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Developing Countries Vaccine Manufacturers Network

APAC Vaccines Market: A Brief Review

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IQVIA Consulting Group

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Japan is the largest market amongst the ~\$3B APAC vaccine market; other markets are smaller in size but faster growing

APAC vaccine sales by country



Insights

- Japan is the largest vaccine market in APAC (>50% of market value); however Japan's growth has partially stagnated recently as vaccine penetration stabilized
- China and South-East Asia have had tremendous growth at >10% per year
- Growth driven by a few factors:
 - rising demand for better healthcare services
 - improved affordability of healthcare
 - expanded public health spending
 - greater awareness of immunization benefits

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Source: IQVIA MIDAS, IQVIA analysis

APAC Vaccine Market Landscape

Viewed by vaccine type, a more nuanced picture emerges; vaccine sales value grew at 2% while sales volume declined

APAC vaccine market overview



Insights

- The APAC vaccine market is ~\$3 billion USD, with an average growth of 2% annually between 2012-17
- In 2013 and 2014, a reduction in total vaccine sales was observed, mainly caused by the falling overall demand of viral and combination vaccines
- Volume decline is mainly driven by viral vaccines
- Viral vaccines still have the highest market share (over 50%) followed by bacterial vaccines

APAC includes Australia, Bangladesh, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam Source: IQVIA MIDAS, IQVIA analysis



APAC Vaccine Market Landscape

Across APAC, influenza and pneumococcal vaccines are the top sellers, while the varicella vaccine is the fastest growing...

APAC vaccine sales by therapeutic area



APAC vaccines sales by therapy area (sales in value, USD Bn)

 APAC vaccine sales driven by influenza and pneumococcal vaccines

 Influenza vaccines sales is valued at ~\$0.7 Bn and has grown 4% per year

Insights

- Pneumococcal vaccines sales is valued at ~\$0.5 Bn and has grown 10% per year
- Highest sales increase seen for varicella vaccines with a CAGR of ~25%
- Sales decline for measles and mumps vaccines, haemophilus B vaccines, and HPV vaccines

Source: IQVIA MIDAS, IQVIA analysis

APAC Vaccine Market Landscape

Supplying the growing market are a handful of players (primarily MNCs), with MSD and Abbott showing the highest growth...

APAC vaccines competitive landscape



Historical growth vs. market share of top 10 companies by sales

1. Domestic refers to companies primarily present in their domestic market; regional refers to companies present in at least 3 countries in the same region; MNCs refers to companies with presence across different regions Source: IQVIA MIDAS 2017 sales value

APAC Vaccine Market Landscape

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Across these companies, the most successful products include Prevnar and Pneumovax (bacterial) and Vac (Influenza)

Top products and corporations

| | No.1 Selling Product | | | No.2 Selling Product | | | | No.3 Selling Product | | |
|---|-------------------------------------|----------------------|-----------------|-------------------------|----|----------------|------------------|--------------------------------------|-----------------------|-----------------|
| | Product | Company | Sales (\$Mn) | Produ | ct | Company | Sales (\$Mn) | Product | Company | Sales (\$Mn) |
| Combination vaccine | Tetrabik (Tetanus combi) | Mitsubishi Tanabe | 78.9 | Quattrov (Tetanus co | | Kaketsuken | 51.9 | Squarekids (Tetanus combi) | Daiichi Sankyo | 51.2 |
| Bacterial vaccine | Prevnar (Pneumococcal) | Pfizer | 355.6 | Pneumov (Pneumoco | | Merck & Co | 123.4 | ACT HIB (Haemophilus B) | Daiichi Sankyo | 116.5 |
| Viral | Vac influenza (influenza) | Kaketsuken | 108.9 | Vac influe (influenz | | Takeda | 96.9 | Varivax (varicella) | Merck & Co. | 87.7 |
| 1. Domestic refers to companies primarily present in their domestic market; regional refers to companies present in at least 3 countries in the same region; MNCs refers to companies with presence across different regions Source: IQVIA MIDAS 2017 sales value APAC Vaccine Market Landscape | | | | | | MNCs refers to | MNC ¹ | Regional ¹ | Domestic ¹ | |

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Three key trends have a positive impact on the global and APAC vaccines market



Vaccination coverage increased in most APAC countries and is generally above the global average

Trends: Greater Coverage



Vaccines Coverage Rate (DTP3 vaccine coverage as proxy for overall vaccination coverage³)

Note: Due to the WHO listing DTP as a part of the routine immunization schedule for all countries in 2012, the DTP3 (completed all 3 doses) vaccine is used as a proxy to gauge the level of vaccine coverage in each country

Source: IQVIA MIDAS, IQVIA analysis APAC Vaccine Market Landscape

Insights

- Increase in vaccine coverage in most APAC countries in the past 10 years
- In more developed countries, i.e. Australia and Singapore, coverage maintained at the mid to high 90s
- Coverage for less developed countries, i.e. Philippines and Indonesia, fluctuated but have generally reached more than 85% by 2016
- **Pakistan is lagging behind** due to supply chain inefficiencies and weaker infrastructure (e.g. cold chain, storage)

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Vaccination coverage has also increased because it is on top of the global and local health agenda

Trends: Greater Coverage

Immunization on top of the agenda



WHO initiatives

- Global Vaccine Action Plan (GVAP)
- Global Immunization Vision and Strategy (GIVS)

Global Vaccine Action Plan

• GVAP aims to **strengthen routine immunization** and thereby prevent millions of deaths through more equitable access to vaccines by 2020

Global Immunization Vision and Strategy

 GIVS aims to control morbidity and mortality from vaccinepreventable diseases and helps countries to immunize more people with a greater range of vaccines

Growing immunization support



Growth support

- National and regional government focus on vaccination
- GAVI Alliance, Gates
 Foundation and donors

Government focus

 In more developed APAC countries, government focus on vaccinations has increased coverage of strains on national immunization programs

GAVI Alliance

• In developing APAC countries, the GAVI Alliance contributed to the **funding of immunization**



For example, WHO's program to eliminate measles and strengthen health services in Cambodia has helped move the numbers



Situation



+50%

Cambodia **almost doubled measles immunization** in the ten years since 2000



20% But by 2011, **20% of children** were **still not getting** the first of two **measles vaccine**

Action

Immunize more children against measles

WHO helped Cambodia to:

- Check measles vaccination status
- Map out communities at risk of missing immunization
- Alert the community to upcoming measles immunizations

Improve access to other health services

- When children came in for their measles vaccination, health officials checked vaccination against other diseases
- Children received missing immunizations

Results

1 More children immunized against measles and improved access to other health services

2 No measles cases in 2012 – down from 700 reported cases in 2011

Source: WHO: Eliminating measles and strengthening health services in Cambodia APAC Vaccine Market Landscape





² The global vaccine pipeline is promising with candidate products targeting other debilitating diseases such as HIV and malaria

Trends: Growing Entrants



Insights

- Across all disease areas, 214 vaccines are in various phases of development
- Top three disease areas with candidate products are HIV/AIDS (40), malaria (32) and pneumococcal infections (27)
- There are 20 vaccines in Phase III development stage, with most phase III products for pneumococcal infections and rabies

³ An evolving vaccine ecosystem including new modes of administration will continue to drive improvements in outcomes

Trends: Technological Advancements

APAC Vaccine Market Landscape

| New Disease Areas Infectious diseases Vaccines for new disease targets (i.e. HIV) More effective vaccines in areas where vaccines already exist (i.e. Hepatitis B) Cancer Expansion of cancer treatment vaccines (immunotherapy) | New modes of administration Inhaled vaccines Nasal spray delivers a vaccine (i.e. influenza vaccine) Patch Patch with tiny needles delivers a vaccine (especially of interest in remote areas as trained medical person is not required) |
|---|--|
| Innovative vaccine types Recombinant vaccines Attenuated virus or bacterium used as a vector for an immunogenic protein from another infectious agent DNA vaccines DNA coding for an antigen is injected into an individual and produces an immune response | Advanced vaccine storage and supply Storage Development of vaccines that can be stored at higher temperatures |
| Source: IOVIA MIDAS, IOVIA analysis | |

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Growing immunization rates and new vaccines types are key growth drivers for vaccines

Vaccines Opportunities

| C | Growth Drivers and Opportunities | Details | | | | |
|---|---------------------------------------|--|--|--|--|--|
| [] | Improving immunization awareness | Rising awareness of vaccination benefits in emerging markets is further expected to foster the vaccine market growth in APAC | | | | |
| £S€ | Rise in consumer affordability | Consumer affordability growth, especially in emerging markets, will drive vaccine market sales, especially for self-payed (Category II) vaccines | | | | |
| JEEK | Emergence of innovative vaccine types | Inactivated vaccines are expected to dominate the market owing to its benefits, including a long-shelf life and high stability DNA vaccines are expected grow fast, mainly due to high specificity and reduced risk of genome integration as compared to traditional vaccines | | | | |
| | New vaccines for fatal diseases | High number of promising compounds in the vaccine pipeline Vaccines in Phase III clinical trials include fatal diseases like HIV/AIDS and malaria | | | | |
| | | | | | | |
| Source: IQVIA MIDAS, IQVIA APAC Vaccine Market Lands | , | | | | | |

Lack of awareness and customer confidence are the major challenges in the APAC vaccines market

Vaccines Challenges

| | Challenges | Details |
|---|---------------------------------------|--|
| | Lack of awareness | Limited awareness of infectious diseases and prevention, especially in emerging markets |
| | Inadequate delivery infrastructure | Limited physician and hospital accessibility in emerging markets constrains access to vaccines |
| 8 | Consumer trust and confidence | Continued trust in public and private vaccine systems is critical China's 2018 vaccine contamination / quality issues triggered a flight to quality with a push by parents for more Australian vaccines |
| | Perception of limited value | Individuals are still unconvinced that vaccine offers protection or that it is safe Mismatch in perception between price and value |
| | | |
| Source: IQVIA MIDAS, IQVIA PAC Vaccine Market Landso | | ≣IQVIA™ |

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