GSK VACCINES: KEY GROWTH DRIVERS

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In development

Millions of children die from infectious diseases

Many of these deaths are preventable
By 2015 vaccines could reduce these deaths by 90%

Source: http://www.who.int/mediacentre/events/2006/g8summit/vaccines/en/
What have vaccines achieved so far?

- **SMALLPOX**: Eradicated
- **POLIO**: 99% reduction
- **MEASLES**: Dramatic reductions
- **TETANUS DIPHTHERIA RUBELLA MENINGITIS**: Significant reductions
- **Hib**: 90% reduction
Economic benefits of vaccines

In the **developing** world

- With the exception of clean drinking water, vaccines are the most cost-effective public health measure\(^1\)
- A 10-year gain in life expectancy translates into additional ~1% of annual growth of income\(^2\)

In the **developed** world

- For each birth cohort vaccinated, the US saves\(^3\)
  - $10 billion in direct medical costs
  - $33 billion in indirect costs

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2. Bloom, ESPID May 2005
3. Roush & Murphy JAMA 2007; 298: 2155-2163
## GSK vaccines: fastest growing part of GSK in 2009

<table>
<thead>
<tr>
<th>Category</th>
<th>2009 Sales</th>
<th>Share</th>
<th>Growth (CER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>£ 6,977m</td>
<td>25%</td>
<td>+5%</td>
</tr>
<tr>
<td>Consumer</td>
<td>£ 4,654m</td>
<td>16%</td>
<td>+7%</td>
</tr>
<tr>
<td>Anti-virals</td>
<td>£ 4,150m</td>
<td>15%</td>
<td>+12%</td>
</tr>
<tr>
<td><strong>Vaccines</strong></td>
<td><strong>£ 3,706m</strong></td>
<td><strong>13%</strong></td>
<td><strong>+30%</strong></td>
</tr>
<tr>
<td>CV &amp; Urogenital</td>
<td>£ 2,298m</td>
<td>8%</td>
<td>+8%</td>
</tr>
<tr>
<td>CNS</td>
<td>£ 1,870m</td>
<td>7%</td>
<td>-44%</td>
</tr>
<tr>
<td>Anti-bacterials</td>
<td>£ 1,592m</td>
<td>6%</td>
<td>+2%</td>
</tr>
<tr>
<td>Metabolic</td>
<td>£ 1,181m</td>
<td>4%</td>
<td>-14%</td>
</tr>
<tr>
<td>Oncology &amp; Emesis</td>
<td>£ 629m</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Stiefel</td>
<td>£ 248m</td>
<td>1%</td>
<td>n/a</td>
</tr>
<tr>
<td>Other</td>
<td>£ 1,063m</td>
<td>4%</td>
<td>+1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£ 28,368m</strong></td>
<td></td>
<td><strong>+3%</strong></td>
</tr>
</tbody>
</table>

Source: GSK 2009 Annual Report
GSK key vaccines: 2009 sales

- Rotarix: £282m
- Infanrix/Pediarix: £649m
- Cervarix: £187m
- Fluarix/FluLaval: £211m
- Boostrix: £139m
- Synflorix: £73m
- Pandemic Flu: £883m
- Hepatitis: £665m

2009 sales: £3.7 billion (+30%)

Growth rate is CER
Growth of base vaccines business plus contribution of new vaccines

All figures expressed at actual rates (includes H1N1 pandemic sales)
GSK vaccines: current key growth drivers

PRODUCTS
- **Rotarix** Approved 2005
- **Cervarix** Approved 2007
- **Synflorix** Approved 2009
- **Boostrix** Approved 2005

GEOGRAPHICAL
- **Emerging Markets**
  - Annual growth of Emerging Markets ‘middle classes’ equivalent to population of UK
  - Annual birth cohort in China equivalent to population of Australia
- **Japan**
  - Underdeveloped vaccine market
  - Non-Japanese companies make up just 4% of vaccine sales
- **US**
  - Potential for increased market share
Rotarix in 2010: continuing growth

- Approved in 116 countries
  
  *Filed in Japan (November 2009)*

- 2009 sales £282 million
  
  *(Q1 2010 sales £65 million +19%)*

- Geographic expansion into EM & Japan
  
  *US currently accounts for 60% of global market*

- WHO prequalification (June 2009)
  
  *Developing world data*

  *Significantly reduced severe rotavirus gastroenteritis in African babies*¹

Growth rate is CER

Rotarix and PCV update

- **Most frequently used rotavirus vaccine worldwide**
  - GSKs largest clinical trial programme (90,000 participants)
  - Excellent safety & efficacy profile: over 71 million doses distributed

- **March 2010: presence of PCV-1 material in Rotarix¹**
  - PCV-1 does not multiply in humans and is not known to cause any illness in humans
  - PCV-1 found in everyday pork products

- **FDA requested suspension of use in the US (15 March – 17 May)**
  - VRBPAC review of rotavirus vaccines (7 May)

- **Key regulatory authorities supportive of continued Rotarix use**
  - FDA
    - “Benefits of vaccinating infants worldwide against rotavirus disease clearly outweigh the theoretical risks associated with the presence of PCV”
  - EMA
    - “No evidence that the presence of PCV in Rotarix presents a risk to public health and that there is no need to restrict its use in the EU.”
  - WHO
    - “WHO does not recommend any change to use of Rotarix vaccine”

Rotarix: protection with two oral doses

Developing world
Saves lives
- 95% of children are infected with rotavirus by the age of 5 years\(^1\)

Developed world
Reduces hospitalisation
- Annual cost of rotavirus gastroenteritis hospitalisations in the EU is >€100 million\(^2\)

Immunisation against rotavirus gastroenteritis
Differentiate from Rotateq
Only Rotarix completes the course at the earliest possible age

\(^1\)Linhares and Bresee Pan Am J Public Health 2000; 8: 305-331; \(^2\)Gray et al JPGN 2008; 46: S24–31
Impact of rotavirus vaccination: Brazil

Gastroenteritis hospitalizations (1998-2007)

Source: Datasus, Brazil: GSK Study 112368 data on file; ESPID 2009
Rotarix: rotavirus UMV programmes

**Countries with national/regional rotavirus immunization**
- **Rotarix™**: Belgium, Luxembourg, Austria, Germany (3 Federal States), Italy (Puglia), Finland
- **RotaTeq™**: Bahrain, Qatar, Oman, Australia

**Countries without national rotavirus immunization**
- **Rotarix™**: Bahrain, Qatar, Oman
- **RotaTeq™**: USA, Netherlands, Luxembourg, Austria, Germany (3 Federal States), Italy (Puglia)

- **Rotarix™**:
  - Brazil
  - El Salvador
  - Mexico
  - Panama
  - Venezuela
  - Ecuador
  - Peru
  - Colombia
  - Bolivia (GAVI)
  - Honduras (GAVI)
  - Paraguay (2010)

- **RotaTeq™**:
  - Nicaragua
  - Guyana (GAVI)
  - Cayman Islands

[Map showing countries with and without rotavirus immunization programs]
Cervarix in 2010

- Approved in 110 countries
  Including US and Japan (October 2009)

- 2009 sales £187 million (+38%)
  Q1 2010 sales £77 million (+60%)

- Over half of competitive tenders won
  Over two-thirds by volume

- WHO Prequalification (July 2009)
  Global access to Cervarix via UNICEF & GAVI

Growth rate is CER
High efficacy against HPV-16/18 confirmed & significant protection beyond HPV-16/18

Superior immune profile

Continued efficacy: 8.4 yrs so far

Long-term safety

Significant new data presented and published
Cervarix: the future

Current global HPV vaccine market currently approx. £1.3 billion

Significant potential in Japan, US & International
First cervical cancer vaccine approved in Japan

Seeking improved European & International label

Globally only 5% of 12-18 year old girls currently vaccinated against HPV

Potential individual benefit for up to 99% of 18-25 year old women
Significant tender wins and market share gains
Q1 2010 sales £45 million

Long-term contract signed with Brazilian government
€1.5 billion over 10 years

Advance Market Commitment (AMC) for pneumococcal vaccines launched (March 2010)
300 million doses of Synflorix over 10 years

WHO prequalification (October 2009)
Enables UN agency purchase
Synflorix: future growth

- Increasing market share range in key retail markets
- Won over two-thirds of competitive tenders (by volume)
- Additional launches & new UMVs
- Proven efficacy against acute otitis media (AOM)
**Boostrix: significant opportunity**

- Despite effective childhood DTPa vaccination programmes, immunity wanes, and the number of cases is increasing
- dTpa and Td booster markets growing
  - *Boostrix* sales £139 million (+73%)
- Future dTPa market potential
  - Switch of adolescent booster programmes from dT to dTPa
  - Development of adult vaccination strategies (US, France & Germany)
  - Switch of adult Td boosters to dTPa
GSK vaccines in 2010

- A world leader in vaccines
- One of the broadest portfolios and fastest growing vaccines businesses in the world
- Unique expertise in adjuvant technology
- Strong pipeline including innovative therapeutic vaccine approaches
- Global footprint: ideally positioned to capture a significant market share in all territories