Preventive Strategies: Roles, Responsibilities and Partnership – View of the Pharmaceutical Industry

Thomas B. Cueni, Secretary General, Interpharma
Pharmaceutical Industry Yesterday and Tomorrow

- Mid 19th Century: First dye production for silk industry in Basel
- ... from dye production to chemistry
- ... from chemistry to pharmaceuticals in the 20th Century
- ... from pharmaceuticals to biotechnology
- ... challenged today to become ...
- ... a partner in health care in the 21st Century
Great Public Health Achievements in the 20th Century

Top 10 Causes of Death: 1900 vs. 2010

Ten Great Public Health Achievements in the 21st century

Nominated by Public health scientists at CDC, USA*

- **Vaccine-Preventable Diseases** (new vaccines, improvement of old vaccines)
- **Prevention and Control of Infectious Diseases** (targeted prevention efforts)
- **Tobacco Control**
- **Maternal and Infant Health** (Screening for metabolic and other heritable disorders)
- **Motor Vehicle Safety**
- **Cardiovascular Disease Prevention** (reduce hypertension, cholesterol, smoking, improved treatments, medications, quality of care)
- **Occupational Safety**
- **Cancer Prevention** (improved cancer screening rates)
- **Childhood Lead Poisoning Prevention**
- **Public Health Preparedness and Response**

*) Domestic Public Health Achievements Team, CDC, MMWR Weekly, May 2011.
Life Expectancy at Birth in Switzerland, 1960 to 2010

Source: OECD Health Data 2012.
## Healthy Aging

### Lebenserwartung bei guter Gesundheit

<table>
<thead>
<tr>
<th>Land</th>
<th>Lebenserwartung bei Geburt (in Jahren), 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP</td>
<td>76</td>
</tr>
<tr>
<td>CH</td>
<td>75</td>
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<tr>
<td>SE</td>
<td>74</td>
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<td>UK</td>
<td>72</td>
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<tr>
<td>DK</td>
<td>72</td>
</tr>
<tr>
<td>US</td>
<td>70</td>
</tr>
</tbody>
</table>

Percentage of Adults Reporting to Be in Good Health, 2010 (or Nearest Year)

Source: OECD Health Data 2012.

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Prevalence of Obesity Among Adults (18+), 2010 (or Nearest Year)

Source: OECD Health Data 2012.
*: Measured data
**: Self-reported data
Ischemic Heart Disease, Mortality Rates, 2010 (or Nearest Year)

Source: OECD Health Data 2012.
All Cancers Mortality Rates, Males and Females, 2009 (or Nearest Year)

Source: OECD Health Data 2011.
Total Health Expenditure as Share of GDP, 2010 (or Nearest Year)

% of GDP

Source: OECD Health Data 2012.
Pharmaceutical Expenditure as Share of GDP, 2010 (or Nearest Year)

Source: OECD Health Data 2012.
Figure 2.7. **Health care spending by component, 2008 (or most recent year)**

% of total health expenditure

Source: Value for Money in Health Spending, OECD 2010.
Cost Increase in Swiss Health Care System 2007-2010

In million CHF

# Healthcare Expenditure and Illness-related Costs

<table>
<thead>
<tr>
<th>Condition</th>
<th>Healthcare expenditure (direct medical costs) in million CHF/a</th>
<th>Direct non-medical costs in million CHF/a</th>
<th>Indirect costs in million CHF/a</th>
<th>Total costs in million CHF/a</th>
<th>Ratio of healthcare expenditure to illness-related costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple sclerosis</td>
<td>192</td>
<td>55</td>
<td>273</td>
<td>520</td>
<td>37.0%</td>
</tr>
<tr>
<td>Sepsis</td>
<td>355</td>
<td>no data</td>
<td>844</td>
<td>1,199</td>
<td>29.6%</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>790</td>
<td>278</td>
<td>1,332</td>
<td>2,400</td>
<td>32.9%</td>
</tr>
<tr>
<td>Dementia</td>
<td>3,486</td>
<td>no data</td>
<td>2,771</td>
<td>6,257</td>
<td>55.7%</td>
</tr>
<tr>
<td>Cancer</td>
<td>3,062</td>
<td>241</td>
<td>4,593</td>
<td>7,655</td>
<td>40.0%</td>
</tr>
<tr>
<td>Back pain (HCA)</td>
<td>2,751</td>
<td>1,224</td>
<td>6,316</td>
<td>10,291</td>
<td>26.7%</td>
</tr>
<tr>
<td>Back pain (FCA)</td>
<td>2,751</td>
<td>1,224</td>
<td>3,390</td>
<td>7,365</td>
<td>37.3%</td>
</tr>
<tr>
<td>Brain diseases/disorders</td>
<td>6,082</td>
<td>2,696</td>
<td>9,831</td>
<td>18,609</td>
<td>32.7%</td>
</tr>
</tbody>
</table>

HCA: human capital approach; FCA: friction cost approach to calculate productivity losses

Source: Polynomics, Healthcare expenditure and illness-related costs, study on behalf of Interpharma, September 2011.
Healthy Aging and Future Spending

Entwicklung der Gesundheitsausgaben 2009–2060
In Prozent des BIP

- Referenz
- Lohndruck
- Compression of Morbidity («Gesund altern»)
- Effizienz moderat
- Effizienz hoch

QUELLE: EFV/BFS

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The Health Care System is Undergoing Unparalleled Changes

**Aging**
The average age of the world population is constantly rising. At the same time, the demand for medical care is growing, which is forcing the funding organizations to take aggressive cost-containment measures.

**Unhealthy lifestyles**
Poor nutritional habits and a lifestyle involving little exercise is leading to an increase in chronic diseases.

**Emerging markets**
The economic growth of emerging markets is allowing the populations of these countries greater access to healthcare services.

**Advances in science and technology**
New technological developments and trends make innovative medicines possible, but at the same time push up the innovation costs.
Growing Burden, Growing Gap

- Four major chronic NCDs (diabetes, cardiovascular disease, cancer, chronic respiratory diseases) account for 60% premature deaths in all countries.
- Leading NCDs account for up to 86% deaths in Europe.
- Prevalence and burden are rapidly rising: 100 million people with diabetes by 2030 in OECD countries.
- Chronic NCDs can be prevented (in many cases).
- Prevention, early detection and intervention and state-of-the-art treatments and management saves lives and costs.
- Current practices and currently available solutions are insufficient to meet the NCD challenge.
Multimorbidity

Case study Scotland

Source: Barnett, K. et al.: Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study, Lancet, May 2012. (Data from about 1.8 million patients (1/3 of Scotland’s population) were analyzed.)
Need to...

- Focus on prevention
- Detect earlier
- Intervene / treat earlier
- Improve patients management of disease
- Provide access to safe and effective treatments
- Invest in development of more effective, save, cost-efficient interventions
- Improve Health Care Systems
  - Prevention: Keep people healthy
  - Access: universal and equitable
  - Quality: objectively measure outcomes
  - Sustainability: ensure long-term affordability to society
- Multi-Stakeholder Approach
  - Partnership between governments, agencies, healthcare providers, payors, patient groups, industry, ...
Improvements to Close the Gap

Effectiveness of intervention/programme

No impact

Full impact

- Improve current practice
- Improve best practice

Current Practice

Focus on Quality

Current Best Practice

Research Innovation

Future Best Practice
Example: Reducing Body Weight

Onset of diabetes delayed by reducing body weight

Evidence for effective life-style programmes exist

However, life-style programmes work...
... only in a very small segment of obese / overweight
... only in very intense programmes

- intervene to reduce and maintain body weight
- Implement effective programmes
- Need to better stratify population at risk and tailor programmes
- Adapt to real-world conditions for widespread community based programmes
Proven Cost-Effective Interventions

Proven Cost-Effective Interventions To Prevent And Control Diabetes

**Primary prevention interventions**
- Intensive lifestyle intervention in people with prediabetes using a Diabetes Prevention Program type intervention
- Pharmacological agents (oral antidiabetics) for primary prevention (metformin)

**Secondary prevention interventions**
- Screening for undiagnosed type 2 diabetes and ensuing therapy
- Screening for gestational diabetes
- Glycemic control (hemoglobin A1c < 7 percent)
- Self-monitoring of blood sugar levels
- Blood pressure control (< 130/85 mm Hg), preferably with ACE inhibitors or ARBs
- Statin therapy for elevated blood lipids
- Smoking cessation counseling
- Annual/biennial screening for diabetic retinopathy
- Comprehensive foot care for those at high risk
- Screening for diabetic nephropathy (microalbuminuria) and ensuing therapy with ACE inhibitors or ARBs
- Preconception care among women with diabetes
- Intensive lifestyle intervention in people with diabetes (adapting the Look AHEAD model)
- Pneumococcal and influenza vaccinations

Narayan et al., HEALTH AFFAIRS 31/1 (2012): 84–92

**Source**: Note 6 in text. **Notes**: ACE is angiotensin-converting enzyme. ARB is angiotensin receptor blocker. Look AHEAD is Action for Health in Diabetes.
Example: Early Detection

Annual risk of progression from prediabetes to diabetes very high (5-10%)

Today's restrictive screening policies
Up to 40-50% adults (US, EU) with diabetes …
Up to 93% adults (US) with prediabetes …
... are unaware of their status

- Detect prediabetes and intervene/treat
- Improve screening policies and introduce programmes
- Better risk stratification

Comorbidities important factor

Trade Offs in Health Care Systems

Cost-cutting Ststainability

Current Practice

Short term vs. long term view

Quality

Access

Best Practice

Future Best Practice

Need for „Dynamic efficiency“
- More effective and efficient interventions to facilitate long term affordability to society

➢ Adjust trade off on Quality, Access, Cost/Affordability

➢ Promote Research
➢ Incentivise Innovation
90b€ Direct and >98b€ Indirect Costs

Figure 5.3: Direct and indirect cost burden of diabetes in EU5 (2010 estimates, € million)

Source: Diabetes expenditure, burden of disease and management in 5 EU countries, LSE, Jan 2012
Role of Industry

- Healthy employees
- Partnership (PPP) UN Agencies, EC, Governments, health care providers and payors, NGO, patient organisations
- Advocacy and Support Health Literacy Screening initiatives

- Innovation and Research Investments in development of innovative preventative and treatment products
- Work with Governments promote policies enabling sustainable access and pricing strategies
Are Incentives Being Set Right?

- Alignment of incentives for payors and providers to focus on
  - Prevention, early detection and interventions
  - Effective and efficient interventions
  - Long term outcomes
- Measure and publish outcomes to improve quality

- Foster innovation through competition and contracting
- Reward innovation
- Effective Health Technology Assessment
  - across all types of interventions, new and old
  - broad perspective on value and cost
  - Dealing with uncertainty
What Drives Innovation?
A Perspective from the Pharmaceutical Industry

- Medical need
- Scientific advances
- Market incentives
- Innovation-friendly regulatory, economic and IPR framework
- Stable and predictable environment
Increasing Importance of Commercial Factors

- The commercial potential of the product is becoming more important earlier in the development process
  - Increasing focus on identifying whether differentiation ‘sufficient’ to justify price premium
  - Large primary care classes becoming genericised
- Lower returns to R&D as growth in expenditure slows
- Greater clinical costs on primary care products
- Focus of industry away from primary care to specialist markets
- Slow down in investment in R&D
- Focus on differentiated products
  - Towards novel mechanisms of action
  - Increasing attrition further
Tackling Diverse Incentives

Source: Working hypothesis by ME TF

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Conclusion

- We are at the crossroads: Aging societies, struggling economies – yet unprecedented scientific advance
- Traditional pharmaceutical business model is not sustainable: ever escalating R&D costs, declining R&D productivity, increasing regulatory and market access hurdles
- Need to take a more holistic approach: too much focus on cost, too little on dynamic efficiency
- New innovative therapies can offer solutions (healthy productive aging, driver of growth and competitiveness)
- Industry needs to live up to societal expectations:
  - Innovation
  - Value for money
  - Corporate social responsibility
„Achieving high value for patients must become the overarching goal of health care delivery, with value defined as the health outcomes achieved per dollar spent.“