluding current liabilities, for worldwide environmental liabilities by USD 614 million following a review completed in 2007. This increase in corporate provisions includes the creation of a Swiss foundation to finance the Novartis-related share of any potential remediation costs for landfills in the Basel region (including Switzerland, France and Germany). Assessments are expected to be completed shortly in coordination with various governments that are responsible for the supervision and decision-making process for any remediation actions. This new foundation underscores the commitment of Novartis to sustainable and appropriate solutions.

## **Risk Management**

The Novartis risk management process is designed to identify potential hazards and take action to reduce the risk of an event to an acceptable minimum level. Significant progress was made in 2007, as half of the risks could be removed from the 2006 Group Risk Portfolio.

Regular HSE audits are conducted to provide direct support and guidance to Novartis sites to identify and reduce or eliminate risks. Divisions control the implementation of the determined measures, which are also reviewed at a corporate level.

In terms of Business Continuity Management, Novartis prepares response plans for various incidents that could interrupt the supply of products to patients and customers. Necessary actions as well as resources needed are defined to enable the organization to manage all potential interruptions identified. Novartis utilizes multi-disciplinary teams to perform thorough process-risk analyses. This systematic approach is embedded in our management systems to ensure that risks are identified and remedial measures implemented to reduce risks to an acceptable level.

**Fines and compliance**

Minor violations, do occur from time to time. During 2007, Novartis paid a total of USD 10546 in fines for minor HSE violations at a number of sites.

**HSE Reporting Principles**

**Global Reporting Initiative**

Since 2004, Novartis has reported its HSE performance following the Guidelines for Sustainability Reporting of the Global Reporting Initiative (GRI). The Novartis GRI Report Index along with a more detailed overview of our HSE performance is available at: [www.novartis.com](http://www.novartis.com)

**Reporting Entity**

HSE performance data for 2007 were collected from the 196 reporting units of the continuing operations around the world, owned and managed by Novartis Group companies. This covers all sites with relevant HSE impacts, including all production, formulation and research and development sites as well as major headquarter offices. Hexal and Eon Labs, which were acquired in 2005, are now fully integrated in the Sandoz Division for all performance management indicators. The former Chiron sites, which were consolidated by Novartis under the new Vaccines and Diagnostics Division in 2006, are now also fully integrated in the Novartis HSE reporting process.

**Reporting Scope**

Novartis believes the performance data presented in this Annual Report and on the Novartis website represent a fair and balanced picture of the Novartis HSE performance. Performance Indicators follow GRI requirements for core environmental and social indicators.

**ENERGY AND EMISSIONS IMPROVEMENTS: TARGETS AND RESULTS FOR 2007 AND TARGETS FOR 2008****Energy-efficiency improvement**

| <b>Targets 2007</b>                 | <b>Results 2007</b> | <b>Targets 2008</b>                 |
|-------------------------------------|---------------------|-------------------------------------|
| 10% by end 2010, based on 2006 data | 9% improvement      | 10% by end 2010, based on 2006 data |

**Contact water-efficiency improvement**

| <b>Targets 2007</b>                  | <b>Results 2007</b> | <b>Targets 2008</b>                  |
|--------------------------------------|---------------------|--------------------------------------|
| 10% by end 2010, based on 2005 level | 25% improvement     | 10% by end 2010, based on 2005 level |

**VOC emissions (halogenated)**

| <b>Targets 2007</b>        | <b>Results 2007</b> | <b>Targets 2008</b>              |
|----------------------------|---------------------|----------------------------------|
| Reduce to 160 tons by 2007 | 156 tons            | Maintain 2007 target of 160 tons |

**VOC emissions (non-halogenated)**

| <b>Targets 2007</b>        | <b>Results 2007</b> | <b>Targets 2008</b>            |
|----------------------------|---------------------|--------------------------------|
| Reduce to 850 tons by 2007 | 1925 tons           | Decrease to 1677 tons by 2008. |

**CO2 from vehicles**

| <b>Targets 2007</b>                              | <b>Results 2007</b> | <b>Targets 2008</b>                           |
|--|---------------------|---|
| Decrease of 10% by end 2010, based on 2005 level | 186 kilotons        | Decrease 10% by end 2010, based on 2005 level |

**Scope 1 GHG emissions from operations**

| <b>Targets 2007</b>              | <b>Results 2007</b> | <b>Targets 2008</b>                       |
|----------------------------------|---------------------|---|
| 5% below 1990 level by 2008-2012 | 388 kilotons        | Decrease 5% below 1990 level by 2008-2012 |

**Hazardous waste to landfill**

| <b>Targets 2007</b>        | <b>Results 2007</b> | <b>Targets 2008</b>           |
|----------------------------|---------------------|-------------------------------|
| Reduce to 500 tons by 2007 | 99 tons             | Decrease to zero tons by 2008 |



## **COMMITMENT TO ETHICAL BUSINESS CONDUCT**

Novartis strives to maintain an open culture in which business activities are conducted with integrity in line with company values, standards and applicable laws. Our Integrity and Compliance program has evolved systematically during recent years to enhance support for managers worldwide and establish, promote and enforce standards of integrity and responsible decision-making.

In 2007, Novartis established a new Corporate Integrity and Compliance Department, reporting directly to Thomas Wellauer Ph.D., Head of Corporate Affairs and member of the Executive Committee of Novartis. Conducting business with integrity is not only the right thing to do but also drives performance by building a culture of integrity, managing risks, strengthening our reputation and fostering competitive advantage. In 2007, Novartis was ranked by Ethisphere Magazine as the top major pharmaceutical company in the World's Most Ethical Companies survey.

The new department has developed and implemented a values-based Integrity and Compliance Program, supporting efforts by Novartis managers to establish, promote and enforce a culture of integrity. It goes beyond traditional compliance programs which rely on standards, awareness training, monitoring and auditing by also focusing on leadership, incentives, skills training and decision-making in order to foster responsible business conduct and innovation. In implementing this program, Novartis managers around the world are supported by 205 part-time and full-time Integrity and Compliance Officers in 98 country organizations. During 2007, the Vaccines & Diagnostics Division established an Integrity and Compliance function, with four professionals.

### **Establishing Integrity Standards**

Over the years and with the acquisition of new entities, the number of internal policies and standards has naturally increased. A Policy Management Project was initiated in 2007 to ensure that our standards are clear and consistent, and provide adequate guidance to all associates.

A simplified framework of standards was also developed. We have seen documents just adding up without being reviewed regularly to ensure that everything new made sense and was consistent with our values and principles of business conduct, says Dan Ostergaard, Head of Integrity and Compliance at Novartis. We need to ensure that our business-conduct standards support our associates and help them to make good decisions.

### **Promoting Adherence**

Novartis leaders have to take responsibility for Integrity and Compliance and demonstrate an appropriate tone. Therefore, business targets related to integrity form part of the annual objectives of senior management in country organizations.

Adherence to Novartis values and integrity standards forms an explicit part of terms of employment for 97% of our associates. In annual performance appraisals,



all employees are assessed not only on whether they achieve their business objectives, but also on the extent to which they do so by adhering to company values.

In 2007, Corporate Integrity and Compliance conducted three two-day regional workshops around the world with participation by more than 85 Integrity and Compliance Officers from the respective regions. The aim of these workshops is to share knowledge and to train Integrity and Compliance Officers through case studies to manage conflicts of interest and advise management about implementation of the Integrity and Compliance program.

Training related to our standards and relevant laws is mandatory for all associates, including members of the Executive Committee and the Board of Directors. E-learning courses in 14 languages were launched last year, covering topics from data protection and records management to insider trading and compliance with sales and marketing codes.

A total of 202 100 courses were completed globally, representing 151 575 hours of training. As of 2007, 94% of all associates had been trained on the Code of Conduct and 90% on Corporate Citizenship through the e-learning program.

New associates at Novartis receive training on the Code of Conduct shortly after joining the company. During 2007, 85% of new associates worldwide completed this training.

We focus increasingly on skills training as well as awareness, Mr. Ostergaard says. Managers make decisions everyday, sometimes based on unclear facts. They are under pressure and they may find that local culture or competitors standards are different, or even in direct conflict, with Novartis values. We must continue to develop managers skills to deal with difficult dilemmas and, to that end, legal and ethical dimensions are an integral part of leadership-training programs at Novartis.

### **Enforcing Standards**

Ensuring effective implementation of our integrity standards is essential to sustain responsible business conduct. In all country organizations, processes are in place to manage certain risk areas and ensure that potential conflicts of interest as well as promotional activities are in line with Novartis standards and applicable laws.

Each year, Novartis managers confirm their understanding and adherence to the Code of Conduct and business-conduct standards. In 2007, confirmation was received from more than 27 000 Novartis managers. To evaluate implementation of our Integrity and Compliance Program, we developed a web-based monitoring tool that has been completed by 129 organizational units.

The Executive Committee of Novartis as well as local management teams worldwide are regularly updated about program activities, including training activities and cases of misconduct. This information is compiled into an annual report submitted to the Audit and Compliance Committee of the Board of Directors. Along with key achievements and challenges, this report addresses the implementation and effectiveness of our Integrity and Compliance Program.

There are occasions when our internal standards are disregarded and, as a result, our associates, our customers, our business and our reputation may suffer. Novartis associates are obliged to report actual or suspected incidents under a policy that guarantees non-retaliation and protection of identity when a person makes a report and during any subsequent action.

In 2005, the Business Practices Office (BPO), was created to consolidate responsibility for receiving reports and determining appropriate responses to the information received. All complaints are investigated and substantiated cases are referred to senior management for appropriate disciplinary action. To help associates report allegations of misconduct, Integrity Telephone Lines have been introduced in 70 countries, providing the option of reporting allegations in 51 languages. Confidential messages can be left for the BPO which endeavors to respond within 72 hours.

The BPO report for 2007 underscores the impact of that improved reporting infrastructure. The addition of permanent staff in Europe and North America has also enhanced the capability of the BPO to handle complaints from both Novartis associates and third parties.

During 2007, the BPO received 906 complaints. To date, 436 of the complaints reported last year have been fully investigated and 290 complaints fully or partly substantiated. Employment contracts of 168 associates were discontinued last year while 92 warning letters were issued and appropriate training undertaken to improve behavior.

Working with the Corporate Integrity and Compliance Department, the BPO conducts systematic reviews of relevant cases to ensure training programs address relevant trends and forms of misconduct identified by complaint investigations. Despite a rise in terminations last year, the rate of 9.0 reports of alleged misconduct per 1 000 associates at Novartis has increased as the program becomes embedded and compares favorably with benchmarks for the retail and financial-services industries, which receive, respectively, 12 and 14.5 misconduct reports per 1 000 employees.

The commitment to ethical business conduct at Novartis is enhanced as the BPO builds support among associates by conducting centralized, consistent and confidential investigations of complaints. In one example last year, a junior financial clerk in a European country alerted the BPO to the alleged failure of a manager to follow correct financial-reporting processes. The clerk was threatened with termination by the manager due to the report but

the BPO's investigation substantiated the complaint, corrected the financial reporting process, and the manager was terminated as a consequence of the threats directed against the junior employee.

### **Supply-Chain Initiatives**

Novartis is a global company with operations in more than 140 countries and a network of more than 230 000 suppliers. Contributions of suppliers and other service providers are vital to our success.

In recent years, Novartis and other leading companies have placed increasing emphasis on implementing responsible business behaviors and practices across the supply chain, and establishing internationally recognized standards for working conditions, purchasing and contracting out operations to third parties. Raising ethical business standards throughout our sphere of influence is a core aim of our commitment to the UN Global Compact.

In 2003, Novartis issued a Third-Party Code of Conduct as well as an internal guideline for Third-Party Management, describing how suppliers and service providers are to be selected and monitored. The aim of the Third-Party Management guideline is to establish standards of business conduct, as set out in the Global Compact, to create better social, economic and environmental outcomes for all parties involved. To achieve these goals, Novartis gives preference to suppliers and service providers that share these values, and expects them to comply with minimum requirements concerning human rights, fair working conditions, efforts to combat corruption and protection of health, safety and the environment.

Because Novartis operates all over the world, we are faced with differences in legal, social and cultural environments. Many of our business partners apply standards different from our own, Dr. Wellauer says. We expect business partners to adhere to all national and other applicable laws and regulations governing protection of the environment, occupational health and safety, and labor and employment practices wherever we do business. Beyond that, we work with our business partners toward achieving responsible business behaviors on a long-term and sustainable basis.

During 2007, Novartis joined with other major pharmaceutical companies to develop a common framework for Third-Party Management called the Pharmaceutical Supply Chain Initiative (PSCI). The PSCI outlines principles for responsible business practices in the fields of ethics, labor, environment, health-and-safety and related management systems. Companies supporting the PSCI will integrate and apply the principles within their own supplier programs, making it easier for suppliers to focus on a common set of standards.

**COMMITMENT TO RESPONSIBLE BUSINESS CONDUCT: TARGETS AND RESULTS FOR 2007 AND TARGETS FOR 2008**

**Management Framework**

**Targets 2007**

Revise Code of Conduct and policy framework for Corporate Citizenship. Integrate new Vaccines and Diagnostics Division into Corporate Citizenship (CC) management processes.

**Results 2007**

Draft of new Code of Conduct and policy framework developed. Vaccines and Diagnostics Division integrated into CC management process. Established new Corporate Integrity and Compliance function. Developed new Integrity and Compliance Program and tool for monitoring.

**Targets 2008**

Implementation of new policy framework. Implementation of new Integrity and Compliance Program

**Code of Conduct**

**Targets 2007**

Develop two new e-training courses. Improve face-to-face training program. Launch training for new managers.

**Results 2007**

Two courses developed. Started to integrate Code of Conduct topics into management training. Ready to launch training for new managers in Novartis Consumer Health Division.

**Targets 2008**

Divisions and Corporate to implement two new e- learning courses with 90% completion. Further expand e-training to include refresher courses in addition to new courses. Develop skills training on Code of Conduct topics and integrate into management development program.

**Fair Marketing Practices**

**Targets 2007**

Complete training of sales force at Sandoz. Ensure consistency with new IFPMA code in relevant businesses. Launch new guidance on grants in Pharmaceuticals Division.

**Results 2007**

Relevant associates in Sandoz sales force trained. Consistency ensured in relevant businesses. Guidance related to grants launched in Pharmaceuticals Division and relevant groups of associates trained.

**Targets 2008**

Corporate Citizenship Guideline 3 to be revised. Train relevant Pharma associates on revised promotional practice code.

**Third-Party Management**

**Targets 2007**

Targets for Class 3 and Class 2 suppliers unchanged. Improve internal processes to increase percentage of audits/self assessments completed. Implement corrective actions based on audit findings.

**Results 2007**

96 Class 3 third parties underwent site audits. No major issues were found from the audits. 135 Class 2 third-party questionnaires were received and assessed. Published internal training material in six different languages and conducted training workshops in eight countries on four continents with more than 350 associates participating.

**Targets 2008**

Audit additional 250 third parties. Screen and assess additional 500 questionnaires from Class 2 third-party suppliers. Conduct training programs to further raise awareness within the company.

**Product Stewardship**

**Targets 2007**

Develop key performance indicators for implementation of Product Stewardship board decisions. Implement real-time tracking tool for implementation and reporting. Improve alignment between divisions.

**Results 2007**

Key performance indicators and tracking tool developed and implemented by Pharmaceuticals Division. Product Stewardship efforts of divisions supported by new Product Stewardship Officer. Product Stewardship fully integrated into Enterprise Risk Management.

**Targets 2008**

Continue support of anticipatory Product Stewardship.

**Animal Welfare (New Target)**

**Targets 2007**

**Results 2007**

**Targets 2008**

Integrate Novartis Vaccines Institute for Global Health and NIBR Shanghai site into Novartis Animal Welfare organization. Audit third-party facilities in countries with no, or

weak, animal welfare legislation.



**INDEPENDENT ASSURANCE REPORT ON THE NOVARTIS GROUP CORPORATE CITIZENSHIP REPORTING**

To the Audit and Compliance Committee of Novartis AG, Basel: We have performed evidence-gathering procedures to provide limited assurance on the following aspects of Corporate Citizenship (CC) and Health, Safety and Environment (HSE) reporting of Novartis AG, Basel and its consolidated subsidiaries (the Group), all for the year ended December 31, 2007 (hereafter jointly referred to as the subject matter):

- The management and reporting processes for CC across the Group, and the related 2007 CC key performance indicators on page 61 of the Novartis Annual Report (the Annual Report);
- The Novartis access-to-medicine projects 2007 figures on page 76 of the Annual Report;
- The management and reporting processes for HSE across the Group, and the related HSE key figures Novartis Health, Safety and Environment Data 2007 on page 92 of the Annual Report.

We have evaluated the subject matter against the following criteria: the CC Policy including the CC Guidelines and the Code of Conduct prepared by the Group, the CC and the compliance Annual Reporting guidance and the principles summarized in the section HSE Reporting Principles on page 93 of the Annual Report. The accuracy and completeness of CC and HSE indicators are subject to inherent limitations given their nature and methods for determining, calculating or estimating such data. Our Assurance Report should therefore be read in connection with Novartis AG, Basel's internal guidelines, definitions and procedures established to prepare and report on its CC and HSE performance.

The Board of Directors of Novartis AG, Basel is responsible for both the subject matter and the evaluation criteria.

Our responsibility is to provide a conclusion on the subject matter based on our evidence-gathering procedures in accordance with the International Standard on Assurance Engagements (ISAE) 3000 Assurance Engagements other than Audits or Reviews of Historical Information, approved December 2003 by the International Auditing and Assurance Standards Board (IAASB).

We planned and performed our evidence-gathering procedures to obtain a basis for our conclusions in accordance with an ISAE 3000 limited assurance engagement. The evidence gathering procedures are more limited than for a reasonable assurance engagement. We have not performed an audit according to International Standards on Auditing. Accordingly, we do not express such an audit opinion.

Our evidence-gathering procedures included the following work:

- Assessing how Novartis AG, Basel staff apply the internal criteria as mentioned before;
- Interviewing personnel responsible for HSE and CC management and reporting including Integrity & Compliance framework and Human Resources CC reporting at Group level and in the different headquarters where our visits took place;
-

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Visiting the Animal Health, Pharmaceuticals, Sandoz and Vaccines & Diagnostics global headquarters, selected country and business unit headquarters and specific sites in Austria, Germany, Italy, Japan, Slovenia, Switzerland, and the United States;

- Performing tests on a sample basis of evidence supporting selected HSE parameters (for lost-time accident rate, hazardous wastes, water use, energy efficiency and CO2 emission) with regard to the reported data aggregation from the selected sites to Group level; and
- Reading and performing tests on a sample basis of the relevant documentation including Group policies, management and reporting structures, documentation and systems in place to collect, analyze and aggregate key figures reported for CC, HSE and access-to-medicine.

Based on our work described and the criteria detailed in this Assurance Report, nothing has come to our attention that causes us to believe that management assertions on the subject matter defined above are materially misstated. Additionally, nothing has come to our attention that causes us to believe that the management and reporting processes as defined under subject matter above are not functioning as designed, in all material respects.

From our work, we have provided the following recommendations to the management, which have been agreed:

- Ensure that the CC governance structure will be strengthened in 2008, in particular with respect to CC strategy and implementation and that the results of the CC strategy review will be considered in the future business direction of Novartis.
- Corporate HSE culture has been adopted smoothly by organizational units which joined Novartis relatively recently (e.g. Chiron, Hexal), although all sites should further improve accuracy of health related figures by following the defined requirements.

PricewaterhouseCoopers AG

Dr. Thomas Scheiwiller  
Basel, January 16, 2008

Thomas Frei





Corporate Governance

COMMITMENT TO CORPORATE GOVERNANCE

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## **CORPORATE GOVERNANCE AT NOVARTIS**

Novartis is fully committed to good corporate governance.

### **Introduction**

The corporate governance framework of Novartis determines the management structure, organization and processes within the Group. Its purpose is to support the creation of sustainable long-term value for shareholders, aiming to foster controlled and transparent entrepreneurship, align the interests of Novartis managers and shareholders and allow for efficient decision-making focused on the Group's long-term success.

### **Standards Applicable to Novartis**

#### **Laws and Regulations**

Novartis is subject to the laws of Switzerland, in particular Swiss company and securities laws, and to the securities laws of the United States as applicable to foreign private issuers of securities.

In addition, Novartis is subject to the rules of the Swiss Stock Exchange (SWX Swiss Exchange), including the Directive on Information relating to Corporate Governance.

Novartis is also subject to the rules of the New York Stock Exchange (NYSE) as applicable to foreign private issuers of securities.

The NYSE requires Novartis to describe any material ways in which its corporate governance differs from that of domestic US companies listed on the NYSE. Different from US law, shareholders do not receive written reports from committees of the Board of Directors; in addition, the Group's external auditors are appointed by shareholders at the Annual General Meeting, as opposed to being appointed by the Audit and Compliance Committee.

#### **Swiss Code of Best Practice for Corporate Governance**

Novartis applies the Swiss Code of Best Practice for Corporate Governance, as amended, effective January 1, 2008.



**Novartis Corporate Governance Standards**

Novartis has incorporated the corporate governance standards described above into the Articles of Incorporation and the Regulations of the Board of Directors, its Committees and the Executive Committee of Novartis AG.

The Corporate Governance and Nomination Committee regularly reviews these standards and principles in light of prevailing best practices and makes recommendations for improvements for consideration by the full Board of Directors (Board).

Additional corporate governance information can be found on the Novartis website:

[www.novartis.com/investors/en/corporate\\_governance](http://www.novartis.com/investors/en/corporate_governance)

Printed copies of the Novartis Articles of Incorporation, Regulations of the Board and Charters of Board committees can be obtained by writing to: Novartis AG, Attn: Corporate Secretary, CH-4056 Basel, Switzerland.

Group Structure

**Novartis AG and Group Companies**

The registered domicile of Novartis AG is Lichtstrasse 35, CH-4056 Basel, Switzerland.

Business operations are conducted through Novartis Group companies. Novartis AG, a holding company organized under Swiss law, owns directly or indirectly all companies worldwide belonging to the Novartis Group. Except as described below, the shares of these companies are not publicly traded. The most important Novartis subsidiaries and associated companies are listed in Note 32 to the Group's consolidated financial statements.

**Divisions**

The Novartis Group conducts its business through four Divisions: Pharmaceuticals, Vaccines and Diagnostics, Sandoz and Consumer Health.

**Majority Holdings in Publicly Traded Group Companies**

The shares of Idenix Pharmaceuticals, Inc. and Novartis India Limited are publicly traded. Novartis owns:

- 55.7% of Idenix Pharmaceuticals, Inc. The shares of Idenix Pharmaceuticals are listed for trading on NASDAQ (Valor No. 1630029, ISIN US45166R2040, symbol: IDIX).
- 51% of Novartis India Limited. The remaining shares are registered for trading on the Bombay Stock Exchange (ISIN INE234A01025, symbol: HCBA).

**Significant Minority Holdings in Publicly Traded Companies**

Novartis AG holds 33.3% of the bearer shares of Roche Holding AG, registered in Basel, Switzerland, and listed on the SWX Swiss Exchange (bearer shares: Valor No. 1203211, ISIN CH0012032113, symbol: RO). The market value of the Group's interest in Roche Holding AG, as of December 31, 2007, was USD 10 billion. Novartis does not exercise control over Roche, which is independently governed, managed and operated.

Shareholders of Novartis AG

**Significant Shareholders**

As of December 31, 2007, Novartis had more than 150 000 registered shareholders. According to the share register, the largest registered shareholders were:

- The Novartis Foundation for Employee Participation, registered in Basel, Switzerland (holding 3.6% of the share capital) and
- Emasan AG, registered in Basel, Switzerland (holding 3.2%).

In addition:

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- Mellon Bank, Everett, Massachusetts (holding 2.3%); Nortrust Nominees, London (holding 2.4%); and JPMorgan Chase Bank, New York (holding 7.6%) held registered shares as nominees.

- JPMorgan Chase Bank, as depositary for the shares represented by American Depositary Shares, was the registered holder of 12.4% of the share capital.

As of December 31, 2007, no other shareholder was registered as owner of more than 2% of the registered share capital. Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

### **Cross Shareholdings**

Novartis has no cross shareholdings in excess of either 5% of capital or 5% of voting rights in any other company.

**Distribution of Novartis Shares**

| <b>At December 31, 2007</b>  | <b>Number of Registered Shareholders</b> | <b>% of Registered Share Capital</b> |
|------------------------------|--|--------------------------------------|
| <b>Number of Shares Held</b> |  |                                      |
| 1-100                        | 18 148                                   | 0.04                                 |
| 101-1 000                    | 90 420                                   | 1.48                                 |
| 1 001-10 000                 | 40 583                                   | 4.12                                 |
| 10 001-100 000               | 3 948                                    | 3.80                                 |
| 100 001-1 000 000            | 507                                      | 5.71                                 |
| 1 000 001-5 000 000          | 79                                       | 6.28                                 |
| 5 000 001 or more            | 41                                       | 56.76                                |
| Total registered shares      | 153 726                                  | 78.19                                |
| Unregistered shares          |  | 21.81                                |
| <b>Total</b>                 |  | <b>100.00</b>                        |

**Shareholders by Type and Geographic Region**

| <b>At December 31, 2007</b> | <b>Shareholders in %</b> | <b>Shares in %</b> |
|-----------------------------|--------------------------|--------------------|
| Individual shareholders     | 74.86                    | 9.90               |
| Legal entities              | 3.21                     | 32.36              |
| Nominees, fiduciaries       | 0.12                     | 35.93              |
| Unregistered shares         | 21.81                    | 21.81              |
| <b>Total</b>                | <b>100.00</b>            | <b>100.00</b>      |

|                     |               |               |
|---------------------|---------------|---------------|
| Switzerland         | 69.80         | 40.05         |
| Europe              | 7.29          | 7.72          |
| US                  | 0.40          | 29.18         |
| Other countries     | 0.70          | 1.24          |
| Unregistered shares | 21.81         | 21.81         |
| <b>Total</b>        | <b>100.00</b> | <b>100.00</b> |

**Capital Structure****Share Capital of Novartis AG**

The share capital of Novartis AG is CHF 1 364 485 500, fully paid-in and divided into 2 728 971 000 registered shares of CHF 0.50 nominal value each. Novartis has neither authorized nor conditional capital. There are no preferential voting shares. All shares have equal voting rights. No participation certificates, nonvoting equity securities (Genussscheine) or profit-sharing certificates have been issued.

Novartis shares are listed on the SWX Swiss Exchange and traded on virt-x (Valor No. 001200526, ISIN CH0012005267, symbol: NOVN.VX) as well as on the NYSE in the form of American Depositary Shares (ADS) (Valor No. 567514, ISIN US66987V1098, symbol: NVS).

**Share Repurchase Programs**

Novartis began repurchasing its shares in 1999. Since then, five share repurchase programs have been completed with the repurchase of shares worth CHF 19 billion. Shares repurchased under the first program were not cancelled. However, shares repurchased under the second, third and part of the fourth program were cancelled. In 2007, 22.2 million shares were repurchased to complete the fourth program, as well as 63.1 million shares to complete the fifth program. The cancellation of these shares will be proposed at the Annual General Meeting in February 2008, along with a corresponding reduction in the share capital.

**Changes in Share Capital**

Novartis has not increased its share capital during the last three years. As part of various share repurchase programs, Novartis has reduced its share capital as follows:

**Capital Reductions**

| <b>Year of Reduction</b> | <b>Number of<br/>Shares<br/>Cancelled</b> | <b>Amount of<br/>Capital Reduced<br/>in CHF</b> |
|--------------------------|---|---|
| 2005                     | 38 039 000                                | 19 019 500                                      |
| 2006                     | 10 200 000                                | 5 100 000                                       |
| 2007                     | 0   | 0   |

A table with additional information on changes in the Novartis share capital structure in the last two years can be found in Note 5 to the financial statements of Novartis AG.

**Convertible or Exchangeable Securities**

Novartis has not issued convertible or exchangeable bonds, warrants, options or other securities granting rights to Novartis shares, other than securities granted to associates as a component of compensation.

Shareholder Rights

**One Share, One Vote**

Each registered share entitles the holder to one vote at General Meetings.

**Other Shareholder Rights**

Shareholders representing at least 10% of the share capital may request that an extraordinary General Meeting of shareholders be convened. Shareholders representing shares with an aggregate nominal value of at least CHF 1 000 000 may request that an item be included in the agenda of a General Meeting of shareholders. Such requests must be made in writing at least 45 days before the date of the General Meeting, specify the item to be included in the agenda and contain the proposal on which the shareholder requests a vote.

Shareholders have the right to receive dividends, appoint a proxy and hold such other rights as are granted under the Swiss Code of Obligations.

**Registration as Shareholder**

No restrictions apply on the transferability of Novartis shares. However, only shareholders registered in the Novartis share register may exercise their voting rights. In order to be registered, a shareholder must declare that he or she acquired the shares in his or her own name and for his or her own account.

**Restriction on Registration with the Right to Vote**

The Articles of Incorporation provide that no shareholder shall be registered with the right to vote shares composing more than 2% of the Novartis registered share capital. The Board may, upon request, grant an exemption from this restriction. Exemptions are in force for the two largest shareholders, the Novartis Foundation for Employee Participation and Emasan AG. In 2007, no other exemptions were requested.

Given that shareholder representation at General Meetings has traditionally been low, Novartis considers the restriction on registration necessary to prevent a minority shareholder from dominating a General Meeting.

#### **Restriction on Registration of Nominees**

The Articles of Incorporation provide that no nominee shall be registered with the right to vote shares composing 0.5% or more of the Novartis registered share capital. The Board may, upon request, grant an exemption from this restriction if the nominee discloses the names, addresses and the number of shares of the persons for whose account it holds 0.5% or more of the registered share capital.

#### **Removal of Restrictions on Registration**

The restrictions on registration contained in the Articles of Incorporation may only be removed by a resolution of the General Meeting of shareholders, with approval of at least two-thirds of the votes represented at the meeting.

#### **American Depositary Share Holders**

The same restrictions apply to holders of American Depositary Shares (ADS) as those holding Novartis shares (i.e. the right to vote up to 2% of the Novartis registered share capital - unless otherwise granted an exemption by the Board - and disclosure requirement for nominees, as described above).

ADS holders may vote by instructing JPMorgan Chase Bank, the ADS depository bank, to exercise the voting rights attached to the registered shares underlying the ADSs. JPMorgan Chase Bank exercises the voting rights for registered shares underlying ADSs for which no voting instructions have been given by providing a discretionary proxy to the independent proxy appointed by Novartis pursuant to Swiss law.

#### **Circumvention of Restrictions on Registration**

Shareholders, ADS holders or nominees that are linked to each other or act in concert to circumvent the restrictions on registration are treated as one single person or nominee for purposes of the restrictions on registration.





**No Restriction on Trading of Shares**

Although no changes will be made to the share register kept by Novartis or the ADS register kept by JPMorgan Chase Bank from the respective record dates for shares and ADSs until after the General Meeting, the registration of shareholders does not affect the transferability of shares or ADSs. No trading restriction exists for registered shares or ADSs imposed by Novartis before, during or after a General Meeting.

**Resolutions and Elections at General Meetings**

The General Meeting passes resolutions and elections with the absolute majority of the votes represented at the meeting. However, under the Articles of Incorporation, the approval of two-thirds of the votes represented is required for:

- An alteration of the purpose of Novartis AG;
- The creation of shares with increased voting power;
- An implementation of restrictions on the transfer of registered shares and the removal of such restrictions;
- An authorized or conditional increase of the share capital;
- An increase of the share capital out of equity, by contribution in kind, for the purpose of an acquisition of property, or the grant of special rights;
- A restriction or suspension of rights of options to subscribe;
- A change of location of the registered office of Novartis AG; or
- The dissolution of Novartis AG without liquidation.

**Change-of-Control Provisions**

**No Opting Up, No Opting Out**

The Swiss Stock Exchange Act provides that anyone who, directly, indirectly or acting in concert with third parties, acquires equity securities exceeding 33 1/3% of the voting rights of a company whether or not such rights are exercisable is required to make an offer to acquire all listed equity securities of that company. A company may raise this threshold to 49% of the voting rights ( opting up ) or may, under certain circumstances, waive the threshold ( opting out ). Novartis has not adopted any such measures.

**Change-of-Control Clauses in Employment Contracts**

Please see under Remuneration Report Contracts with Members of the Executive Committee.

## Board of Directors

**Composition of the Board of Directors as of January 1, 2008**

|                     | Age | Board<br>Member<br>Since | Term<br>Expires |
|---------------------|-----|--------------------------|-----------------|
| Daniel Vasella      | 54  | 1996                     | 2010            |
| Ulrich Lehner       | 61  | 2002                     | 2008            |
| Hans-Joerg Rudloff  | 67  | 1996                     | 2010            |
| Peter Burckhardt    | 68  | 1996                     | 2008            |
| Srikant Datar       | 54  | 2003                     | 2009            |
| William W. George   | 65  | 1999                     | 2009            |
| Alexandre F. Jetzer | 66  | 1996                     | 2008            |
| Pierre Landolt      | 60  | 1996                     | 2008            |
| Andreas von Planta  | 52  | 2006                     | 2009            |
| Wendelin Wiedeking  | 55  | 2003                     | 2009            |
| Marjorie M. Yang    | 55  | 2008                     | 2010            |
| Rolf M. Zinkernagel | 63  | 1999                     | 2009            |

Birgit Breuel retired from the Board effective March 6, 2007. Marjorie M. Yang was elected at the Annual General Meeting of March 6, 2007, with a term of office beginning on January 1, 2008.

**Independence of Directors**

The independence of Directors is a key corporate governance issue. Accordingly, Novartis established independence criteria that are intended to reflect international best-practice standards. These independence criteria (last revised on October 17, 2007) can be found on the Novartis website:

[www.novartis.com/investors/governance-documents.shtml](http://www.novartis.com/investors/governance-documents.shtml)

The Corporate Governance and Nomination Committee annually submits to the Board a proposal concerning the determination of the independence of each Director. For this assessment, the Committee considers all relevant facts and circumstances of which it is aware.

In its meeting on December 12, 2007, the Board determined that all of its members, except for Daniel Vasella and Alexandre F. Jetzer, are independent.

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Daniel Vasella, the Chief Executive Officer, is the only Director that is also an executive of Novartis. Alexandre F. Jetzer acts for Novartis under a consultancy agreement to support various government relations activities of Novartis.

The Board has delegated Rolf M. Zinkernagel, who won a Nobel Prize for Medicine in 1996, to the Scientific Advisory Board of the Novartis Institute for Tropical Diseases (NITD) and to the Board of Directors of the Genomics Institute of the Novartis Research

Foundation (GNF). The Board concluded that these activities are supervisory, and not consultancy, in nature and therefore do not affect his independence as Director.

### **Election and Term of Office**

All Directors are elected individually.

Directors are elected to terms of office of three years or less by the shareholders at Annual General Meetings. The terms of office among Directors are to be coordinated so that approximately one-third of all Directors are subject each year to re-election or election. Under Swiss law, a General Meeting of shareholders is entitled to remove any Director at any time, regardless of his or her remaining term of office.

The average tenure of Directors is eight years and the average age is 60. In principle, a Director must retire after reaching age 70. Under certain circumstances, shareholders may grant an exemption from this rule and re-elect a Director for additional terms of office of no more than three years at a time.

### **Chairman and Chief Executive Officer**

The Board regularly reviews the position of the Chairman and Chief Executive Officer. Presently, the Board is of the firm opinion that it is in the best interest of Novartis and its shareholders that Daniel Vasella serves as Chairman and Chief Executive Officer of the Group.

A number of leading corporate governance codes recognize that the combination of the chairman and chief executive officer roles can be advantageous for a company if combined with an appropriate set of checks and balances. These checks and balances include an independent Lead Director, a majority of independent Directors, regular private meetings of the independent Directors chaired by the Lead Director and separate Board committees (Corporate Governance and Nomination Committee, Audit and Compliance Committee and Compensation Committee) that all are composed exclusively of independent Directors. Novartis has instituted all of these checks and balances.

### **Lead Director**

In 2006, the Board appointed Ulrich Lehner as Lead Director. His responsibilities include ensuring an orderly evaluation of the performance of the Chairman and Chief Executive Officer, chairing the Board's private sessions (i.e., meetings of the independent Directors) and leading the independent Directors in the event of a crisis or in matters requiring their separate consideration or decision. The Lead Director is also a member of all Board committees.

In 2007, the independent Directors held two private sessions chaired by the Lead Director.

### **Role and Functioning of the Board**

The Board holds the ultimate decision-making authority for Novartis AG in all matters, except for those decisions reserved by law for shareholders.

The Chairman sets the agendas of Board meetings. Any Director may request a Board meeting or the inclusion of an item on the agenda. Directors are provided, in advance of Board meetings, with materials intended to prepare them to discuss the items on the agenda. Decisions are made by the Board as a whole, with the support of its four committees (Chairman's Committee, Compensation Committee, Audit and Compliance Committee, and Corporate Governance and Nomination Committee).

The primary functions of the Board include:

- Providing the strategic direction of the Group;
- Determining the organizational structure and the manner of governance of the Group;
- Supervising the business operations overall;
- Approving major acquisitions or divestments;
- Structuring the accounting system, financial controls and financial planning;
- Reviewing and approving the annual financial statements and results release of Novartis AG and the Group;
- Appointing and dismissing members of the Executive Committee, the Head of Internal Audit and other key executives;
- Promulgating and overseeing compliance with fundamental corporate policies, in particular on financial matters, corporate governance and citizenship, personnel and environmental matters;
- Preparing matters to be presented at General Meetings, including Novartis AG's financial statements and the consolidated financial statements for the Group;
- Regularly evaluating the performance of the Chairman and Chief Executive Officer and reviewing the performance of the members of the Executive Committee; and
- Performing an annual self-evaluation.

These details are regulated in the Regulations of the Board of Directors, its Committees and the Executive Committee of Novartis AG (Board Regulations), which are published on the Novartis website: [www.novartis.com/investors/en/corporate\\_governance](http://www.novartis.com/investors/en/corporate_governance)

### **Role and Functioning of the Board Committees**

Each Board committee has a written charter outlining its duties and responsibilities and is led by a Chair elected by the Board. The

Board committees meet regularly to consider the items on the agenda determined by the Chair. Board committee members are provided, in advance of meetings, with materials intended to prepare them to discuss the items on the agenda.

#### **The Chairman's Committee**

The Chairman's Committee is composed of four Directors. This Committee makes decisions on financial and other matters delegated by the Board to the Chairman's Committee in accordance with the Board Regulations. In addition, in urgent cases, the Chairman's Committee also makes decisions and takes preliminary actions on behalf of the Board.

The Committee's charter is published on the Novartis website:

[www.novartis.com/investors/en/corporate\\_governance](http://www.novartis.com/investors/en/corporate_governance)

#### **The Compensation Committee**

The Compensation Committee is composed of three independent Directors. This Committee reviews Group-wide compensation policies and programs, including share option programs and other incentive-based compensation, for approval by the Board. The Compensation Committee advises the Board on the compensation of Non-Executive Directors, decides on the compensation of the Chairman and Chief Executive Officer, the members of the Executive Committee and other key executive officers, and approves the employment contracts of these executives. The Compensation Committee has the authority to retain external compensation consultants and other advisors.

The Charter of the Compensation Committee is published on the Novartis website:

[www.novartis.com/investors/en/corporate\\_governance](http://www.novartis.com/investors/en/corporate_governance)

#### **The Audit and Compliance Committee**

The Audit and Compliance Committee is composed of five independent Directors. This Committee has determined that Ulrich Lehner, Srikant Datar and Hans-Joerg Rudloff each possess specific accounting and financial management expertise and that each is an Audit Committee Financial Expert as defined by the US Securities and Exchange Commission (SEC). The Board has also determined that other members of the Audit and Compliance Committee have sufficient experience and ability in finance and compliance matters to enable them to adequately discharge their responsibilities.

The Audit and Compliance Committee's main duties include:

- Evaluating and selecting the external auditors to be nominated for election at the Annual General Meeting;

- Reviewing the external auditors' terms of engagement;
- Determining the scope and the review of the results of external and internal audits;
- Reviewing (together with the Group's external and internal

**BOARD AND COMMITTEES ATTENDANCE, NUMBER AND DURATION OF MEETINGS IN 2007**

|   | Full Board | Chairman's Committee | Compensation Committee | Audit and Compliance Committee | Corporate Governance and Nomination Committee |
|---|------------|----------------------|------------------------|--------------------------------|---|
| <b>Number of meetings in 2007</b>                   | <b>10</b>  | <b>9</b>             | <b>6</b>               | <b>7</b>                       | <b>3</b>                                      |
| <b>Approximate duration of each meeting (hours)</b> | <b>6</b>   | <b>2</b>             | <b>2</b>               | <b>3</b>                       | <b>2</b>                                      |
| Daniel Vasella                                      | 10(1)      | 9(1)                 |                        |                                |   |
| Ulrich Lehner                                       | 10         | 8                    | 6                      | 6(1)                           | 3   |
| Hans-Joerg Rudloff                                  | 10         | 9                    | 6(1)                   | 6                              | 2(2)  |
| Birgit Breuel (3)                                   | 0          |                      |                        | 2                              |   |
| Peter Burckhardt                                    | 10         |                      |                        | 4(4)                           |   |
| Srikant Datar                                       | 10         |                      |                        | 7                              |   |
| William W. George                                   | 10         | 9                    | 6                      |                                | 3(1)  |
| Alexandre F. Jetzer                                 | 10         |                      |                        |                                |   |
| Pierre Landolt                                      | 10         |                      |                        |                                | 3   |
| Andreas von Planta                                  | 10         |                      |                        | 7                              |   |
| Wendelin Wiedeking                                  | 8          |                      |                        |                                |   |
| Rolf M. Zinkernagel                                 | 10         |                      |                        |                                | 3   |

(1) Chair

(2) Until November 2007

(3) Until March 6, 2007

(4) Since March 2007

auditors and financial and accounting management) whether the accounting policies and financial controls are appropriate, effective and compliant with the applicable accounting standards;

- Reviewing and approving the quarterly financial statements of the Group for the first three quarters of each year and the corresponding financial results releases;
- Reviewing internal control and compliance processes and procedures, including those for the management of business risks; and
- Reviewing processes and procedures to ensure compliance with laws and internal regulations.

The Charter of the Audit and Compliance Committee is published on the Novartis website:

[www.novartis.com/investors/en/corporate\\_governance](http://www.novartis.com/investors/en/corporate_governance)

#### **The Corporate Governance and Nomination Committee**

The Corporate Governance and Nomination Committee is composed of five independent Directors. This Committee develops corporate governance principles and recommends these to the Board for approval. Its duties include regular reviews of the Articles of Incorporation with a view to reinforcing shareholder rights, and of the composition and size of the Board and its committees. The Corporate Governance and Nomination Committee annually reviews the independence status of each Director. In addition, the Corporate Governance and Nomination Committee identifies candidates for election as Directors.

The Charter of the Corporate Governance and Nomination Committee is published on the Novartis website:

[www.novartis.com/investors/en/corporate\\_governance](http://www.novartis.com/investors/en/corporate_governance)

#### **Information and Control Systems of the Board vis-à-vis Management**

##### **The Board**

The Board ensures that it receives sufficient information from the Executive Committee to perform its supervisory duty and to make decisions that are reserved for the Board. The authority of the Board to determine the compensation of the members of the Executive Committee is an important element to ensure the alignment of Executive Committee members with the interests of Novartis and its shareholders.

The Board obtains the information required to perform its duties through several means:

- Since the Chairman is also the Chief Executive Officer of Novartis, who heads the meetings of the Executive Committee, he is fully informed on all current developments;
- The Chairman and Chief Executive Officer informs all Directors regularly about current developments, including by regularly submitting written reports;
- The minutes of Committee meetings are made available to the Directors;
- Informal teleconferences are held as required between Directors and the Chairman and Chief Executive Officer or the Lead Director;
- A session is held at each Board meeting with all members of the Executive Committee;
- The Board is updated in detail by each Division Head on a quarterly basis;
- By invitation, members of management are invited to attend Board meetings to report on areas of the business within their responsibility; and
- Directors are entitled to request information from members of the Executive Committee or any other Novartis associate, and may also visit any Novartis site.

#### **Board Committees**

Board committees regularly meet with management and, at times, outside consultants to review the business, better understand applicable laws and policies affecting the Group and support management in meeting the requirements and expectations of stakeholders.

In particular, the Chief Financial Officer and representative of the external auditors are invited to meetings of the Audit and Compliance Committee. Furthermore, the Heads of Internal Audit, Risk Management and Compliance, as well as the Business Practices Officer, report on a regular basis to the Audit and Compliance Committee.

The Audit and Compliance Committee reviews financial reporting processes on behalf of the Board. For each quarterly and annual release of financial information, the Disclosure Review Committee reviews the release for accuracy and completeness of disclosures. The Disclosure Review Committee is chaired by the Chief Financial Officer and is attended by the Heads of the Divisions, the Heads of finance of the Divisions and the Heads of the following Corporate Functions: Legal, Treasury, Financial Reporting & Accounting, Internal Audit and Investor Relations. Decisions made by the Disclosure Review Committee are reviewed by the Audit and Compliance Committee before publication of the quarterly and annual release.

### **Internal Audit**

The Internal Audit function carries out operational and system audits in accordance with an audit plan adopted by the Audit and Compliance Committee; assists organizational units in the accomplishment of objectives by providing an independent approach to the evaluation, improvement and effectiveness of their internal control framework; prepares reports regarding the audits it has performed; and reports actual or suspected irregularities to the Audit and Compliance Committee and the Chairman of the Board.

The Audit and Compliance Committee regularly reviews the scope of Internal Audit, the audit plans and the results of the internal audits.

### **Corporate Risk Management**

The Corporate Risk Management function reports to the Board on a regular basis on risk assessment and risk management. Organizational and process measures have been designed to identify and mitigate risks at an early stage. Organizationally, the responsibility for risk and risk mitigation is allocated to the Divisions, with specialized corporate functions such as Group Quality Operations; Corporate Health, Safety and Environment; and Business Continuity providing support and controlling the effectiveness of the risk management by the Divisions.

### **Management of the Group**

The Board has delegated to the Executive Committee the coordination of the Group's day-to-day business operations. The Executive Committee is headed by the Chief Executive Officer.

The primary functions of the Executive Committee include:

- Implementing the strategies and policies adopted by the Board;
- Regularly assessing the achievement of targets set for the businesses;
- Drawing up corporate policies, strategies and strategic plans for approval by the Board;
- Submitting to the Board and its committees any proposed changes in management positions of material significance, capital investments, financial measures, acquisitions or divestitures of companies, participations and businesses, contracts of material significance and budgets;
- Implementing matters that have been approved by the Board or its committees;
- Preparing and submitting quarterly and annual reports to the Board or its committees;

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- Informing the Board of all matters of fundamental significance to the businesses;
- Appointing and promoting senior management as well as the selection and promotion of new and potential management personnel;
- Implementing modifications to the Group's organization;
- Ensuring the efficient operation of the Group and achievement of optimized results;
- Promoting an active internal and external communications policy;
- Ensuring that management capacity, financial and other resources are provided and used efficiently;
- Promulgating guidelines; and
- Dealing with any other matters as are delegated by the Board to the Executive Committee.

The organizational structure and the details of the responsibility of the Executive Committee are set forth in the Board Regulations.

The Board has not concluded any contracts with third parties to manage the business.

For further biographical information on the members of the Executive Committee please see under Corporate Governance – Executive Committee Biographical Information.

### Auditors

#### **Duration of the Mandate and Terms of Office of the Independent Auditors**

Based on a recommendation by the Audit and Compliance Committee, the Board nominates an independent auditor for election at the Annual General Meeting. PricewaterhouseCoopers (PwC) assumed its existing auditing mandate for Novartis in 1996. The lead auditors responsible for the mandate, Robert P. Muir and Daniel Suter, began serving in their roles in 2005 and 2003, respectively.

#### **Auditing and Additional Fees**

PwC charged the following fees for professional services rendered for the 12-month periods ended December 31, 2007 and December 31, 2006:

| 2007<br>USD thousands | 2006<br>USD thousands |
|-----------------------|-----------------------|
|-----------------------|-----------------------|

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|                        |               |               |
|------------------------|---------------|---------------|
| Audit Services         | 21 245        | 19 785        |
| Audit-Related Services | 904           | 1 356         |
| Tax Services           | 222           | 329           |
| Other Services         | 331           | 344           |
| <b>Total</b>           | <b>22 702</b> | <b>21 814</b> |

Audit Services are defined as the standard audit work performed each year in order to issue opinions on the consolidated financial statements of the Group, to issue opinions relating to the effectiveness of the Group's internal controls over financial reporting, and to issue reports on local statutory financial statements. Also included are services that can only be provided by the Group auditor, such as auditing of nonrecurring transactions and implementation of new accounting policies, audits of significant and newly implemented system controls, pre-issuance reviews of quarterly financial results, consents and comfort letters and any other audit services required for SEC or other regulatory filings.

Audit-Related Services include those other assurance services provided by the independent auditor but not restricted to those that can only be provided by the auditor signing the audit report. They comprise amounts for services such as acquisition due diligence and related audits, audits of pension and benefit plans, contractual audits of third-party arrangements, assurance services on corporate citizenship reporting, and consultation regarding new accounting pronouncements.

Tax Services represent tax compliance, tax returns, assistance with historical tax matters and other tax-related services.

Other Services include training in the finance area, benchmarking studies, assessment of certain non-financial processes and license fees for use of accounting and other reporting guidance databases.

As the independent auditor, PwC is responsible for opining on whether the audited financial statements comply with International Financial Reporting Standards (IFRS) and Swiss law. Additionally, PwC is responsible for opining on the effectiveness of internal control over financial reporting.

The Audit and Compliance Committee is responsible for overseeing the conduct of these activities by management and PwC. During 2007, the Audit and Compliance Committee held seven meetings. At each of these meetings, PwC was invited to attend during the discussion of agenda items that dealt with accounting, financial reporting or auditing matters and any other important matters. PwC provided to the Audit and Compliance Committee the written disclosures required by US Independence Standards Board Standard No. 1 (Communications with Audit Committees), and the Audit and Compliance Committee and PwC have discussed PwC's independence from Novartis and Novartis Management.

Based on the reviews and discussions with Management and PwC referred to above, the Audit and Compliance Committee recommended to the Board, and the Board approved, inclusion of the audited financial statements in the Annual Report for the year ended December 31, 2007.

#### **Policy on Pre-Approval of Audit and Non-Audit Services of Independent Auditors**

The Audit and Compliance Committee's pre-approval is required for all audit and non-audit services provided by PwC. These services may include audit services, audit-related services, tax services and other services, as described above. Pre-approval is detailed as to the particular service or categories of services, and is subject to a specific budget.

PwC and management report, on a quarterly basis, to the Audit and Compliance Committee regarding the extent of services provided in accordance with this pre-approval and the fees for the services performed to date. The Audit and Compliance Committee may also pre-approve

additional services on a case-by-case basis.

## Information and Communications Policy

### **Introduction**

Novartis is committed to open and transparent communication with shareholders, financial analysts, customers, suppliers and other stakeholders. Novartis aims to disseminate material developments in its businesses in a broad and timely manner that complies with the rules of the SWX Swiss Exchange and the NYSE.

### **Communications**

Novartis publishes an Annual Report each year that provides information on the Group's results and operations. In addition to the Annual Report, Novartis also prepares an annual report on Form 20-F that is filed with the SEC. Novartis discloses quarterly financial results in accordance with IFRS and issues press releases from time to time regarding current developments in its businesses.

Novartis furnishes press releases relating to financial results and material events to the SEC via Form 6-K. An archive containing Annual Reports to Shareholders, annual reports on Form 20-F, and quarterly results releases, as well as related materials such as slide presentations and conference call webcasts, is on the Novartis Investor Relations website ([www.novartis.com/investors](http://www.novartis.com/investors)). A press release archive is available on the Novartis website:

[www.novartis.com/news/en/media.shtml](http://www.novartis.com/news/en/media.shtml)

Information contained in reports and releases issued by Novartis is only correct and accurate at the time of release. Novartis does not update past releases to reflect subsequent events and advises against relying on past reports and releases for current information.

**Investor Relations Program**

An Investor Relations team manages the Group's interaction with the international financial community. Several events are held each year to provide institutional investors and analysts various opportunities to learn more about Novartis.

Investor Relations is based at the Group's headquarters in Basel, Switzerland. A team is also located in New York to coordinate interaction with US investors. Comprehensive information is available on the Novartis website: [www.novartis.com/investors](http://www.novartis.com/investors). Investors are also welcome to subscribe to a free e-mail service on this site.

**Further Information**

| <b>Topic</b>  | <b>Location</b>   |
|---|---|
| <b>SHARE CAPITAL</b><br>Information on the Novartis capital structure   | Articles of Incorporation of Novartis AG<br><a href="http://www.novartis.com/investors/en/corporate_governance">www.novartis.com/investors/en/corporate_governance</a><br>Novartis key share data<br><a href="http://www.novartis.com/investors/en/share_information/key_share_data.shtml">www.novartis.com/investors/en/share_information/key_share_data.shtml</a> |
| <b>SHAREHOLDER RIGHTS</b><br>Information on Novartis shares and shareholder participation rights              | Articles of Incorporation of Novartis AG<br><a href="http://www.novartis.com/investors/en/corporate_governance">www.novartis.com/investors/en/corporate_governance</a><br>Investor Relation information<br><a href="http://www.novartis.com/investors">www.novartis.com/investors</a>   |
| <b>BOARD OF DIRECTORS AND EXECUTIVE COMMITTEE</b><br>Internal organization and allocation of responsibilities | Board Regulations<br><a href="http://www.novartis.com/investors/en/corporate_governance">www.novartis.com/investors/en/corporate_governance</a>   |
| <b>SENIOR MANAGEMENT</b>  | Senior Leadership Team<br><a href="http://www.novartis.com/about-novartis/leadership-governance/index.shtml">www.novartis.com/about-novartis/leadership-governance/index.shtml</a>  |
| <b>NOVARTIS CODE FOR SENIOR FINANCIAL OFFICERS</b>  | Novartis Code of Ethical Conduct for CEO and Senior Financial Officers<br><a href="http://www.novartis.com/investors/en/corporate_governance">www.novartis.com/investors/en/corporate_governance</a>  |
| <b>ADDITIONAL INFORMATION</b><br>Overview of investor information   | Novartis Investor Relations<br><a href="http://www.novartis.com/investors/index.shtml">www.novartis.com/investors/index.shtml</a>   |



FROM LEFT TO RIGHT:  
ANDREAS VON PLANTA, PETER BURCKHARDT, ROLF M. ZINKERNAGEL,  
SRIKANT DATAR, HANS-JOERG RUDLOFF, DANIEL VASELLA, ULRICH LEHNER,  
PIERRE LANDOLT, WILLIAM W. GEORGE, WENDELIN WIEDEKING, ALEXANDRE  
F. JETZER

## Board of Directors

**Daniel Vasella, M.D.**

Chairman and CEO  
Swiss, age 54

**Ulrich Lehner, Ph.D.**

Vice Chairman and Lead Director  
German, age 61

**Hans-Joerg Rudloff**

Vice Chairman  
German, age 67

**Peter Burckhardt, M.D.**

Swiss, age 68

**Srikant Datar, Ph.D.**

American, age 54

**William W. George**

American, age 65

**Alexandre F. Jetzer**

Swiss, age 66

**Pierre Landolt**

Swiss, age 60

**Andreas von Planta, Ph.D.**

Swiss, age 52

**Dr. Ing. Wendelin Wiedeking**

German, age 55

**Marjorie Yang**

British, age 55

**Rolf M. Zinkernagel, M.D.**

Swiss, age 63

Honorary Chairman

**Alex Krauer, Ph.D.**

Corporate Secretary

**Bruno Heynen**

**Daniel Vasella, M.D.**

Swiss, age 54

**Function at Novartis AG** Since 1996 Dr. Vasella has served as Chief Executive Officer of the Group and as executive member of the Board of Directors. In 1999, he additionally was appointed Chairman of the Board of Directors.

**Other activities** Dr. Vasella is a member of the Board of Directors of Pepsico, Inc.\*, United States, a member of the Board of Dean's Advisors at the Harvard Business School, and a member of the INSEAD Board of Directors. Dr. Vasella is also a member of the International Board of Governors of the Peres Center for Peace in Israel and a member of the International Business Leaders Advisory Council for the Mayor of Shanghai. In addition, he serves as a member of several industry associations and educational institutions.

**Professional background** Dr. Vasella graduated with an M.D. from the University of Bern in 1979. After holding a number of medical positions in Switzerland, he joined Sandoz Pharmaceuticals Corporation in the US in 1988. From 1993 to 1995, Dr. Vasella advanced from Head of Corporate Marketing to Senior Vice President and Head of Worldwide Development to Chief Operating Officer of Sandoz Pharma Ltd. In 1995 and 1996, Dr. Vasella was a member of the Sandoz Group Executive Committee and Chief Executive Officer of Sandoz Pharma Ltd. He received the Harvard Business School's Alumni Achievement Award and the Appeal of Conscience Award as well as the AJ Congress Humanitarian Award and numerous other awards. Dr. Vasella was awarded an honorary doctorate by the University of Basel. He has also been honored with the Ordem Nacional do Cruzeiro do Sul (Brazil) and holds the rank of Chevalier in the Ordre National de la Légion d'honneur (France).

**Ulrich Lehner, Ph.D.**

German, age 61

**Function at Novartis AG** Ulrich Lehner was elected in 2002 to the Board of Directors of Novartis AG. He is Vice Chairman and Lead Director as well as Chairman of the Audit and Compliance Committee. He is also a member of the Chairman's Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee. The Board has appointed him as Audit Committee Financial Expert. He qualifies as an independent Non-Executive Director.

**Other activities** Ulrich Lehner is Chairman of the Management Board of Henkel KGaA, Germany. He also serves as a member of the supervisory board of E.ON AG\*, of HSBC Trinkaus & Burkhardt KGaA\* and of Porsche Automobil Holding SE\* and Dr. Ing. H.c.F. Porsche AG\*, all in Germany.

**Professional background** Ulrich Lehner studied business administration and mechanical engineering. From 1975 to 1981, he was an auditor with KPMG Deutsche Treuhand-Gesellschaft AG in Duesseldorf. In 1981, he joined Henkel KGaA. After heading the Controlling Department of Fried. Krupp GmbH in Germany from 1983 to 1986, Ulrich Lehner returned to Henkel as Finance Director. From 1991 to 1994, he headed the Management Holding Henkel Asia-Pacific Ltd. in Hong Kong. From 1995 to 2000, he served as Executive Vice President, Finance/Logistics (CFO), of Henkel.

#### **Hans-Joerg Rudloff**

German, age 67

**Function at Novartis AG** Hans-Joerg Rudloff was elected in 1996 to the Board of Directors of Novartis AG. He serves as Vice Chairman as well as Chairman of the Compensation Committee. He is also a member of the Chairman's Committee and the Audit and Compliance Committee. The Board has appointed him as Audit Committee Financial Expert. He qualifies as an independent Non-Executive Director.

**Other activities** Hans-Joerg Rudloff joined Barclays Capital\* in 1998, where he is presently Chairman. He serves on a number of boards of other companies, including the TBG Group (Thyssen-Bornemisza Group), Monaco and RBC\*, Russia. In 2005, Hans-Joerg Rudloff became Chairman of the International Capital Markets Association (ICMA). In 2006, he joined Rosneft\* a Russian state-controlled oil company, and became Chairman of the Audit Committee. He serves as the Chairman of the Board of Bluebay Asset Management Ltd. He is also Chairman of the Marcuard Family Group of companies and Member of the Board of Directors of New World Resources BV\*. In addition, Hans-Joerg Rudloff is a member of the Advisory Board of Landeskreditbank Baden-Wuerttemberg, Escada AG, and EnBW (Energie Baden-Wuerttemberg), all in Germany.

**Professional background** Hans-Joerg Rudloff studied economics at the University of Bern and graduated in 1965. He joined Credit Suisse in Geneva and moved to New York in 1968 to join the investment banking firm of Kidder Peabody Inc. He was in charge of the Swiss operation and was elected Chairman of Kidder Peabody International and a member of the Board of Kidder Peabody Inc. in 1978. In 1980 he joined Credit Suisse First Boston and was elected Vice Chairman in 1983 and Chairman and CEO in 1989. From 1986 to 1990, Hans-Joerg Rudloff was also a member of the Executive Board of Credit Suisse in Zurich in charge of all securities and capital market departments. From 1994 to 1998 Hans-Joerg Rudloff was Chairman of MC-BBL in Luxembourg. In 1994, Hans-Joerg Rudloff was elected to the Board of Directors of Sandoz AG.

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\*Publicly listed companies



**Peter Burckhardt, M.D.**

Swiss, age 68

**Function at Novartis AG** Dr. Burckhardt has been a member of the Board of Directors since 1996. He qualifies as an independent Non-Executive Director. He has been a member of the Audit and Compliance Committee since 2007.

**Other activities** From 1982 to 2004 Dr. Burckhardt was the Chairman of the Novartis (formerly Sandoz) Foundation for Biomedical Research in Switzerland. Since 1982, Dr. Burckhardt has been the Head of the Department of Internal Medicine at the University Hospital of Lausanne, then chief of medical service A, until 2004. Since 1990, he has been the organizer and chairman of the International Symposia on Nutrition and Osteoporosis. Since 2008, he is chief editor of the scientific review *Osteology*.

**Professional background** Dr. Burckhardt is a Professor of Medicine and the former Chairman of the Department of Internal Medicine at the University Hospital of Lausanne, Switzerland. He has an M.D. from the University of Basel and is a trained internal medicine and endocrinology specialist from the University of Lausanne and the Massachusetts General Hospital, Boston. In addition to his clinical activities, Dr. Burckhardt conducts clinical research, mainly in bone diseases and calcium metabolism. He has authored more than 300 scientific publications and is an editorial board member of several international scientific journals. He was president of the Swiss Society of Internal Medicine, a member of the appeal committee of the national agency for drug controls, Chairman of National Societies and member of the Executive Committee of the International Foundation of Osteoporosis, and treasurer until 2006. Other experiences comprise board membership in several scientific societies including the Swiss Societies of Nutrition, Clinical Chemistry, Endocrinology, Bone and Mineral Research, the Committee for Endocrinology of the European Community and advisory roles to scientific foundations in Switzerland and Germany.

**Srikant Datar, Ph.D.**

American, age 54

**Function at Novartis AG** Srikant Datar became a member of the Board of Directors in 2003. He has been a member of the Audit and Compliance Committee since 2007. The Board has appointed him as Audit Committee Financial Expert. He qualifies as an independent Non-Executive Director.

**Other activities** Srikant Datar is a member of the Board of ICF International, Fairfax, Virginia, USA, and KPIT-Cummins Infosystem Ltd., Pune, India. He currently holds the Arthur Lowes Dickinson Professorship at Harvard University.

**Professional background** In 1973, Srikant Datar graduated with distinction in mathematics and economics at the University of Bombay. He is a Chartered Accountant and holds two masters degrees and a Ph.D. from Stanford University. Srikant Datar has worked as an accountant and planner in industry and as a professor at the Universities of Carnegie Mellon, Stanford and Harvard in the US. Srikant Datar is Senior Associate Dean at the Graduate School of Business Administration of Harvard University, Boston, Massachusetts. His research interests are in the areas of cost management, measurement of productivity, new product development, time-based competition, incentives and performance evaluation. He is the author of many scientific publications and has received several academic awards and honors. Srikant Datar has advised and worked with numerous renowned firms such as General Motors, Mellon Bank and Morgan Stanley in research, development and training.

**William W. George**

American, age 65

**Function at Novartis AG** William W. George was elected in 1999 to the Board of Directors of Novartis AG. He is Chairman of the Corporate Governance and Nomination Committee as well as a member of the Chairman's Committee and the Compensation Committee. He qualifies as an independent Non-Executive Director.

**Other activities** William W. George is a member of the Boards of Directors of Goldman Sachs\* and Exxon Mobil\*. William W. George is Professor of Management Practice at Harvard Business School. He is a trustee of the Carnegie Endowment for International Peace and the World Economic Forum USA.

**Professional background** William W. George received his B.S. in Industrial Engineering from Georgia Institute of Technology in 1964 and an M.B.A from Harvard University in 1966. From 1966 to 1969, he worked in the US Department of Defense as a special assistant to the Secretary of the Navy and as assistant to the Comptroller. After serving as President of Litton Microwave Cooking Products, William W. George held a series of executive positions with Honeywell from 1978 to 1989. He served as President and Chief Operating Officer of Medtronic, Inc. and from 1991 to 2001, as its Chief Executive Officer. From 1996 to 2002, he was Medtronic's Chairman. He has served as Executive-in-Residence at Yale School of Management; Professor of Leadership and Governance at IMD International in Lausanne, Switzerland; and visiting Professor at the École Poly-technique Fédéral Lausanne (EPFL), also in Lausanne, Switzerland.

**Alexandre F. Jetzer**

Swiss, age 66

**Function at Novartis AG** Alexandre F. Jetzer has served as a Director since 1996. He is a Non-Executive Director.

**Other activities** Alexandre F. Jetzer is also a member of the Supervisory Board of Compagnie Financière Michelin, Granges-Paccot (FR), Switzerland, and of the Board of the Lucerne Festival Foundation, Lucerne, Switzerland. He is a member of the International Advisory Panel (IAP) on Biotechnology Strategy of the Prime Minister of Malaysia, a member of the Investment Advisory Council of the Prime Minister of Turkey and Economic Advisor to the Governor of Guangdong Province (China). He is also a member of the Development Committee of the Neuroscience Center of the University of Zurich, Switzerland.

**Professional background** Alexandre F. Jetzer graduated with master's degrees in law and economics from the University of Neuchâtel, Switzerland and is a licensed attorney. After serving as General Secretary of the Swiss Federation of Commerce and Industry (Vorort) from 1967 on, Alexandre F. Jetzer joined Sandoz in 1980. In 1981 he was appointed Member of the Sandoz Group Executive Committee in his capacity as Chief Financial Officer (CFO). In 1990 he became Head of Management Resources and International Coordination. From 1995 to 1996, he was Chairman and Chief Executive Officer of Sandoz Pharmaceuticals Corporation in East Hanover, New Jersey (US) and he additionally served as President and CEO of Sandoz Corporation in New York (US). After the merger which created Novartis in 1996 until 1999, he was appointed as a member of the Executive Committee of Novartis and Head of International Coordination, Legal & Taxes.

**Permanent Novartis management or consultancy engagements** Alexandre F. Jetzer has a consultancy agreement with Novartis International AG (Government Relations Support).

**Pierre Landolt**

Swiss, age 60

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**Function at Novartis AG** Pierre Landolt has served as a Director since 1996. He has been a member of the Corporate Governance and Nomination Committee since 2006. He qualifies as an independent Non-Executive Director.

**Other activities** Pierre Landolt is President of the Sandoz Family Foundation, Glarus, Switzerland; Chairman of the Board of Directors of Emasan AG, Basel, Switzerland; of Vaucher Manufacture Fleurier SA, Fleurier, Switzerland; and of the Instituto Estrela de Formento ao Microcrédito, Patos, Brazil. He is a member of the Board of Directors of Syngenta AG\*, where he also serves as member of the Audit Committee, and of the Syngenta Foundation for Sustainable Agriculture, both in Basel, Switzerland. Pierre Landolt is also Associate Partner of Banque Landolt & Cie, Lausanne, Switzerland; and Vice Chairman of the Board of Directors of Parmigiani Fleurier SA., Fleurier, Switzerland; and the Fondation du Montreux Jazz Festival, Montreux, Switzerland.

**Professional background** Pierre Landolt graduated with a bachelor of law degree from the University of Paris-Assas. From 1974 to 1976, he worked for Sandoz Brazil SA. In 1977, he acquired an agricultural estate in the arid northeast region of Brazil and transformed it into a model farm for organic and biotechnological development. He also created an irrigation company, initially for his own farm and today active in the entire northern region of Brazil. Since 1997, Pierre Landolt has been Associate and Chairman of AxialPar Ltda, São Paulo, Brazil, an investment company focused on sustainable development. In 2000, he co-founded EcoCarbone France, Paris, a company active in the design and development of carbon-sequestration processes in Asia, Africa, South America and Europe.

### **Andreas von Planta, Ph.D.**

Swiss, age 52

**Function at Novartis AG** In 2006, Andreas von Planta was elected to the Board of Directors of Novartis AG. He has been a member of the Audit and Compliance Committee since 2006. He qualifies as an independent Non-Executive Director.

**Other activities** Andreas von Planta is Vice Chairman of Holcim Ltd\* and the Schweizerische National-Versicherungs-Gesellschaft AG\*, and is a member of the boards of various Swiss subsidiaries of foreign companies. He is a member of the Board of Editors of the Swiss Review of Business Law, and is a former Chairman of the Geneva Association of Business Law.

**Professional background** Andreas von Planta holds lic. iur. and Ph.D. degrees from the University of Basel and an LL.M. from Columbia University School of Law, New York. He passed his bar examinations in Basel in 1982. Since 1983, he has lived in Geneva, working for the law firm Lenz & Staehelin where he became a partner in 1988. His areas of specialization include corporate law, corporate finance, company reorganizations, and mergers and acquisitions.



**Dr. Ing. Wendelin Wiedeking**

German, age 55

**Function at Novartis AG** Wendelin Wiedeking was elected as a member of the Board of Directors in 2003. He qualifies as an independent Non-Executive Director.

**Other activities** Wendelin Wiedeking is Chairman of the Executive Board of Porsche Automobil Holding SE\* and of Dr.-Ing. h.c. F. Porsche AG\*, Germany.

**Professional background** Born in Ahlen, Germany, Wendelin Wiedeking studied mechanical engineering and worked as a scientific assistant in the Machine Tool Laboratory of the Rhine-Westphalian College of Advanced Technology in Aachen. His professional career began in 1983 as Director's Assistant in the Production and Materials Management area of Dr.-Ing. h.c. F. Porsche AG in Stuttgart-Zuffenhausen. In 1988, he moved to the Glyco Metall-Werke KG in Wiesbaden as Division Manager, where he advanced by 1990 to the position of Chief Executive and Chairman of the Board of Management of Glyco AG. In 1991, he returned to

Porsche AG as Production Director. A year later, the Supervisory Board appointed him spokesman of the Executive Board (CEO), and Chairman in 1993.

**Marjorie M. Yang**

British, age 55

**Function at Novartis AG** Marjorie Yang was elected in 2007 to the Board of Directors of Novartis AG with effect from January 1, 2008. She qualifies as an independent Non-Executive Director.

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**Other activities** Marjorie M. Yang is Chairman and CEO of the Esquel Group. She currently sits on the boards of Swire Pacific and The Hong Kong and Shanghai Banking Corporation Limited. She is also a member of the National Committee of the Chinese People's Political Consultative Conference, Chairman of the Textile and Clothing Sector Committee, Vice Chairman of the China Association of Enterprises with Foreign Investment and a member of the M.I.T. Corporation. Marjorie M. Yang is on the Board of Dean's Advisors of Harvard Business School.

**Professional background** Marjorie M. Yang graduated with a B.S. in Mathematics from M.I.T. and holds an M.B.A from Harvard Business School. From 1976 to 1978 she was an associate in Corporate Finance, Mergers and Acquisitions with the First Boston Corporation in New York. In 1979 she returned to Hong Kong and helped create Esquel. She has been Chairman and CEO of the Esquel Group since 1995.

### **Rolf M. Zinkernagel, M.D.**

Swiss, age 63

**Function at Novartis AG** In 1999, Dr. Zinkernagel was elected to the Board of Directors of Novartis AG. He has been a member of the Corporate Governance and Nomination Committee since 2001. He qualifies as an independent Non-Executive Director.

**Other activities** Rolf M. Zinkernagel is a member of the Swiss Society of Allergy and Immunology, the American Associations of Immunologists and of Pathologists, the ENI European Network of Immunological Institutions, member of the Advisory Council, BMS Singapore and President of the Executive Board of the International Union of Immunological Societies (IUIS). He is also a member of the Scientific Advisory Boards of: Bio-Alliance AG, Frankfurt, Germany; Aravis General Partner Ltd., Cayman Islands; Biozell\*, Milan, Italy; Esbatech, Zurich, Switzerland; Novimmune, Geneva, Switzerland; Miikana Therapeutics, Fremont, California USA (until January 2006); Nuvo Research\* (until September 2005: Dimethaid), Toronto, Canada; Cancevir, Zürich, Switzerland; xbiotech, Vancouver, Canada; ImVision, Hannover, Germany; MannKind\*, Sylmar, California, US; and Laboratoire Koch, Lausanne, Switzerland (since 2006). Rolf M. Zinkernagel is also a Science Consultant to: GenPat77, Berlin/Munich, Germany; Chilka Ltd., Grand Cayman; Solis Therapeutics, Palo Alto, California, US; Ganymed, Mainz, Germany; and Zhen-Ao Group, Dalian, China.

**Professional background** Dr. Zinkernagel graduated from the University of Basel with an M.D. in 1970. Since 1992 he has been Professor and Director of the Institute of Experimental Immunology at the University of Zurich. Dr. Zinkernagel has received many awards and prizes for his work and contribution to science, the most prestigious being the Nobel Prize for Medicine which he was awarded in 1996. Dr. Zinkernagel was a member of the Board of Directors of Cytos Biotechnology AG\*, Schlieren/Zurich, Switzerland, until April 2003.



FROM LEFT TO RIGHT:

JOSEPH JIMENEZ, ANDREAS RUMMELT, MARK C. FISHMAN, RAYMUND BREU, DANIEL VASELLA, THOMAS EBELING,  
JOERG REINHARDT, JUERGEN BROKATZKY-GEIGER, THOMAS WELLAUER

Executive Committee

**Daniel Vasella, M.D.**  
Chairman and CEO  
Member since 1996, Swiss, age 54

**Thomas Ebeling**  
Head of Consumer Health  
Member since 1998, German, age 48

**Andreas Rummelt, Ph.D.**  
Head of Sandoz  
Member since 2006, German, age 51

**Raymund Breu, Ph.D.**  
Chief Financial Officer  
Member since 1996, Swiss, age 62

**Mark C. Fishman, M.D.**  
Head of Biomedical Research  
Member since 2002, American, age 56

**Thomas Wellauer, Ph.D.**  
Head of Corporate Affairs  
Member since 2007, Swiss, age 52

**Juergen Brokatzky-Geiger, Ph.D.**

Head of Human Resources  
Member since 2005, German, age 55

**Joseph Jimenez**

Head of Pharmaceuticals  
Member since 2007, American, age 48

**Joerg Reinhardt, Ph.D.**

Head of Vaccines and Diagnostics  
Member since 2007, German, age 51

Secretary to the  
Executive Committee  
**Bruno Heynen**

**Daniel Vasella, M.D.**

Swiss, age 54

Dr. Vasella graduated with an M.D. from the University of Bern, Switzerland, in 1979. After holding a number of medical positions in Switzerland, he joined Sandoz Pharmaceuticals Corporation in the US in 1988. From 1993 to 1995, Dr. Vasella advanced from Head of Corporate Marketing to Senior Vice President and Head of Worldwide Development to Chief Operating Officer of Sandoz Pharma Ltd. In 1995 and 1996, he was a member of the Sandoz Group Executive Committee and Chief Executive Officer of Sandoz Pharma Ltd. After the merger that created Novartis in 1996, Dr. Vasella became Chief Executive Officer of the Group and executive member of the Board of Directors. In 1999 he additionally was appointed Chairman of the Board of Directors. Dr. Vasella is a director of Pepsico, Inc. (US). He is a member of the Board of Dean's Advisors at the Harvard Business School, and a member of the INSEAD Board of Directors. Dr. Vasella is also a member of the International Board of Governors of the Peres Center for Peace in Israel and the International Business Leaders Advisory Council for the Mayor of Shanghai. He was awarded an honorary doctorate by the University of Basel in 2002.

**Raymund Breu, Ph.D.**

Swiss, age 62

Raymund Breu graduated from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland, with a Ph.D. in mathematics. In 1975, he joined the Treasury Department of the Sandoz Group, and in 1982, became the Head of Finance for the Sandoz affiliates in the UK. In 1985, he was appointed Chief Financial Officer of Sandoz Corporation in New York, where he was responsible for all Sandoz Finance activities in the US. In 1990, he became Group Treasurer of Sandoz Ltd., Basel, Switzerland, and, in 1993, Head of Group Finance and Member of the Sandoz Executive Board. Following the formation of Novartis in 1996, Raymund Breu assumed his current position as Chief Financial Officer and member of the Executive Committee of Novartis. He is also a member of the Board of Directors of Swiss Re and the Swiss takeover commission.

**Juergen Brokatzky-Geiger, Ph.D.**

German, age 55

Juergen Brokatzky-Geiger graduated with a Ph.D. in chemistry from the University of Freiburg, Germany in 1982. He joined Ciba-Geigy Ltd. in 1983 as a Laboratory Head in the Pharmaceuticals Division. After a job rotation in Summit, New Jersey (US) from 1987 to 1988, he held positions of increasing responsibility in Research and Development (R&D) including Group Leader of Process R&D, Head of Process R&D, and Head of Process Development and Pilot Plant Operations. During the merger of Ciba-Geigy and Sandoz in 1996, Juergen Brokatzky-Geiger was appointed Integration Officer of Technical Operations. He later became the Head of Chemical and Analytical Development and served as the Global Head of Technical R&D from 1999 to August 2003. Juergen Brokatzky-Geiger was appointed to his present position as Head of Human Resources on September 1, 2003. He has been a member of the Executive Committee of Novartis since January 1, 2005.

**Thomas Ebeling**

German, age 48

Thomas Ebeling graduated from the University of Hamburg, Germany, with a degree in psychology. From 1987 to 1991, he held several positions of increasing responsibility at Reemstma Germany. In 1991, he joined Pepsi-Cola Germany as Marketing Director. He became Marketing Director for Germany and Austria in 1993, and was National Sales and Franchise Director for Pepsi's retail and on-premise sales from 1994. He then served as General Manager of Pepsi-Cola Germany. In 1997, Thomas Ebeling joined Novartis as General Manager of Novartis Nutrition for Germany and Austria. After serving as CEO of Novartis Nutrition worldwide, he became CEO of the Consumer Health Division. He then became Chief Operating Officer of the Pharmaceuticals Division and later CEO of the same division. In 2007 he was appointed CEO of Novartis Consumer Health. He has been a member of the Executive Committee of Novartis since 1998.

**Mark C. Fishman, M.D.**

American, age 56

Dr. Fishman graduated with a B.A. from Yale College in 1972 and an M.D. from Harvard Medical School in 1976. He was appointed President of the Novartis Institutes for BioMedical Research (NIBR) in 2002. Before joining Novartis, Dr. Fishman was Chief of Cardiology and Director of the Cardiovascular Research Center at the Massachusetts General Hospital in Boston, Massachusetts, and Professor of Medicine at Harvard Medical School. Dr. Fishman serves on several editorial boards and has worked with national policy and scientific committees including those of the US National Institutes of Health (NIH) and the Wellcome Trust. He completed his Internal Medicine residency, Chief residency and Cardiology training at the Massachusetts General Hospital. He has been honored with many awards and distinguished lectureships, and is a member of the Institute of Medicine of the National Academies (US) and Fellow of the American Academy of Arts and Sciences. He has been a member of the Executive Committee of Novartis since 2002.

**Joseph Jimenez**

American, age 48

Joseph Jimenez graduated with a B.A. degree from Stanford University in 1982 and earned an M.B.A. from the University of California, Berkeley in 1984. He began his career at The Clorox Company and later served as president of two operating divisions at ConAgra. In 1998, he joined the H.J. Heinz Company and was named President and Chief Executive Officer of the North America business. He later served from 2002 to 2006 as President and Chief Executive of Heinz in Europe. Before joining Novartis he served as a non-executive director of AstraZeneca plc from 2002 to 2007, and was an advisor for the private equity organization Blackstone Group. He joined Novartis in April 2007 as CEO of the Consumer Health Division. He was appointed to his present position as CEO of the Pharmaceuticals Division in October 2007. He has been a member of the Executive Committee of Novartis since November 1, 2007.

**Joerg Reinhardt, Ph.D.**

German, age 51

Joerg Reinhardt graduated with a Ph.D. in pharmaceutical sciences from the University of Saarbruecken, Germany in 1981. In April 2006, he became CEO of the new Novartis Vaccines and Diagnostics Division that combines the vaccines and blood-testing businesses of the former Chiron Corp. Prior to this role, Joerg Reinhardt was Head of Development at the Novartis Pharmaceuticals Division, overseeing the company's clinical, pharmaceutical, chemical and biotechnological product development, as well as drug-safety assessment and regulatory affairs. Joerg Reinhardt joined Sandoz Pharma Ltd. in 1982 and held positions of increasing responsibility in research and development for the company. In 1994, he was made Head of Development for Sandoz Pharma Ltd. After the merger that created Novartis in 1996, Joerg Reinhardt became Head of Preclinical Development and Project Management for Novartis and assumed the position of Head of Pharmaceutical Development in 1999. He chairs the Board of Directors of the Genomics Institute of the Novartis Foundation in La Jolla, California. He has been a member of the Executive Committee of Novartis since January 1, 2007.

**Andreas Rummelt, Ph.D.**

German, age 51

Andreas Rummelt graduated with a Ph.D. in pharmaceutical sciences from the University of Erlangen-Nuernberg, Germany. He joined Sandoz Pharma Ltd. in 1985 and held various positions with increasing responsibility in Development. In 1994 he was appointed Head of Worldwide Technical Research & Development, a position he retained following the merger that created Novartis in 1996. From 1999 until October 2004, Andreas Rummelt served as Head of Technical Operations of the Novartis Pharmaceuticals Division. He was appointed to his present position as CEO of Sandoz on November 1, 2004 and has been a member of the Executive Committee of Novartis since January 1, 2006.

**Thomas Wellauer, Ph.D.**

Swiss, age 52

Thomas Wellauer graduated with a Ph.D. in systems engineering and an M.S. in chemical engineering from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland. He also holds an M.B.A. from the University of Zurich. Thomas Wellauer joined Novartis in 2006 as Head of Corporate Affairs. He started his career with McKinsey and Company, becoming a Partner in 1991 and Senior Partner in 1996. In 1997, he was named CEO of the Winterthur Insurance Group, which later was acquired by Credit Suisse. At Credit Suisse he was a member of the Group Executive Board, initially responsible for the Group's insurance business before becoming CEO of the Financial Services Division. Most recently before joining Novartis, Thomas Wellauer headed and completed the Clariant Performance Improvement Program, a global turn-around project at the specialty chemicals maker. He has been a member of the Executive Committee of Novartis since January 1, 2007.



## Remuneration Report

### NOVARTIS REMUNERATION REPORT

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#### General Principles and Processes

#### Performance-Based Compensation

Novartis aspires to be an employer of choice with the ability to attract, retain and motivate the most professional and high-caliber associates around the world. Novartis compensation programs are designed to:

- Support the employer of choice aspiration;
- Align the objectives of Novartis associates with the long-term interests of the shareholders;

- Support a performance-oriented culture and meritocracy that allows Novartis to reward high-performing individuals who adhere to best business practices and whose commitment and contribution enable the Group to achieve its goal to be one of the world's most admired and respected healthcare companies; and to
- Be competitive with a relevant group of other world-class and industry peer companies who operate and compete for talent on a global basis.

Paying for performance is the guiding principle of the Novartis compensation policy. For superior performance, total compensation awarded to individual associates may reach levels comparable to the top quartile levels of compensation offered by the relevant benchmark companies.

Under these performance-dependent variable compensation plans, Novartis defines target incentive percentages (i.e. a percentage of annual base salary) for each participating associate at the start of a performance period, which is traditionally the start of a new year. In general, these target percentages are multiplied at the end of the performance period with individual payout multipliers for each associate. The size of the multiplier depends on the incentive plan, on the associate's actual performance against individual objectives as agreed to at the beginning of the performance period as well as compliance with the Novartis Values and Behaviors and on the overall performance of the Group or relevant business area.

Incentive payout multipliers usually range from 0 to 2. For exceptional performance, higher payout multipliers may apply. Such cases require the approval of the Chairman and Chief Executive Officer and, for certain executives, the approval of the Compensation Committee. All compensation programs and levels are reviewed regularly based on publicly available data as well as on analyses by independent compensation research companies and

external compensation advisors. Trends and developments in the field of compensation and corporate governance are carefully analyzed, reviewed and discussed on an ongoing basis with outside experts, accountants and consultants.

### **Performance Management Process**

Each Novartis associate is subject to a formal performance appraisal process that promotes a culture of continuous improvement, supports individuals in meeting their development aspirations and strengthens organizational capabilities. It is a core process for improving individual, team and overall business performance.

For each performance year, line managers and their direct reports jointly determine and agree upon performance measures and business objectives. These objectives are derived from the cascading of business objectives established at the Group, division, function or business area levels.

Two performance assessments are carried out each year – a mid-year and a year-end review. The reviews consist of formal meetings between each associate and his or her line manager to evaluate the associate's performance, both in light of the business objectives defined at the beginning of the year and of the Group-wide Novartis Values and Behaviors. Based on the year-end performance rating, line managers and next-level line managers determine the incentive awards for each associate under review as well as the target compensation for the coming year.

### **Share Ownership**

The Novartis Board maintains share ownership guidelines to realize the ownership philosophy among senior executives and Directors. These guidelines require a group of approximately 25 key executives to own a minimum multiple of their annual base salary in Novartis shares or options, and for all Non-Executive Directors to own a minimum number of Novartis shares. More detail is provided below under Ownership of Novartis Shares and Share Options by Executive Committee members and Ownership of Novartis Shares and Share Options by Non-Executive Directors.

### **Source of the Shares Awarded**

Novartis has used shares repurchased in the market to fulfill obligations to deliver shares as required for the variable compensation plans.

Compensation to Novartis Associates

Competitive compensation packages are designed with reference to total compensation levels for comparable positions at relevant benchmark companies.

The benchmark companies for compensation differ with and are dependent upon the nature of specific positions. For specific pharmaceutical positions, a peer group of industry competitors is considered that consists of Abbott Laboratories, Amgen, Astra-Zeneca, Bristol-Myers Squibb, Eli Lilly, GlaxoSmithKline, Johnson & Johnson, Merck, Pfizer, Roche, Sanofi-Aventis, Schering-Plough and Wyeth. For other positions, a wider group of relevant benchmark companies is considered from a variety of different industry sectors, such as fast moving consumer goods and general industry. Benchmark information is adjusted as necessary to reflect the size and scope of the respective business and the specific requirements of a particular position. Benchmark data are obtained from multiple sources and data providers, depending on the quality of their data in the relevant industries and geographies.

The Compensation Committee scrutinizes compensation data from various external compensation advisers to remain well informed about developments and best practices in the compensation area. In 2007, the Committee appointed Pearl Meyer & Partners as its independent external adviser. Pearl Meyer & Partners reports directly to the Committee and provides no other services to Novartis.

As long as an associate achieves his or her performance targets, the total amount of compensation awarded is generally comparable to the median level of compensation provided by relevant benchmark companies. In case of over- or underperformance by an associate, the actual total compensation delivered is adjusted up or down, as appropriate.

The compensation package of Novartis associates consists of an annual base compensation along with variable compensation components as described below.

#### **Base Compensation**

Base compensation is intended to give each associate a fixed salary that is not dependent upon the annual performance of the associate or of the Group. Salary levels depend upon job characteristics, market competitiveness and the associate's skills. The salary evolution depends on the associate's individual performance.

## **Variable Compensation**

Novartis has three main variable compensation plans: annual bonus plans, the Novartis Equity Plan **Select** and the Long-Term Performance Plan.

Under the Novartis Equity Plan **Select** and the Long-Term Performance Plan, all awards must be delivered in the form of equity in Novartis, except in the US where awards under the Long-Term Performance Plan may also be delivered in cash under the Deferred Compensation Plan.

### **Annual Bonus Plans**

Most associates participate in annual bonus plans. Under these plans, awards are made each year based on the associate's individual year-end performance rating as well as on the Group's or business area's performance. If an associate receives a rating below a certain threshold, no awards are granted under these plans.

Associates in certain countries and certain key executives worldwide are encouraged to receive their bonus awards fully or partially in Novartis shares instead of cash. To that end, Novartis maintains several leveraged share savings plans under which Novartis matches investments in shares after a holding period. In principle, participating associates may only participate in one of these plans in any given year.

- Shares invested in the Swiss Employee Share Ownership Plan (ESOP), which is available in Switzerland to approximately 11 000 associates, have a three-year blocking period and are matched at the end of the blocking period with one share for every two shares invested. Approximately 5 700 associates chose to participate in this plan related to bonuses paid for performance in 2007.
- In the UK, associates can invest up to 5% of their monthly salary, up to a maximum of GBP 125, in shares and may also be invited to invest all or part of their net bonus in shares. Two invested shares are matched with one share, which will vest after three years. During 2007, approximately 1 500 associates in the UK participated in these plans.
- Approximately 25 key executives worldwide were invited to participate in a five-year Leveraged Share Savings Plan (LSSP) as part of compensation for performance in 2007. Shares are invested in this plan for five years. At the end of the investment period, Novartis matches the invested shares at a ratio of 1:1 (i.e. one share awarded for each invested share).

In general, no shares are matched under these plans if an associate leaves Novartis prior to expiration of the blocking period for reasons other than retirement, disability or death.

### **Novartis Equity Plan **Select****

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Awards under this plan may be granted each year based on the associate's individual year-end performance rating, talent rating and Group or business area performance. If an associate receives a rating below a certain threshold, no awards are granted under the plan.

Participants in this plan can elect to receive their incentive in the form of shares, share options, or a combination of both. Each share option is tradable, expires on its tenth anniversary and is exercisable to receive one share (1:1). The exercise price equals the market price of the underlying share at the grant date.

If associates in North America choose to receive the Select incentive amount (or part of it) in tradable share options on American Depository Shares, then the resulting number of share options is determined by dividing the respective Select incentive amount, by a value that equals 95% of the IFRS value of the options on American Depository Shares. For associates in other countries, the divisor equals 90% of the IFRS value of options on Novartis shares.

Shares and tradable share options have a vesting period of two years in Switzerland and three years in other countries. As a result, if a participant leaves Novartis, unvested shares or options are forfeited, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment).

A total of 10 278 participants received a total of 20.4 million tradable share options and 3 096 069 restricted shares under the Novartis Equity Plan Select, for their performance in 2007, representing a participation rate of approximately 10% of all full-time equivalent associates worldwide. Approximately 8% of the total equity value awarded under the plan was granted to members of the Executive Committee.

As of December 31, 2007, a total of 63.3 million share options were outstanding that had been granted to associates, covering an equal number of shares and corresponding to 2.6% of the total number of outstanding Novartis shares (excluding treasury shares).

### **Long-Term Performance Plan**

The Novartis Long-Term Performance Plan rewards key executives who have a significant impact on the long-term success of the Group.

Performance is measured against annual Economic Value Added targets (EVA, as defined in the Novartis accounting manual). Any actual awards will depend on the Group's overall accumulated performance over a three-year period.

If the actual performance of the Group is below a threshold level or the participant leaves during the performance period for reasons other than retirement, disability or death, then generally no shares are awarded.

The Compensation Committee amended the Long-term Performance Plan in 2005 to make Group EVA, as opposed to division or business area EVA, the relevant criterion and to make the performance period three years. The first delivery of shares, if any, under the amended plan will take place in January 2009 based on the Group EVA achievement over the performance period 2006 to 2008.

For the performance period ended December 31, 2007, approximately 125 key executives were granted performance shares; the actual awards to members of the Executive Committee are disclosed in the Executive Committee Compensation table below.

Approximately 125 key executives (for the performance period 2007 to 2009) and 120 key executives (for the performance period 2008 to 2010) have been granted Novartis performance shares. These grants are dependent upon Group EVA achievements and may or may not lead to actual awards in January 2010 and January 2011 respectively.

### **Special Share Awards**

In addition to base and variable compensation described above, selected associates may receive extraordinary or annual awards of restricted or unrestricted shares. These special share awards are discretionary, providing flexibility to reward particular achievements or exceptional performance and retain key contributors.

Restricted special share awards generally have a five-year vesting period. If a participant leaves Novartis for reasons other than retirement, disability or death, the participant will generally forfeit unvested shares. Approximately 360 associates at different levels of the organization were awarded restricted shares in 2007.

## Contracts with Members of the Executive Committee

In 2007, in accordance with evolving best practices in corporate governance, Novartis adopted a principle that new employment contracts with members of the Executive Committee should contain:

- No unusually long notice periods;
- No change-of-control clauses;
- No severance payments.

As Novartis is determined to apply this principle also to all existing contracts with members of the Executive Committee, a significant number of these contracts were recently amended. To align the remaining contracts, Novartis has given notice to those members of the Executive Committee whose contracts still provide for a notice period of 36 months (in all three cases) or a change-of-control clause (in two of these cases, each extending the 36 months notice period by 24 months in such event).

The employment contract with the Chairman and Chief Executive Officer contains a severance payment of USD 53 million (based on the same year-end spot exchange rate of CHF 1.135 = USD 1.00) and a payment in case of a change-of-control event of USD 132 million (based on the same year-end spot exchange rate). These two payments are mutually exclusive. The employment contract will expire at the Annual General Meeting in 2009. The Lead Director on behalf of the independent Directors has entered into discussions with Daniel Vasella for a new contract.

## Executive Committee Compensation

### General Principles

The compensation policies, performance management process and incentive plans described above apply equally to members of the Executive Committee, including the Chairman and Chief Executive Officer.

Decisions concerning the compensation of Executive Committee members are based on an evaluation of the individual performance of the member as well as on the performance of their respective business area or function. The Compensation Committee considers the achievement of both short-term and long-term performance targets, including net sales growth, economic value creation (operating and net income, earnings per share and economic value added) and market share growth as well as ongoing efforts to optimize organizational effectiveness and productivity.



## **Compensation of the Chairman and Chief Executive Officer**

### **General Process**

For each year, the Chairman and Chief Executive Officer presents his proposed individual objectives and targets to the Board. The Board reviews and discusses this proposal, and, after any desired amendments, gives its approval. In particular, the Board ensures that the Chairman and Chief Executive Officer's objectives are in line with the Group's goals of fostering sustainable long-term performance and that they do not sacrifice for short-term financial objectives but support long-term business objectives in the interest of the Group and its shareholders.

Near the end of each year, the Chairman and Chief Executive Officer prepares a self-appraisal, which is discussed with the Lead Director and the rest of the Board. The Lead Director also holds individual discussions with all Directors about the Chairman and Chief Executive Officer's performance.

In January, the Board approves the audited financial results, evaluates the extent to which targeted financial objectives for the past year have been achieved and compares these results with peer industry companies, taking into account general financial criteria and industry developments.

In a private session, limited to the independent Non-Executive Directors, the overall performance of the Chairman and Chief Executive Officer is discussed, after which the independent Non-Executive Directors share their appraisal with him.

Afterwards, the Compensation Committee decides upon the total remuneration package for the previous year and the target compensation (base and variable compensation as well as special share awards) for the coming year, taking into account all relevant factors including available benchmark information.

### **Targets for the Variable Compensation of the Chairman and Chief Executive Officer**

For short-term performance measurement, the financial criteria typically include net sales growth, operating income, net income, earnings per share and market share. For long-term performance measurement, the financial target criterion is Economic Value Added (EVA, as defined in the Novartis accounting manual). The Compensation Committee measures the Chairman and Chief Executive Officer's performance relative to predetermined targets for these short- and long-term criteria.

Non-financial targets may typically include the following objectives: successful acquisitions, disposals and licensing transactions, Research & Development performance, product launches, successful implementation of growth or cost containment initiatives, or the successful launch of new sites or operations.

### **Compensation of the Chairman and Chief Executive Officer in 2007**

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The Compensation Committee met in a separate session with external advisors but without the Chairman and Chief Executive Officer on January 10, 2008, to determine the amount of his compensation for 2007.

The Compensation Committee based its decision on its assessment of the Chairman and Chief Executive Officer's performance versus his financial and non-financial targets set by the Board taking into account the year-end feedback collected by the Lead Director from each independent Director. The results were assessed from a quantitative and qualitative perspective. Moreover, given its conviction that judgment should be applied in addition to focusing on metrics when assessing a senior executive's performance, the Compensation Committee also applied discretion in its assessment this year.

Taking the above into consideration, the Compensation Committee concluded that, with the exception of certain targets related to the Pharmaceuticals Division, the Chairman and Chief Executive Officer met or exceeded all his financial and non-financial targets.

Despite clear set-backs in the US, which is its biggest market, the Pharmaceuticals Division showed dynamic growth and met or exceeded its financial targets in all other regions. In clinical development the portfolio was expanded to 140 projects, more than ever before. Also, the Pharmaceuticals Division obtained 15 positive regulatory decisions out of a total of 17, the exceptions being *Galvus* and *Prexige* in the US.

Outside the Pharmaceuticals Division, the Compensation Committee particularly welcomed the substantial growth in all other divisions (Sandoz, Vaccines & Diagnostics and Consumer Health), each of them exceeding their respective financial targets. Further, the successful disposal of Gerber and Medical Nutrition led to Novartis becoming a pure healthcare company while at the same time improving its financial strength. In addition, the Compensation Committee noted the excellent retention rate within Novartis of over 95% of high performers and high potential associates.

The compensation granted by the Compensation Committee to the Chairman and Chief Executive Officer for 2007 is detailed in the table below. Compared to the compensation awarded in 2006 (excluding shares matched under the Leveraged Share Savings Plans) it decreased by 31%, respectively 33% (when including shares matched under the Leveraged Share Savings Plans).

## **Compensation of Other Executive Committee Members**

### **General Process**

In January, the Board meets with the Chairman and Chief Executive Officer to review and discuss the performance of other members of the Executive Committee for the previous year, taking into account the audited financial results as well as the level of achievement of individual financial and non-financial targets.

In a separate session, the Compensation Committee decides, in the presence of the Chairman and Chief Executive Officer and based on his recommendations, on the variable compensation for other members of the Executive Committee and other key executives for the previous year. At the same meeting, the Compensation Committee decides on the target compensation packages for these executives for the coming year.

In addition to the full-year assessment, the mid-year performance of other members of the Executive Committee is reviewed in June. At the same time, the Board also carries out a mid-year review of the performance of the individual businesses.

At any point during the year, special share awards may be granted for performance or retention reasons.

### **Compensation of Other Executive Committee Members in 2007**

At its meeting on January 10, 2008, the Compensation Committee decided on the amounts of variable compensation for 2007 for the other members of the Executive Committee by applying the principles described above. The specific compensation decision made for each member of the Executive Committee reflects their achievements against the financial and non-financial performance targets established for each of them at the beginning of the year.

### **Disclosure Principles for Executive Committee Compensation**

The table below discloses the compensation granted to members of the Executive Committee for 2007. The following paragraphs describe the principles underlying the data in the table.

### **Alignment of Reporting and Performance**

The table synchronizes the reporting of annual compensation with the performance in that specific year, i.e. all amounts awarded for performance in 2007 are included in full.

### **Valuation Principles**

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Shares and share options under the compensation plans are generally granted with a vesting (1) period. In addition, associates in Switzerland, including members of the Executive Committee, may irrevocably block (2) shares received under any compensation plan for up to 10 years.

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(1) Vesting refers to the waiting period under an equity-based incentive plan that must expire before the associate becomes irrevocably entitled to the shares or share options involved. If an associate leaves before the end of the vesting period for reasons other than retirement, disability or death, the associate will generally forfeit his or her rights to unvested shares or share options.

(2) Blocking refers to the ability of associates in Switzerland to irrevocably commit not to sell their shares for a period of up to ten years from the date of grant. Novartis encourages associates to block their shares because doing so aligns the associates' interests with those of shareholders.

The Compensation Committee believes that such restrictions affect the value of the shares and share options.

The Swiss Federal Tax Administration, in its Kreisschreiben Nr. 5, provides for a methodology pursuant to which unvested or blocked shares or share options shall be valued with a discount for each year they are unvested or blocked. In addition, for the valuation of share options, the Swiss Tax Authorities apply in a standing practice for Novartis (since 1997) an option valuation model based on Black-Scholes reflecting Novartis dividend assumptions.

In the Compensation Committee's view, this is the appropriate methodology to report the economic value of shares and share options for executive compensation under Swiss law because, unlike IFRS, it takes into account that executives may only dispose of their shares or options following the expiry of the relevant vesting or blocking period. The application of this methodology to determine the value of the shares and share options granted for the year 2007 is explained in footnote 9 to the table below.

See note 28 to the Group's consolidated financial statements for information on executive and director compensation as calculated under IFRS.

### **Loans and Other Payments to Members of the Executive Committee**

#### **Loans to Members of the Executive Committee**

No loans were granted to current or former members of the Executive Committee during 2007. No such loans were outstanding as of December 31, 2007.

#### **Other Payments to Members of the Executive Committee**

During 2007, no payments (or waivers of claims) other than those set out in the Executive Compensation table below were made to current members of the Executive Committee or to persons closely linked ~~(to)~~ them.

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(3) Persons closely linked are (i) their spouse, (ii) their children below age 18, (iii) any legal entities that they own or otherwise control, and (iv) any legal or natural person who is acting as their fiduciary.

**Payments to Former Members of the Executive Committee**

During 2007, no payments (or waivers of claims) were made to former members of the Executive Committee or to persons closely linked (3) to them.

## EXECUTIVE COMMITTEE COMPENSATION FOR PERFORMANCE IN 2007 (1)

| Name   | Currency | Base Compensation       |                         | Variable Compensation              |  |                                      |   | Other Compensation                                      |  |                          | Total<br>(amount)<br>(9)    | Future LSSP Match Shares<br>(10)<br>(number) | Total Including Future LSSP Match<br>(11,12)<br>(amount) |
|--|----------|-------------------------|-------------------------|------------------------------------|--|--------------------------------------|---|---|--|--------------------------|-----------------------------|--|--|
|  |          | Cash<br>(amount)<br>(1) | Cash<br>(amount)<br>(2) | Bonus<br>Shares<br>(number)<br>(3) | Equity Plan<br>Shares<br>(number)<br>(4) | Select<br>Options<br>(number)<br>(5) | Long-Term<br>Performance<br>Plan<br>Shares<br>(number)<br>(6) | Special<br>Share<br>Awards<br>Shares<br>(number)<br>(7) | Pension<br>Benefits<br>(amount)<br>(8) | Other<br>(amount)<br>(8) |                             |  |  |
|  |          |                         |                         |                                    |  |                                      |   |   |  |                          |                             |  |  |
| Daniel Vasella<br>(Chairman and<br>Chief Executive<br>Officer) | CHF      | 3 000 000               | 0                       | 70 258                             | 0  | 1 290<br>631                         | 45 300  | 53 996  | 150 970                                | 166 630                  | 14 524<br>233               | 70 258                                       | 17 030<br>00   |
| Urs Baerlocher<br>(retired<br>August 31, 2007)                 | CHF      | 560 000                 | 0                       | 9 444                              | 18 887                                   | 0                                    | 5 766   | 0   | 61 292                                 | 0                        | 1 835<br>054                | 0  | 1 835<br>05  |
| Raymund Breu   | CHF      | 1 098 504               | 0                       | 17 221                             | 0  | 421 798                              | 8 329   | 0   | 98 361                                 | 0                        | 3 747<br>235                | 17 221                                       | 4 200<br>48  |
| Juergen<br>Brokatzky-Geiger                                    | CHF      | 630 920                 | 0                       | 8 903                              | 0  | 109 016                              | 4 783   | 0   | 185 628                                | 12 823                   | 1 984<br>822                | 8 903  | 2 411<br>93  |
| Paul Choffat<br>(retired May 11,<br>2007)                      | CHF      | 298 392                 | 273 333                 | 0                                  | 0  | 0                                    | 0   | 14 307  | 60 393                                 | 2 594<br>732             | 4 226<br>909                | 0  | 4 226<br>90  |
| Thomas Ebeling   | CHF      | 1 130 004               | 440 800                 | 0                                  | 17 203                                   | 105 335                              | 12 798  | 0   | 153 115                                | 98 339                   | 3 665<br>933                | 0  | 3 665<br>93  |
| Mark C. Fishman  | USD      | 925 000                 | 15 458                  | 13 372                             | 34 097                                   | 184 870                              | 8 763   | 0   | 160 834                                | 106 509                  | 4 689<br>956                | 13 372                                       | 5 260<br>11  |
| Joseph Jimenez<br>(joined April 16,<br>2007)                   | CHF      | 587 503                 | 246 750                 | 3 853                              | 0  | 157 266                              | 4 531   | 0   | 193 907                                | 348 226                  | 2 414<br>659                | 3 853  | 2 599<br>07  |
| Joerg Reinhardt  | CHF      | 915 004                 | 0                       | 17 237                             | 57 456                                   | 0                                    | 6 947   | 10 000  | 166 206                                | 29 522                   | 5 080<br>767                | 17 237                                       | 5 690<br>24  |
| Andreas Rummelt  | CHF      | 906 674                 | 0                       | 14 066                             | 46 886                                   | 0                                    | 6 871   | 0   | 169 552                                | 10 257                   | 4 872<br>511                | 14 066                                       | 5 540<br>73  |
| Thomas Wellauer  | CHF      | 616 670                 | 0                       | 8 712                              | 0  | 106 693                              | 4 682   | 0   | 167 864                                | 8 880                    | 1 848<br>447                | 8 712  | 2 260<br>42  |
| <b>Total (13)</b>  | CHF      | <b>10 853 488</b>       | <b>979 430</b>          | <b>163 066</b>                     | <b>174 529</b>                           | <b>609</b>                           | <b>108 770</b>  | <b>78 303</b>   | <b>256</b>                             | <b>199</b>               | <b>49 827</b><br><b>590</b> | <b>153 622</b>                               | <b>55 810</b><br><b>69</b>                               |

- (1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not considered compensation.
- (2) Participants elected to invest some or all of the value of their bonuses in the five-year Leveraged Share Savings Plan (LSSP) rather than to receive cash or to invest in the Swiss three-year Employee Share Ownership Plan (ESOP; if eligible). Daniel Vasella, Raymund Breu and Joerg Reinhardt have voluntarily and irrevocably extended the five-year blocking period of these shares to ten years; Urs Baerlocher has blocked his bonus award in unrestricted shares for ten years.
- (3) Thomas Ebeling has voluntarily and irrevocably blocked these shares (including the two-year vesting period) for ten years and Joerg Reinhardt for five years; Urs Baerlocher has blocked his Select share award for ten years.
- (4) Novartis employee share options are tradable. Options granted under the Novartis Equity Plan Select outside North America will expire on January 10, 2018, have a two-year vesting period in Switzerland (three years in other countries) and have an exercise price of CHF 64.05 per share (the closing price of Novartis shares on the grant date of January 11, 2008). Options on ADSs granted to participants in North America will expire on January 10, 2018, have a three-year vesting period and an exercise price of USD 57.96 per ADS (the closing price of Novartis ADSs on the grant date of January 11, 2008).

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- (5) Awarded under the Long-Term Performance Plan based on the achievement of Economic Value Added (EVA) objectives over the performance period ended December 31, 2007. Daniel Vasella, Urs Baerlocher, Raymund Breu and Joerg Reinhardt have voluntarily and irrevocably blocked these shares for ten years, Thomas Wellauer for five years and Joseph Jimenez for three years.
- (6) Consists of unrestricted share awards to Daniel Vasella and Paul Choffat, and a restricted share award to Joerg Reinhardt with a five-year cliff vesting period. Daniel Vasella and Joerg Reinhardt have voluntarily and irrevocably blocked these shares for ten years.
- (7) Service costs of pension and post-retirement healthcare benefits accumulated in 2007, and employer contributions to defined contribution pension plans in 2007.
- (8) Includes perquisites and other compensation paid during the year; does not include cost allowances and tax-equalization payments regarding the international assignment of Joerg Reinhardt.
- (9) Values of shares granted are discounted by 6% per year depending on the length of the combined vesting and blocking period. For example, the value of a share award subject to a two-year vesting/blocking period calculated in accordance with the described methodology equals 89% of its market value at the grant date. The value of a share award with a combined vesting/blocking period of ten years equals 55.839% of its market value at the grant date. The closing share price on the grant date (January 11, 2008) was CHF 64.05 per Novartis share and USD 57.96 per ADS.

The values of share options granted are reported based on the valuation principles contained in a tax ruling from the Swiss tax authorities, reflecting the principles as disclosed in the aforementioned Kreisschreiben Nr. 5. According to this methodology, tradable share options under the Equity Plan Select with a vesting period of two years have a value of CHF 3.88 per option at grant. The corresponding value for share options on ADSs with a vesting period of three years is USD 3.98 per option.

- (10) Reflects shares to be awarded in the future if the associate remains with the Group. The members of the Executive Committee were invited to invest their bonus awards for 2007 in the leveraged share saving plans either the three-year Swiss Employee Share Ownership Plan (ESOP) or the five-year Leveraged Share Savings Plan (LSSP) to further align their interest with those of the shareholders. Under the plan rules, participants will receive additional shares ( matching shares ) after the expiration of either the three- or five-year vesting period. Under the five-year LSSP plan, each share invested entitles the participant to receive one matching share. Under the three-year ESOP plan, for every two shares invested, the participant receives one matching share. If a participant leaves prior to the expiration of the vesting period, in general no matching shares will be awarded. Raymund Breu has voluntarily and irrevocably blocked these matching shares for 15 years (including the five-year vesting period); Daniel Vasella and Joerg Reinhardt have voluntarily and irrevocably blocked these matching shares for ten years (including the five-year vesting period).
- (11) The values of shares and options reflected in this column have been calculated using the valuation methodology described in footnote 9. Regarding the valuation of matching shares (please see footnote 10) the following applies: If a member of the Executive Committee has chosen to irrevocably block the shares to be received in the future under the five-year Leveraged Share Savings Plan for an additional 10 years, (leading to a combined vesting/ blocking period of 15 years), then the value of the matching shares reflected in the table will be 41.727% of the share price on the grant date. The closing share price on the grant date (January 11, 2008) was CHF 64.05 per Novartis share and USD 57.96 per ADS.
- (12) All amounts are gross amounts (i. e. including social security due by the employee). The employer's share of social security contributions is not included.
- (13) Amounts in USD for Mark Fishman were converted at a rate of CHF 1.199802 = USD 1.00, which is the same average foreign exchange rate used in the Group's consolidated financial statements.

## Non-Executive Director Compensation

### General Principles

Based on a proposal made by the Compensation Committee, the Board determines the compensation of Non-Executive Directors. They receive an annual fee in an amount that varies with the responsibilities of each Director. They do not receive additional fees for attending meetings or acting as committee chairs.

Directors can choose to receive the annual fee in cash, shares or a combination. Directors cannot get share options.

### Contracts with Non-Executive Directors

There are no service contracts with any Non-Executive Director other than with Alexandre F. Jetzer. The contract with Alexandre F. Jetzer does not provide for any severance payments or for benefits upon termination.

### Loans and Other Payments to Non-Executive Directors

#### **Loans to Non-Executive Directors**

No loans were granted to current or former Non-Executive Directors during 2007. No such loans were outstanding as of December 31, 2007.

#### **Other Payments to Non-Executive Directors**

During 2007, no payments (or waivers of claims) other than those set out in the Executive Compensation table above were made to current Non-Executive Directors or to persons closely linked to them (see definition on page 133).

#### **Payments to Former Non-Executive Directors**

During 2007 no payments (or waivers of claims) were made to former Non-Executive Directors or to persons closely linked to them (see definition on page 133), except for CHF 63 192 that was paid to the Honorary Chairman.

### Compensation to Non-Executive Directors in 2007 (1)

|   | Annual Cash<br>Compensation<br>(CHF) | Shares<br>(number) | Total (2)<br>CHF |
|---|--------------------------------------|--------------------|------------------|
| Ulrich Lehner<br>Vice Chairman<br>Lead Director<br>Chairman s Committee (Member)<br>Compensation Committee (Member)<br>Audit and Compliance Committee (Chair)<br>Corporate Governance and Nomination Committee (Member) | 656 250                              | 5 405              | 1 050 005        |
| Hans-Joerg Rudloff<br>Vice Chairman<br>Chairman s Committee (Member)<br>Compensation Committee (Chair),<br>Audit and Compliance Committee (Member)<br>Corporate Governance and Nomination Committee (Member)            | 789 890                              | 0                  | 789 890          |
| Peter Burckhardt<br>Audit and Compliance Committee (Member)   | 16 875                               | 6 178              | 334 155          |
| Srikant Datar<br>Audit and Compliance Committee (Member)  | 264 375                              | 2 549              | 450 070          |
| William W. George<br>Chairman s Committee (Member)<br>Compensation Committee (Member)<br>Corporate Governance and Nomination Committee (Chair)  | 150 050                              | 6 177              | 600 045          |
| Alexandre F. Jetzer (3)<br>Pierre Landolt<br>Corporate Governance and Nomination Committee (Member)   | 10 396                               | 4 805              | 205 858          |
| Andreas von Planta<br>Audit and Compliance Committee (Member)   | 128 401                              | 4 036              | 422 424          |
| Wendelin Wiedeking<br>Rolf M. Zinkernagel<br>Corporate Governance and Nomination Committee (Member)   | 323 045                              | 2 060              | 435 188          |
|   | 112 493                              | 3 532              | 369 800          |
|   | 423 478                              | 3 569              | 641 781          |
| <b>Total</b>  | <b>2 875 253</b>                     | <b>38 311</b>      | <b>5 299 216</b> |

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not compensation.

(2) A Non-Executive Director who is tax resident of Switzerland can voluntarily and irrevocably choose to block the shares. In 2007, Peter Burckhardt blocked his shares for six years, Alexandre F. Jetzer for ten years, Andreas von Planta for five years and Rolf M. Zinkernagel for three years. The value of the shares reflected in this table have been calculated using the valuation methodology described under Disclosure Principles for Executive Committee Compensation Valuation Principles.

(3) In addition, Alexandre F. Jetzer was paid CHF 300 000 for consulting services.

## Ownership of Novartis Shares and Share Options by Executive Committee Members

### Ownership Guidelines

The Board requires Executive Committee members to own at least a certain multiple of their base salary in Novartis shares or vested tradable share options. The multiple is five for the Chairman and Chief Executive Officer and three for other Executive Committee members. Executive Committee members are given three years from the date of nomination to comply with the minimum shareholding requirements. In the event of a substantial drop in the share price, the Board may, at its discretion, extend that time period. As of January 11, 2008, all Executive Committee members who have served at least three years on the Executive Committee, complied with the share ownership guidelines.

### Shares and Share Options Owned

The total number of vested and unvested Novartis shares (excluding unvested matching shares from leveraged share savings plans) and share options owned by members of the Executive Committee as of January 11, 2008 is shown in the table below.

As of January 11, 2008, no member of the Executive Committee together with persons closely linked to them (see definition on page 133) owned 1% or more of the outstanding shares of Novartis, either directly or through share options.

### Shares Owned by Executive Committee Members

|                          | Number of Shares Owned (1) |
|--------------------------|----------------------------|
| Daniel Vasella           | 2 020 319                  |
| Raymund Breu             | 386 527                    |
| Juergen Brokatzky-Geiger | 89 488                     |
| Thomas Ebeling           | 277 843                    |
| Mark C. Fishman          | 232 640                    |
| Joseph Jimenez           | 13 164                     |
| Joerg Reinhardt          | 355 965                    |
| Andreas Rummelt          | 233 257                    |
| Thomas Wellauer          | 33 252                     |
| <b>Total</b>             | <b>3 642 455</b>           |

(1) Includes holdings of persons closely linked to members of the Executive Committee (see definition on page 133).

### Share Options Owned by Executive Committee Members

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|                          | Number of Share Options Owned (1) |                  |                |                  |                |                | Other            | Total |
|--------------------------|-----------------------------------|------------------|----------------|------------------|----------------|----------------|------------------|-------|
|                          | 2008                              | 2007             | 2006           | 2005             | 2004           |                |                  |       |
| Daniel Vasella           | 1 290 631                         | 802 855          | 0              | 1 387 790        | 103 808        | 0              | 3 585 084        |       |
| Raymund Breu             | 421 798                           | 479 929          | 416 667        | 496 381          | 324 556        | 0              | 2 139 331        |       |
| Juergen Brokatzky-Geiger | 109 016                           | 55 130           | 47 620         | 34 127           | 9 559          | 0              | 255 452          |       |
| Thomas Ebeling           | 105 335                           | 317 529          | 0              | 0                | 0              | 0              | 422 864          |       |
| Mark C. Fishman          | 184 870                           | 142 724          | 124 876        | 151 659          | 112 932        | 254 748        | 971 809          |       |
| Joseph Jimenez           | 157 266                           | 0                | 0              | 0                | 0              | 0              | 157 266          |       |
| Joerg Reinhardt          | 0                                 | 158 787          | 105 687        | 0                | 48 933         | 0              | 313 407          |       |
| Andreas Rummelt          | 0                                 | 0                | 0              | 0                | 0              | 0              | 0                |       |
| Thomas Wellauer          | 106 693                           | 0                | 0              | 0                | 0              | 0              | 106 693          |       |
| <b>Total</b>             | <b>2 375 609</b>                  | <b>1 956 954</b> | <b>694 850</b> | <b>2 069 957</b> | <b>599 788</b> | <b>254 748</b> | <b>7 951 906</b> |       |

(1) Share options disclosed for a specific year were granted under the Novartis Equity Plan. The column "Other" refers to options granted in 2003 or earlier, and to options bought by the members of the Executive Committee or persons closely linked to them on the market (see definition on page 133).

**Terms of Options Granted to Members of the Executive Committee**

The share options granted to the members of the Executive Committee under the share-based compensation plans are exercisable for one share each (1:1). The terms of the options granted since 2004 are shown in the table:

| <b>Grant Year</b> | <b>Exercise Price<br/>(CHF/USD)</b> | <b>Vesting (years)<br/>(CH/US)</b> | <b>Term<br/>(years)</b> |
|-------------------|-------------------------------------|------------------------------------|-------------------------|
| 2008              | 64.05/57.96                         | 2/3                                | 10                      |
| 2007              | 72.85/58.38                         | 2/3                                | 10                      |
| 2006              | 71.30/54.70                         | 2/3                                | 10                      |
| 2005              | 57.45/47.84                         | 2/3                                | 10                      |
| 2004              | 57.45/46.09                         | 2/3                                | 10                      |

**Ownership of Novartis Shares and Share Options by Non-Executive Directors****Ownership Guidelines**

Non-Executive Directors are required to own at least 5 000 Novartis shares within three years after joining the Board. As of December 31, 2007, all Non-Executive Directors who have served at least three years on the Board complied with these share ownership guidelines.

**Shares and Share Options Owned**

The total number of vested and unvested shares and share options owned by Non-Executive Directors and persons closely linked to them as of January 11, 2008 is shown in the tables:

|                     | <b>Number of Shares Owned (1)</b> |
|---------------------|-----------------------------------|
| Ulrich Lehner       | 22 193                            |
| Hans-Joerg Rudloff  | 109 791                           |
| Peter Burckhardt    | 19 052                            |
| Srikant Datar       | 11 952                            |
| William W. George   | 125 042                           |
| Alexandre F. Jetzer | 75 335                            |
| Pierre Landolt      | 19 709                            |
| Andreas von Planta  | 104 238                           |
| Wendelin Wiedeking  | 19 118                            |
| Marjorie M. Yang    | 3 800                             |
| Rolf M. Zinkernagel | 22 800                            |
| <b>Total</b>        | <b>533 030</b>                    |

(1) Includes holdings of persons closely linked to Non-Executive Directors (see definition on page 133).

|                     | Number of Share Options Owned                    |  | Total          |
|---------------------|--|--|----------------|
|                     | Granted by<br>Novartis in<br>2002 or earlier (1) | Other Share Options<br>Acquired in the Market<br>(2) |                |
| Ulrich Lehner       | 0  | 0  | 0              |
| Hans-Joerg Rudloff  | 24 570   | 0  | 24 570         |
| Peter Burckhardt    | 0  | 0  | 0              |
| Srikant Datar       | 10 000   | 0  | 10 000         |
| William W. George   | 44 835   | 0  | 44 835         |
| Alexandre F. Jetzer | 32 214   | 0  | 32 214         |
| Pierre Landolt      | 24 191   | 0  | 24 191         |
| Andreas von Planta  | 0  | 0  | 0              |
| Wendelin Wiedeking  | 0  | 0  | 0              |
| Marjorie M. Yang    | 0  | 0  | 0              |
| Rolf M. Zinkernagel | 23 597   | 0  | 23 597         |
| <b>Total</b>        | <b>159 407</b>                                   | <b>0</b>   | <b>159 407</b> |

(1) The last year in which Novartis granted share options to Non-Executive Directors was in 2002. In 2002, Novartis granted 79 087 share options to Non-Executive Directors at an exercise price of CHF 62 and a term of 9 years.

(2) Includes holdings of persons closely linked to Non-Executive Directors (see definition on page 133).

As of January 11, 2008, none of the Non-Executive Directors together with persons closely linked to them (see definition on page 133) owned 1% or more of outstanding shares of Novartis, either directly or through share options.

## Pensions and Healthcare Plans

### General Policy

Pension benefits at Novartis are generally designed to provide a safety net against financial hardship that may result from disability or death as well as to provide a reasonable level of retirement income reflecting the number of years of service with Novartis. As a general policy, the level of pension benefits provided to associates is country specific and is influenced by local market practice and regulations. Since a significant number of associates are employed either in Switzerland or the US, the pension and healthcare benefits in those countries are described in more detail below.

### Swiss Pension Plans

#### **Swiss Pension Fund**

The Swiss Pension Fund of Novartis operates a defined benefit plan that provides retirement benefits and risk insurance for death and disability. The Swiss Pension Fund is funded by contributions from Group companies and the insured associates. The Swiss Pension Fund insures remuneration up to a maximum base salary of CHF 220 000 per year, reduced with an offset of 30% of salary up to a maximum of CHF 24 120. Bonuses of associates with base salaries below CHF 220 000 are insured through a defined contribution incentive/bonus pension plan, which is financed through contributions by Novartis and the insured associates.

#### **Swiss Management Pension Fund**

The Swiss Management Pension Fund is essentially a defined contribution plan that also provides retirement benefits and risk insurance for death and disability for components of remuneration in excess of the maximum insurable amount of base salary described in the previous paragraph. The Swiss Management Pension Fund insures base salary above CHF 220 000, and bonus, up to an aggregate maximum of CHF 795 600; it is funded through contributions by Novartis and the insured associates.

### US Pension Plans

#### **US Defined Benefit Plan**

The pension plan for certain US-based associates of Novartis Corporation and its US affiliates is a funded, tax-qualified, non-contributory defined benefit pension plan. The amount of annual earnings covered by the pension plan is generally equal to the associate's base salary and annual bonus. The amount of annual earnings that may be considered in calculating benefits under this pension plan is limited by law (in 2007: USD 225 000). Novartis Corporation and its US affiliates also maintain various unfunded supplemental pension plans to cover associates for amounts over and above this limitation. The defined benefit pension plans were closed for new entrants in 2003 and 2005 and as from January 1, 2006, new US-based associates all participate in the US defined contribution plans described below.

### **US Defined Contribution Plans**

Associates of a Group company located in the US generally are eligible to participate in tax-qualified defined contribution plans in which they may contribute a portion of their annual compensation (subject to the annual limitation described above) and receive a matching contribution from the company that is generally USD 1 for each USD 1 contributed by the participant. Associates can receive up to 6% of their base salary and annual bonus as employer contributions.

In addition, certain Group companies in the US sponsor defined contribution plans, with contributions ranging from 3% to 10% of annual covered compensation. Associates who still accrue service years in the US defined benefit plan do not receive such company contributions.

Novartis Corporation and its US subsidiaries also maintain various unfunded supplemental defined contribution plans to cover associates for amounts over and above the USD 225 000 limitation.

### **Healthcare Plans**

In Switzerland, Novartis does not provide healthcare benefits to associates. In other countries, healthcare plans have been established in accordance with local market practices.

In the US, all Group companies offer associates healthcare benefits that are subsidized by the company. Certain Group companies also provide contributory post-retirement medical programs that complement US government-provided Medicare.

### **Benefits to the Members of the Executive Committee**

The members of the Executive Committee (with the exception of Mark C. Fishman) participate in the same Swiss pension plans as other associates employed in Switzerland. The Swiss Pension Fund aims to provide a maximum pension of 60% of the insured remuneration under its plan. For participants in the Swiss Management Pension Fund, Novartis pays 20% of the insured remuneration as an additional contribution.

The US defined benefit pension formula that applies to Mark C. Fishman is a pension equity plan (PEP) formula that applies to other participating US associates. Benefits under the PEP formula are based on:

- The associate's highest average earnings for a five-calendar year period during the last 10 calendar years of service with Novartis; and
- The associate's accumulated PEP credits (expressed as a percentage of final average earnings, and ranging from 2% to 15% for each year of service based on the associate's attained age and accumulated service in a particular year).

Benefits accrued under the PEP plan are payable after retirement in the form of an annuity or a lump sum. The US defined contribution plan that applies to Mark C. Fishman is the same plan that applies to other participating US associates; however, the additional company contribution does not apply to him.

In 2007, contributions to defined benefit plans amounted to USD 14 760 for Mark C. Fishman and CHF 162 937 for other members of the Executive Committee. For defined contribution plans, the contribution amounted to USD 55 655 for Mark C. Fishman and CHF 1 013 663 for other members of the Executive Committee.

#### **Executive Committee Accumulated Pension Benefits**

The pension benefits accumulated by Executive Committee members in the defined benefit plans as of December 31, 2007, as well as the employer pension contributions in 2007, are summarized in the following table:

|                          | Currency | Accumulated<br>Benefit<br>in Defined<br>Benefit Plans (1) | Employer<br>Contributions<br>to Defined<br>Benefit Plans | Employer<br>Contributions<br>to Defined<br>Contribution Plans |
|--------------------------|----------|---|--|---|
| Daniel Vasella           | CHF      | 86 304  | 18 632   | 125 340   |
| Urs Baerlocher           | CHF      | 117 672   | 12 422   | 83 560  |
| Raymund Breu             | CHF      | 106 896   | 18 632   | 125 340   |
| Juergen Brokatzky-Geiger | CHF      | 90 459  | 18 609   | 120 476   |
| Paul Choffat (2)         | CHF      | 98 676  | 7 754  | 41 780  |
| Thomas Ebeling           | CHF      | 70 116  | 18 632   | 115 120   |
| Mark C. Fishman          | USD      | 91 003  | 14 760   | 55 655  |
| Joseph Jimenez           | CHF      | 1 968   | 12 406   | 57 187  |
| Joerg Reinhardt          | CHF      | 78 696  | 18 632   | 115 120   |
| Andreas Rummelt          | CHF      | 87 168  | 18 609   | 115 120   |
| Thomas Wellauer          | CHF      | 419 172   | 18 609   | 114 620   |

(1) Accumulated benefits may include voluntary employee contributions or transfers of portability sums from previous employers' pension funds.

(2) Paul Choffat, who retired from his position in May 2007, was permitted to continue contributing to the Swiss Pension Fund and the Swiss Management Pension Fund as an external member at his own expense.

#### **Benefits to Non-Executive Directors**

No pension benefits are granted to Non-Executive Directors.

### Approval of the Remuneration Report

The Board is convinced that the Remuneration Report should not be submitted to a consultative shareholders' vote because the individual performance assessment and the determination of compensation of the members of the Executive Committee is the responsibility of the Compensation Committee and the Board.



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**FINANCIAL HIGHLIGHTS 2007 - CONTINUING OPERATIONS UNLESS STATED OTHERWISE**

| <b>KEY FIGURES</b>   | <b>2007<br/>USD<br/>millions</b> | <b>2006<br/>USD<br/>millions</b> | <b>%<br/>Change</b> |
|--|----------------------------------|----------------------------------|---------------------|
| Net sales  |                                  |                                  |                     |
| total Group (1)  | <b>39 800</b>                    | 37 020                           | <b>8</b>            |
| continuing operations  | <b>38 072</b>                    | 34 393                           | <b>11</b>           |
| Operating income excluding<br>environmental and restructuring charges<br>(2) | <b>7 815</b>                     | 7 642                            | <b>2</b>            |
| Operating income   | <b>6 781</b>                     | 7 642                            | <b>-11</b>          |
| Net income   |                                  |                                  |                     |
| continuing operations  | <b>6 540</b>                     | 6 825                            | <b>-4</b>           |
| total Group (1)  | <b>11 968</b>                    | 7 202                            | <b>66</b>           |
| Change in net liquidity (1)  | <b>6 754</b>                     | -1 826                           |                     |
| Equity at year end (1)   | <b>49 396</b>                    | 41 294                           | <b>20</b>           |
| Basic earnings per share (USD)   |                                  |                                  |                     |
| continuing operations  | <b>2.81</b>                      | 2.90                             | <b>-3</b>           |
| total Group (1)  | <b>5.15</b>                      | 3.06                             | <b>68</b>           |
| Dividends per share (CHF) (3)  | <b>1.60</b>                      | 1.35                             | <b>19</b>           |

- 
- (1) Total Group including discontinued Consumer Health operations.
  - (2) 2007 excludes USD 590 million of Corporate environmental charge and USD 444 million (Pharmaceuticals: USD 307 million; Consumer Health: USD 97 million; Corporate: USD 40 million) of Forward initiative restructuring charge
  - (3) 2007: Proposal to shareholders meeting
  - (4) Not meaningful

**KEY FINANCIAL DEVELOPMENTS IN 2007**

|  |   |
|--|---|
| <b>TOTAL GROUP</b>                                 | achieves record results in 2007 as net sales grow 8% (+3% in local currencies (lc)) to USD 39.8 billion and net income advances 66% to USD 12.0 billion. Results include contributions from Medical Nutrition and Gerber until divestment during 2007 and an after-tax divestment gain of USD 5.2 billion in net income |
| <b>NET SALES FROM CONTINUING OPERATIONS</b>        | rise 11% (+6% in lc) to USD 38.1 billion on strong contributions particularly from Sandoz and Vaccines and Diagnostics  |
| <b>PHARMACEUTICALS</b>                             | benefits from strong growth of many top brands and double-digit expansion in Europe, Latin America and key emerging markets. Net sales rise 6% (+2% lc), but US net sales fall 8% on adverse impact of generic competition for some products and <i>Zelnorm</i> suspension  |
| <b>VACCINES AND DIAGNOSTICS</b>                    | expands net sales by 52 % (+47% lc) to USD 1.5 billion on increased deliveries of vaccines for tick-borne encephalitis, seasonal influenza and pediatric immunization as well as blood testing products. Net sales up 25% on 2006 full-year comparable basis  |
| <b>SANDOZ</b>                                      | posts dynamic performance as net sales rise 20% (+ 13% lc) thanks mainly to the US, launches of difficult-to-make generics as well as initiatives in Eastern Europe and emerging markets. Operating income grows much faster than net sales   |
| <b>CONSUMER HEALTH</b>                             | successfully divests Medical Nutrition and Gerber businesses. Net sales from continuing operations up 11% (+6% lc) on double-digit growth in OTC and Animal Health, while CIBA Vision grows on improved product supplies  |
| <b>OPERATING INCOME FROM CONTINUING OPERATIONS</b> | includes charges of approximately USD 1 billion for Corporate environmental provision increase (USD 590 million) and Forward initiative (USD 444 million), leading to 11% decline. Excluding these charges, operating income rises 2%   |
| <b>NET INCOME FROM CONTINUING OPERATIONS</b>       | declines 4%, reflecting the impact of significant charges in 2007, but also improved financial income and a lower tax rate  |
| <b>EARNINGS PER SHARE</b>                          | rise 68% to USD 5.15 for the total Group, while EPS from continuing operations falls 3% to USD 2.81   |
| <b>DIVIDEND</b>                                    | proposed to shareholders for 2007 of CHF 1.60 per share, a 19% increase from CHF 1.35 in 2006 and an estimated dividend payout ratio of 49% of net income from continuing operations  |

## OPERATING AND FINANCIAL REVIEW

This operating and financial review should be read together with the consolidated financial statements in this Annual Report. The consolidated financial statements and the financial information discussed below have been prepared in accordance with International Financial Reporting Standards (IFRS) as published by the International Accounting Standards Board. Following a unanimous vote by the US Securities and Exchange Commission (SEC) to amend the relevant rules in November 2007, Novartis no longer provides a reconciliation to US Generally Accepted Accounting Principles.

### Overview

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide with a broad portfolio that includes innovative medicines, preventive vaccines and diagnostic tools, generic pharmaceuticals and consumer health products. Novartis is the only company to have leadership positions in each of these areas.

The Group's businesses are divided on a worldwide basis into the following four operating divisions:

- Pharmaceuticals (brand-name patented pharmaceuticals)
- Vaccines and Diagnostics (human vaccines and molecular diagnostics)
- Sandoz (generic pharmaceuticals)
- Consumer Health (over-the-counter medicines (OTC), animal health medicines, and contact lenses and lens-care products)

Novartis completed the divestment of its remaining non-healthcare businesses in 2007 with the sale of the Medical Nutrition Business Unit (effective July 1) and the Gerber Business Unit (effective September 1). Both were previously included in the Consumer Health Division, but have now been classified as discontinued operations in this Financial Report. These businesses were sold in separate transactions to Nestlé S.A., resulting in a combined after-tax net divestment gain of USD 5.2 billion.

Novartis achieved total Group net sales of USD 39.8 billion in 2007, an increase of 8% (+3% in local currencies), while net income advanced 66% to USD 12.0 billion. These results include contributions from Medical Nutrition and Gerber before their divestment in 2007 and the after-tax divestment gain of USD 5.2 billion.

For the Group's continuing operations, which are now solely focused on healthcare, net sales rose 11% (+6% lc) to USD 38.1 billion in 2007 thanks to strong contributions particularly from Sandoz and Vaccines and Diagnostics.

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Operating income from continuing operations declined 11% to USD 6.8 billion as it was affected by lost contributions in Pharmaceuticals following the entry of generic competition and the suspension of *Zelnorm* in the US as well as by a number of significant charges including impairment of intangible assets; a restructuring provision of USD 444 million related to a new productivity initiative called *Forward* and a USD 590 million increase in Corporate environmental provisions, which includes the related share of any potential remediation costs for historical landfills in the Basel region. Excluding the *Forward* restructuring and Corporate environmental liability charges, operating income from continuing operations rose 2%.

Net income from continuing operations fell 4% to USD 6.5 billion from USD 6.8 billion in 2006, and included higher contributions of income from associated companies, improved financial income and a lower effective tax rate compared to 2006. As a result, earnings per share from continuing operations declined 3% to USD 2.81 in 2007 from USD 2.90 in 2006.

Headquartered in Basel, Switzerland, the Group employed approximately 98 200 full-time equivalent associates as of December 31, 2007 and has operations in approximately 140 countries around the world.

### Factors Affecting Results of Operations

A number of key factors influence the Groups results of operations and the development of its businesses.

The overall global healthcare market is predicted to continue growing due to a combination of demographic and socio-economic factors. The aging of the world's population as well as more sedentary lifestyles and poor nutritional habits, both in industrialized countries as well as emerging markets, are leading to a rising incidence of chronic diseases and prompting greater use of medicines. At the same time, new medicines are gaining approvals to better treat many diseases as a result of technological advances and consistent investments in innovation.

The growing burden of healthcare costs as a percentage of gross domestic product in many countries, however, means that governments and payors are under intense pressure to control costs even more tightly. As a result, the healthcare industry is operating in an ever more challenging environment, one marked by government-controlled health authorities and managed care providers, particularly in the United States, that are taking aggressive actions to cut costs and restrict access to higher priced new medicines. Some generic drug manufacturers, meanwhile, have also become more aggressive in challenging intellectual property rights for patented medicines. At the same time, investments needed for the research and development (R&D) of new medicines have risen dramatically, in part because of increasing scrutiny of drug safety and efficacy.

In response to this dynamically changing environment, Novartis has built up its presence in businesses that go beyond the traditional focus on patent-protected medicines to include preventive vaccines and diagnostics, generic pharmaceuticals and targeted consumer health products. The Group has invested heavily in all of these businesses through initiatives intended to drive organic growth as well as acquisitions and will continue to do so in the future.

Novartis believes this diversified portfolio, focused on healthcare, best addresses the needs of patients and customers, providing a range of products that offer important treatment benefits for many diseases while also helping to reduce overall healthcare costs. A large and growing number of patients, physicians and payors worldwide can benefit from the broad range of products offered by Novartis. These include new and better medicines with improved efficacy and safety (Pharmaceuticals), preventive vaccines and diagnostic tools (Vaccines and Diagnostics), off-patent generic pharmaceuticals (Sandoz) and readily available products to support day-to-day health (Consumer Health).

This portfolio also helps Novartis to mitigate the negative impact of increasing challenges in the area of patent-protected medicines and offers attractive opportunities to benefit from expected faster growth in other healthcare areas, particularly in human vaccines and generics.

### **Fundamental Drivers Remain Strong**

The global healthcare market is predicted to continue growing based on many factors, including demographic changes and other socio-economic developments. As a result, Novartis expects its businesses to keep expanding in the coming years, both in the established markets of the United States, Western Europe and Japan as well as in priority emerging markets.

### **Aging Population with Increasing Healthcare Needs**

The elderly represent a rapidly growing proportion of the world's population, as a result of increasing life expectancy and reduced birth rates. Indeed, it is estimated that for every five years since 1965, roughly one additional year has been added to life expectancy at birth in developed countries. This dramatic demographic change is expected to have a major impact on the industry since healthcare expenditures rise with age. The number of people age 65 and older more than tripled to a record 420 million worldwide in 2000 from only 130 million in 1950, according to a study in 2001 by the US Census Bureau and the National Institute on Aging. This study further predicted that one in five people in the US will be 65 or older by 2030, and that this proportion will be even higher in other developed countries such as Italy and Japan. This trend may also become significant in many emerging markets, with some countries in Southeast Asia expected to witness the most dramatic changes in the composition of their populations.

Novartis has a significant number of products in its portfolio that may be of particular use to the elderly, in particular for cardiovascular disease as well as other often age-related conditions that include breast cancer, Alzheimer's disease, osteoporosis, age-related blindness and seasonal influenza.

### **Growing Importance of Emerging Markets**

At a time of slowing growth in sales of pharmaceuticals in industrialized countries, the strong economic expansion in many emerging markets is leading to higher proportional growth and provides an increasing contribution to the industry's global performance. According to IMS Health, a leading provider of industry information, the global pharmaceuticals market (both patent-protected and generic pharmaceuticals) is expected to grow at a slower pace in 2008 of approximately 5-6%, compared to 6-7% in 2007, resulting in industry sales of USD 735-745 billion. Key

factors cited for the slowdown are tougher regulations and cost-control measures as well as the pending expiry of patent protection for many of the industry's top-selling branded drugs.

For the first time, the seven largest markets—the US, Japan and the top five European countries—are expected in 2008 to contribute only about half of the industry's incremental annual sales growth, which is based on expectations for sharply lower sales growth in countries including the US (4-5%) and Japan (1-2%). Indeed, IMS estimated that about two-thirds of prescriptions dispensed in the US in 2008 will be generics, up from 50% in 2003.

At the same time, the seven leading emerging markets—Brazil, China, India, Mexico, Russia, South Korea and Turkey—are expected to generate combined annual sales growth of 12-13% in 2008 totalling approximately USD 90 billion, but provide approximately one-fourth of the industry's sales growth. Improving economies and greater spending on healthcare are considered the key factors.

Novartis has been taking steps to increase its presence in these priority emerging markets, and also in other emerging markets. For example, Novartis announced in 2007 the creation of a new cross-divisional operation to accelerate growth in small emerging markets, expanding the presence of all Novartis products in regions that include Northern and Sub-Saharan Africa, Central Asia and parts of Southeast Asia.

In 2007, approximately 66% (2006: 69%) of net sales from continuing operations were generated by Novartis in the world's seven largest markets, while 9% (2006: 8%) of net sales came from the seven leading emerging markets listed above. However, combined net sales in these seven priority emerging markets grew 25% in 2007 compared to 6% in the seven largest markets. Novartis expects emerging markets to make increasingly significant contributions to the Group's future results of operations.

### **Lifestyle Changes Lead to Higher Prevalence of Chronic Illnesses**

Economic growth and food industry dynamics in both industrialized and emerging countries have led to changes in lifestyles, in particular to people becoming more sedentary and adopting poor dietary habits. These trends have led to a rapid rise in the incidence of chronic illnesses that include obesity, chronic cardiovascular disease, diabetes, cancer and lung diseases. Novartis offers many products to help patients with these diseases and will continue to make significant investments into the research and development of new treatments.

### **Advances in Science and Technology Drive the Discovery of New Medicines**

Ongoing technological discoveries and developments in the understanding of diseases are laying the foundation for improvements upon existing therapies as well as the creation of new treatments for medical conditions for which none currently exist or for which current treatment options are inadequate. R&D investments by the global pharmaceuticals industry have risen more than tenfold during the last 20 years, according to the US industry trade association PhRMA, leading to a significant increase in the number of drugs in recent years in development pipelines.

Based on recent advances in technologies, particularly those within the last decade that have advanced the analysis of human genome data, the number of drugs in development is expected to rise further thanks to improving information about the role of specific genes and proteins in the human body. Like other research-based pharmaceutical companies, Novartis is making major investments in these new technologies, which could have a fundamental effect on product development, and in turn could affect the Group's results of operations.

### **Increasingly Challenging Business Environment**

While the overall healthcare market has grown steadily in recent years, the competitive operating environment is becoming more challenging as a result of several factors, such as increasing cost pressures, the threat of patent expirations for leading products as well as a period of relatively low R&D productivity and increasing scrutiny of drug safety by regulatory agencies. Novartis believes it is well-positioned to address these challenges.

### **Record Level of Industry Patent Expirations and Increasingly Aggressive Generic Competition**

The pharmaceuticals industry is confronted by a continuing high level of patent expirations, with products representing approximately USD 20 billion in combined annual sales set to lose patent protection in 2008, similar to levels seen in 2006 and 2007, according to IMS Health.

Given the continuous pressure of patent expirations, innovation is critical to the success of companies like Novartis. Sustainable growth can only be delivered by discovering and developing new products that address unmet needs, are accepted by patients and physicians, and are reimbursed by payors. The ability to gain regulatory approvals and successfully secure and defend intellectual property rights is particularly important for products in the Pharmaceuticals and Vaccines and Diagnostics Divisions. The loss of exclusivity for one or more important products – either due to patent expiration, generic challenges, competition from new branded products or changes in regulatory status – could have a material negative impact on the Group's results of operations.

Like other healthcare companies, Novartis takes active steps to defend its intellectual property rights, including by initiating patent infringement lawsuits against generic drug manufacturers and, to a lesser degree, against other research-based pharmaceutical companies. Some generics manufacturers, however, are increasingly conducting so-called "at risk" launches of products that are still under legal challenge for patent

infringement and before final resolution of legal proceedings.

In 2007, sales of four Novartis pharmaceutical products *Lotrel* (high blood pressure), *Lamisil* (fungal infections), *Trileptal* (epilepsy) and *Famvir* (viral infections) were negatively affected by the start of generic competition in the US, which in some cases was unexpected. These four products had combined 2006 annual net sales of approximately USD 2.6 billion in the US. As a result of generic competition, combined net sales in 2007 for these products declined 38% to USD 1.6 billion, and are expected to decline significantly further in 2008. The sharp and significant reduction in net sales of these products had an adverse effect on the 2007 results of operations of the Pharmaceuticals Division.

Other Novartis pharmaceutical products that are the subject of ongoing US patent litigation include *Femara* (breast cancer), *Lescol* (high cholesterol), *Focalin/Ritalin LA* (ADHD) and *Comtan/Stalevo* (Parkinson's disease). The loss of exclusivity of some of these products could have a significant adverse effect on the results of operations of the Pharmaceuticals Division. In addition, *Neoral* (transplantation) and *Voltaren* (pain), which are still among the Group's top ten-selling products and had combined net sales of USD 1.7 billion in 2007, have already encountered generic competition in many markets, which may cause sales from these products to decline significantly in the future. A number of other top-selling products, including *Diovan* (high blood pressure) as well as *Gleevec/Glivec* and *Zometa* (both for cancers), could also potentially face generic competition in the coming years in various markets, particularly the US and Europe, either due to potential patent challenges or the regular expiration of patents. *Diovan*, *Gleevec/Glivec* and *Zometa* had combined net sales of USD 9.4 billion in 2007, and the loss of exclusivity of any one of these three products could have a significant adverse effect on the Group's financial condition and results of operations.

### **Decline in R&D Productivity and Rising Scrutiny of Product Safety**

Although advances continue to lead to breakthroughs in helping patients, the pharmaceuticals industry has been suffering from a dearth of new drugs gaining regulatory approvals in recent years. For example, the US Food and Drug Administration (FDA) approved only 18 entirely new drugs (new molecular entities) in 2007, the lowest single-year total since 1983, when there were 14 new approvals. This decline in productivity comes at a time when the worldwide pharmaceuticals industry is estimated to be spending more than USD 40 billion each year on R&D activities.

Following widely publicized issues such as Merck & Co., Inc.'s recall of its pain medicine Vioxx® in 2004, healthcare regulators are increasingly focusing on product safety and efficacy as well as on the risk/benefit profile of developmental drugs. This has led to requests for more clinical trial data with a significantly higher number of patients and for more detailed analyses. As a result, obtaining regulatory approvals has become more challenging for pharmaceutical companies. In addition, maintaining regulatory approvals has become increasingly expensive since companies are being required to gather far more detailed safety and other clinical data on products after approval.

As is the case with other industry competitors, Novartis has suffered setbacks in gaining regulatory approvals for new products as well as being able to keep products on the market, primarily in the Pharmaceuticals Division. For example, in March 2007, *Galvus* (diabetes) received a so-called "approvable" letter from the FDA requiring Novartis to conduct major additional clinical trials before US regulatory approval despite the subsequent approval in the European Union in September 2007. In March 2007, Novartis also suspended the marketing and sales of *Zelnorm* (irritable bowel syndrome) in the US and several other countries in response to a request from the FDA and for further discussions of the product's risks and benefits. As a result of these suspensions, net sales of *Zelnorm* fell 84% to USD 88 million in 2007 as compared to 2006, and are expected to fall significantly further in 2008. A treatment access program was started in the US to continue providing *Zelnorm* to patients with inadequate alternatives. Novartis continues to hold discussions with regulatory agencies and believes *Zelnorm* offers important benefits to appropriate patients. Separately, in the second half of 2007, *Prexige* (osteoarthritic pain) was withdrawn from the market in Australia as well as in some countries of the European Union based on post-marketing reports of serious liver side-effects allegedly associated with long-term uses of higher doses, including the deaths of two patients in Australia.

### **Increasing Pressure on Drug Pricing and Access to Medicines**

Prices for healthcare products, primarily patented medicines, continue to be the subject of significant political debate in many industrialized and developing countries. These debates focus on the relative costs of medicines at a time of rapidly rising overall expenditures for healthcare. As a result, payors—primarily government-controlled agencies and US insurance companies and managed care organizations—are exerting pressure on healthcare companies to cut prices, urging physicians to use more generics and restricting access to new medicines. Patients are also being forced to pay a larger contribution toward healthcare costs, which has limited growth for patented pharmaceuticals in countries such as the US but at the same time has led to growth in OTC (over-the-counter) and generics, areas where Novartis is one of the world leaders.

### **Strong Competition in Other Areas of the Novartis Healthcare Portfolio**

Other businesses within the Novartis portfolio outside of the Pharmaceuticals Division face their own challenges.

While the anticipated strong growth outlook for the generics market and the pending loss of patent protection for several important industry products can create significant opportunities for the Sandoz Division, competition in this industry is very intense. Sandoz believes that it has certain competitive advantages based on its leadership positions in the world's top generics markets as well as in its track record in gaining regulatory approvals for "difficult-to-make" generics that utilize innovative product applications. However, many of the division's products are considered to be commodities with multiple sellers competing aggressively on price. In addition, pressure is increasing in some markets, particularly in Europe and the US, to further reduce generic prices. These pressures stem both from government regulations, and also from the division's various distributors that are aggressively seeking to increase their profit margins at the expense of generic pharmaceutical

manufacturers. Finally, a significant source of revenue for generics companies are exclusivity periods granted in certain markets particularly the 180-day exclusivity period granted to companies in the US by the Hatch-Waxman Act. However, a number of factors have had the effect of limiting the availability of these 180-day exclusivity periods or of decreasing their value, including a variety of aggressive steps taken by branded pharmaceuticals companies to counter the growth of generics, and increased competition among generics companies to achieve these periods of exclusivity. These pricing pressures, and these efforts by competitors of the Sandoz Division have had, and likely will continue to have, a negative influence on Sandoz's results of operations.

In the Vaccines and Diagnostics Division, the demand for some types of vaccines is seasonal, such as for influenza vaccines, while the demand for others, such as pediatric combination vaccines, are dependent upon birth rates in developed countries. Some vaccines, particularly seasonal influenza vaccines that make an important contribution to the division's net sales and profits, are considered to be commodities, meaning that there are few therapeutic differences among vaccines offered by competitors. The ability to develop differentiated, effective and safe vaccines, to gain approval for inclusion in national immunization recommendation lists, and to consistently produce and deliver high-quality vaccines in time for the relevant disease season are critical to the success of the Vaccines and Diagnostics Division.

### **Novartis Strategies for Sustainable Growth**

Novartis believes it has one of the best portfolios of businesses to address the demands of the dynamically changing healthcare environment. In going beyond the traditional focus on patent-protected pharmaceuticals, this diversified healthcare portfolio offers significant benefits to patients, physicians and payors, while also mitigating the negative impact of increasing industry challenges in the area of patent-protected pharmaceuticals and providing attractive opportunities to benefit from expected faster growth in areas such as vaccines, generics and consumer health.

The Group has one of the industry's highest-rated product development portfolios, as demonstrated by the industry-leading 15 major US and European regulatory approvals in 2007, and is taking important steps to further strengthen its R&D capabilities. Efforts are also underway to find more efficient ways to support new product launches and to improve productivity.

### **Strengthen Strategic Healthcare Portfolio, Particularly Non-Pharmaceutical Businesses**

Novartis expects each of its four divisions to play a significant role in the future success of the Group, providing opportunities for growth by offering a range of medicines and vaccines to patients, physicians and payors. Novartis will continue to evaluate opportunities to improve the competitiveness of these businesses and to better position the Group for success. The strong performances of both the Vaccines and Diagnostics and Sandoz Divisions in 2007 reflect the positive impact of recent investments in these fast-growing businesses. The focused diversification that Novartis' four businesses offer also helps to balance industry risks such as those recently encountered in the Pharmaceuticals Division in the US that include increasing regulatory scrutiny of drug safety and efficacy as well as lost sales as a result of more aggressive and risk-taking generics manufacturers.

### **Innovative Medicines**

The aim of the Pharmaceuticals Division is to provide patients and physicians with new and better medicines with improved efficacy and fewer side-effects. Novartis ranks as one of the top 10 companies based on sales of patent-protected medicines, with leading positions in cardiovascular and cancer treatments and an expanding presence in neuroscience. Viewed as having one of the most respected pipelines in the industry, Novartis will continue to invest heavily in research and development—particularly in biologic therapies. Novartis is also reviewing ways to more efficiently support new product launches by utilizing new technologies and advanced marketing tools. Novartis also considers itself to be a preferred partner for strategic alliances with biotechnology companies—both for development compounds as well as new technologies—and these collaborations will remain important to future business developments.

### **Prevention**

The Vaccines and Diagnostics Division was created in April 2006 following the Group's acquisition of the remaining stake in Chiron Corporation not already held by Novartis, providing access to the fast-growing human vaccines market. This division markets vaccines and

diagnostic tools that protect against life-threatening diseases. Novartis further strengthened this business in September 2007 by entering into a strategic alliance with Intercell, an Austrian biotechnology company focused on vaccines development.

#### **Cost-Saving Alternatives**

Sandoz markets generic products that replace branded medicines after patent expiry and free up funds for healthcare payors to spend on innovative medicines. With the acquisition in 2005 of two leading generic pharmaceuticals companies (Hexal AG and Eon Labs, Inc.), Sandoz became the world's second-largest generics company, with strengths in difficult-to-make generics and innovative product applications, including device technologies. Given these capabilities, which provide access to higher-value areas of the generics market, Novartis expects Sandoz to become an increasing contributor to the Group's future results of operations.

#### **Patient and Consumer Empowerment**

The Consumer Health Division—composed of the OTC, Animal Health and CIBA Vision Business Units—markets high quality consumer products. These businesses have gained market share in their respective segments through a focus on strategic brands, product innovation and expansion in emerging markets. While divesting non-core activities, Novartis has strengthened the three remaining healthcare businesses in the Consumer Health Division. For example, OTC was strengthened by acquiring the rights in 2006 to various OTC products in North America from Bristol-Myers Squibb Co., and Animal Health was supported by acquiring Sankyo Lifetech's animal health business in Japan in 2007.

### **Step Up Innovation**

Maintaining a competitive advantage in the healthcare industry requires significant investments in R&D. The ability of Novartis to continue to grow all of its businesses and replace lost sales due to the loss of exclusivity for important products as a result of patent expiration, generic challenges, competition from new branded products or changes in regulatory status depends upon the ability of the Group's R&D activities to identify and develop high-potential breakthrough products and bring them quickly to the market.

Like its competitors in the healthcare industry, Novartis will continue making significant investments in drug discovery particularly in biologic medicines and related technologies. Steps are also being taken to accelerate R&D activities throughout the Group and to find ways to lower attrition rates among pipeline products in the final stages before approval. For example, a reorganization of the Pharmaceuticals Development organization began in 2007 with the aim of strengthening project focus, integrating decision making at the therapeutic franchise level and simplifying development decision-making structures.

Novartis has also been building its position in biologics, consistently growing its capabilities and expertise in the R&D of all biologic therapies, which now represent 25% of the pre-clinical research portfolio. These types of treatments, often referred to as large molecules, are made from living cells and stimulate a response against specific disease targets. They are often intended to treat diseases that have been more challenging to treat with small molecule approaches based on chemical substances. In the second half of 2007, Novartis formed the new Novartis Biologics Unit, establishing a dedicated innovation unit, with a strong biotech culture in the areas of discovery and development unique to biologics, and with full access to the extensive Novartis discovery organization that generates many targets across multiple therapeutic areas.

The quality of the current development pipeline reflects investments made in the Group's own R&D activities, in many cases more than 10-20 years ago, as well as recent acquisitions and licensing collaborations. Novartis has consistently had one of the highest R&D investment rates, as a percentage of net sales, in the industry, reflecting its commitment to bringing innovative and differentiated products to the market with novel therapeutic benefits.

Up to one-third of annual Pharmaceuticals Division R&D expenditures are used to reach licensing agreements with other companies, particularly specialized biotechnology companies, to co-develop promising compounds. These collaborations enable Novartis to capitalize on the potential of these compounds and to expand its development pipeline. To complement internal R&D activities, Novartis (like other pharmaceutical companies) has entered into a significant number of alliances in recent years. From time to time, Novartis also makes equity investments in a licensing partner or fully acquires a company to gain access to novel compounds. The industry-wide decline in R&D productivity in recent years, however, has led to an increasing competition for collaborations with specialized niche players at the forefront of their particular field. Funding requirements for R&D activities are likely to continue to grow in the future and may, at times, even grow at a faster rate than net sales. These investments, however, are critical for the continuing success of Novartis. In 2007, Novartis invested USD 6.4 billion in R&D activities throughout the Group, a 21% increase over 2006.

### **Maximize Successful Product Launches**

Efforts are underway to find more efficient ways to support new product launches and improve profit margins. A strong marketing message and rapid penetration of potential markets in different geographic territories are vital if a product is to attain peak sales as quickly as possible before the loss of patent protection or the entry of significant competitor products. Novartis continually evaluates the appropriateness of its marketing models in its divisions and adjusts the composition of its sales forces. For example, during 2007, Novartis reduced its US pharmaceuticals sales force by approximately 1 000 positions due to changes in the product portfolio.

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In the Pharmaceuticals Division, Novartis obtained 15 major regulatory approvals in 2007 in the US and Europe for new pharmaceuticals and successfully launched a number of new and other recently approved products. These include regulatory approvals in 2007 for *Exforge* and *Tekturna/Rasilez* (high blood pressure), *Exelon Patch* (Alzheimer's disease), *Lucentis* (age-related blindness), *Tasigna* (cancer) and *Aclasta/Reclast* (osteoporosis) as well as the continued rollout of *Exjade* (iron overload) and *Xolair* (asthma). For further information see Results of Operations Net sales Pharmaceuticals Division key product highlights Key new products below.

### **Improve Organizational Efficiency**

Novartis is constantly exploring ways to improve productivity. In particular, Novartis is taking actions to improve its competitiveness in a fast-changing healthcare environment through a new initiative that will result in a streamlined organizational structure and change the way the Group operates. This initiative, called Forward, is expected to generate significant cost savings and help prepare Novartis for future growth. At the same time, Novartis will continue investing in higher-value activities, particularly the R&D of new biological therapies and expansion in key emerging markets.

As part of Forward, Novartis will streamline and simplify organizational structures at its global headquarters as well as in the Pharmaceuticals and Consumer Health Divisions. These initiatives will remove excess management layers, eliminate structural duplications and reduce the amount of resources required for general and administrative functions. The organization will further evaluate ways to optimize supply networks worldwide, and Group-wide initiatives are underway to standardize and streamline shared functions such as procurement, information technology and financial transaction processing to provide greater benefits in cost management and economies of scale. Some of these administrative activities are also being outsourced or transferred to lower-cost countries.

Through these initiatives, which are designed to maximize the resources available to support ongoing profitable growth, Novartis aims to reduce its cost-base by approximately USD 1.6 billion by 2010 compared to 2007 levels. As a result of the related measures, Novartis recorded a pre-tax restructuring charge of USD 444 million in the fourth quarter of 2007. The various initiatives are being implemented primarily at the divisional level to ensure businesses can continue to meet the needs of customers as well as to ensure fair and respectful treatment of associates. Novartis will consult with works councils and comply with local labor laws. The proposed initiatives are expected to lead to the elimination of approximately 2 500 full-time positions, which represents approximately 2.5% of the Group's current worldwide workforce. Novartis will try to minimize the number of affected associates through natural attrition, vacancy management and social programs.

### **Acquisitions, Divestments and Other Significant Transactions**

Novartis has made several acquisitions and divestments in recent years that have had, and are expected to continue to have, a significant impact on the Group's financial condition and results of operations.

In 2007, Novartis became focused solely on healthcare through the divestments of the remaining Medical Nutrition (effective July 1) and Gerber Business Units (effective September 1).

Contributions from strategic acquisitions have a significant impact on the Group's results of operations as well. The remaining stake in Chiron Corporation was acquired in April 2006 to create the new Vaccines and Diagnostics Division, while Sandoz strengthened its position as a world leader in generics through the mid-2005 acquisitions of Hexal AG and Eon Labs, Inc.

As a result of these acquisitions and other strategic transactions, the Group's results of operations are increasingly affected by charges for the amortization of intangible assets as well as impairment charges and other one-time costs related to the integration of acquisitions. These are described in more detail under Effect of Intangible Asset Charges and Significant Exceptional Items .

Novartis continually evaluates potential opportunities for targeted acquisitions or other strategic transactions, including product licensing agreements, that would improve the Group's competitive position and create value for shareholders.

**Divestments/Discontinued Operations in 2007**

**Consumer Health Gerber Business Unit**

On September 1, 2007, Novartis completed the divestment of the Gerber infant products Business Unit for approximately USD 5.5 billion to Nestlé S.A. A pre-tax divestment gain of approximately USD 4.0 billion was recorded in the third quarter of 2007.

**Consumer Health Medical Nutrition Business Unit**

On July 1, 2007, Novartis completed the divestment of the remainder of the Medical Nutrition Business Unit for approximately USD 2.5 billion to Nestlé S.A. A pre-tax divestment gain of approximately USD 1.8 billion was recorded in the third quarter of 2007.

Both the Gerber and Medical Nutrition Business Units (including the Nutrition & Santé business) are reflected as discontinued operations in the Group's consolidated financial statements included in this annual report. These businesses had combined 2007 net sales of USD 1.7 billion and operating income of USD 311 million before their divestment. In 2007, net income from discontinued operations, including the after-tax divestment gains, totaled USD 5.4 billion, compared to USD 377 million in 2006.

## **Other Significant Transactions in 2007**

### **Vaccines and Diagnostics Intercell**

On September 28, 2007, Novartis entered into a strategic alliance with Intercell AG, an Austrian biotechnology company focused on vaccines development. As a consequence of the agreement, Novartis paid USD 383 million (EUR 270 million) and recorded USD 207 million (EUR 146 million) of intangible assets and acquired an additional 4.8 million shares for USD 176 million (EUR 124 million), which increased the Novartis holding in Intercell to 15.9%.

### **Pharmaceuticals Betaseron®**

On September 14, 2007, Novartis and Bayer Schering Pharma AG received regulatory approval to complete an agreement related to various rights for the multiple sclerosis treatment Betaseron® under an earlier agreement between Schering and Chiron Corporation, transferred to Novartis in April 2006. Under the new agreement, Novartis received a one-time payment of approximately USD 200 million, principally for manufacturing facilities transferred to Bayer Schering, as well as receiving the rights to market its own branded version of Betaseron® starting in 2009 (pending regulatory approvals).

## **Acquisitions in 2006**

### **Pharmaceuticals NeuTec Pharma**

In 2006, Novartis acquired 100% of NeuTec Pharma plc, a biopharmaceuticals company specializing in hospital anti-infectives, for USD 606 million. Novartis has fully consolidated NeuTec's financial results, which have not included any sales, in its financial statements since July 14, 2006.

### **Pharmaceuticals and Vaccines and Diagnostics Chiron**

On April 20, 2006, Novartis completed the acquisition of the remaining 56% of the shares of Chiron Corporation that Novartis did not already own for approximately USD 5.7 billion. For the period from January 1, 2006 until completion of the acquisition, the 44% minority interest in Chiron held by Novartis was accounted for using the equity method. For the period after completion of the acquisition, Chiron has been fully consolidated with its identifiable assets and liabilities being revalued to their fair value at the date of acquisition. Following the acquisition, Chiron's vaccines and diagnostic activities are reported as a separate Division, called Vaccines and Diagnostics, and its pharmaceuticals activities are consolidated into the Pharmaceuticals Division's results.

## **Divestments/Discontinued Operations in 2006**

### **Consumer Health Nutrition & Santé**

On February 17, 2006, Novartis completed the sale of Nutrition & Santé for USD 211 million to ABN AMRO Capital France, resulting in a pre-tax divestment gain of USD 129 million.



## Impact of Intangible Asset Charges and Significant Exceptional Items

As a result of acquisitions, divestments and other factors the reported operating income and net income of Novartis has been significantly affected by the amortization of intangible assets, impairment charges, expenses relating to the integration of acquisitions and other items that management deems exceptional. The following shows operating income and net income excluding these items.

|  | Pharmaceuticals |                 | Vaccines and Diagnostics |                 |
|--|-----------------|-----------------|--------------------------|-----------------|
|  | 2007            | 2006            | 2007                     | 2006            |
|  | USD<br>millions | USD<br>millions | USD<br>millions          | USD<br>millions |
| <b>Reported operating income/loss</b>  | <b>6 086</b>    | <b>6 703</b>    | <b>72</b>                | <b>-26</b>      |
| Recurring amortization   | 411             | 268             | 295                      | 172             |
| Impairments  | 446             | 76              |                          |                 |
| <b>Intangible asset charges</b>  | <b>857</b>      | <b>344</b>      | <b>295</b>               | <b>172</b>      |
| Acquisition-related restructuring and integration expenses (including acquisition-related accounting impact of inventory adjustments), net |                 | 226             | 25                       | 161             |
| Forward initiative restructuring expenses  | 307             |                 |                          |                 |
| Other restructuring expenses   | 25              |                 |                          |                 |
| Other impairment charges on property, plant & equipment  |                 | 3               |                          | 7               |
| <b>Exceptional restructuring and acquisition related integration expenses, net</b>   | <b>332</b>      | <b>229</b>      | <b>25</b>                | <b>168</b>      |
| <b>Exceptional gains/losses from divesting brands, subsidiaries and financial investments</b>  | <b>-171</b>     | <b>-87</b>      |                          |                 |
| Impairment of financial assets   | 41              | 34              |                          |                 |
| Environmental provision increase   |                 |                 |                          |                 |
| Litigation and other settlements   |                 |                 | -83                      |                 |
| Suspension of <i>Zelnorm</i>   | 80              |                 |                          |                 |
| <i>Tekturna/Rasilez</i> inventory provision  | -107            |                 |                          |                 |
| Release of Tricare revenue deduction accrual   |                 | -62             |                          |                 |
| France accounting irregularity   |                 |                 |                          |                 |
| <b>Other exceptional items</b>   | <b>14</b>       | <b>-28</b>      | <b>-83</b>               |                 |
| <b>Total adjustments</b>   | <b>1 032</b>    | <b>458</b>      | <b>237</b>               | <b>340</b>      |
| <b>Operating income/loss excluding above items</b>   | <b>7 118</b>    | <b>7 161</b>    | <b>309</b>               | <b>314</b>      |
| Income from associated companies   |                 |                 |                          |                 |
| Associated company exceptional charges incurred by Chiron prior to its acquisition   |                 |                 |                          |                 |
| Net financial income   |                 |                 |                          |                 |
| Taxes (adjusted for above items)   |                 |                 |                          |                 |
| <b>Adjusted net income from continuing operations</b>  |                 |                 |                          |                 |
| <b>Adjusted net income attributable to shareholders</b>  |                 |                 |                          |                 |
| <b>Adjusted basic earnings per share from continuing operations (USD)</b>  |                 |                 |                          |                 |



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| 2007<br>USD millions | Sandoz               |                      | Consumer Health<br>continuing operations |                      | Corporate            |                      | Total continuing operations |                      |
|----------------------|----------------------|----------------------|--|----------------------|----------------------|----------------------|-----------------------------|----------------------|
|                      | 2006<br>USD millions | 2006<br>USD millions | 2007<br>USD millions                     | 2006<br>USD millions | 2007<br>USD millions | 2006<br>USD millions | 2007<br>USD millions        | 2006<br>USD millions |
| <b>1 039</b>         | <b>736</b>           | <b>812</b>           | <b>761</b>                               | <b>-1 228</b>        | <b>-532</b>          | <b>6 781</b>         | <b>7 642</b>                |                      |
| 293                  | 279                  | 89                   | 83                                       | 3                    | 8                    | 1 091                | 810                         |                      |
| 32                   | 47                   | 4                    | 3  |                      |                      | 482                  | 126                         |                      |
| <b>325</b>           | <b>326</b>           | <b>93</b>            | <b>86</b>                                | <b>3</b>             | <b>8</b>             | <b>1 573</b>         | <b>936</b>                  |                      |
|                      | 53                   | 9                    |  |                      |                      | 34                   | 440                         |                      |
|                      |                      | 97                   |  | 40                   |                      | 444                  |                             |                      |
| 11                   | 8                    |                      |  |                      |                      | 36                   | 8                           |                      |
| 31                   |                      |                      |  |                      |                      | 31                   | 10                          |                      |
| <b>42</b>            | <b>61</b>            | <b>106</b>           |  | <b>40</b>            |                      | <b>545</b>           | <b>458</b>                  |                      |
|                      | 7                    |                      |  |                      |                      | <b>-171</b>          | <b>-80</b>                  |                      |
| 27                   |                      |                      |  | 10                   | 5                    | 78                   | 39                          |                      |
|                      |                      |                      |  | 590                  |                      | 590                  |                             |                      |
|                      |                      |                      |  |                      |                      | -83                  |                             |                      |
|                      |                      |                      |  |                      |                      | 80                   |                             |                      |
|                      |                      |                      |  |                      |                      | -107                 |                             |                      |
|                      |                      |                      |  |                      |                      |                      | -62                         |                      |
|                      | 69                   |                      |  |                      |                      |                      | 69                          |                      |
| 27                   | <b>69</b>            |                      |  | <b>600</b>           | <b>5</b>             | <b>558</b>           | <b>46</b>                   |                      |
| <b>394</b>           | <b>463</b>           | <b>199</b>           |  |                      |                      |                      |                             |                      |