

GVIRF 2016: Evolving Global Vaccine Markets	
Rapporteurs: S. Bishen, A. Hwang	
Session Outline	<p>Chair: K. Neuzil</p> <p>Presentations: A. Batson</p> <p>Discussants: M. Malhame, A. Alsalhani, M. Makhoana, H. Deehan, V. Oriol</p> <p>Closing Remarks: K. Neuzil</p>
Objectives of the session	To discuss the evolution of vaccine markets in terms of market segments and product lifecycles, describe ways to practically address market challenges and consider innovative products from a market perspective.
Main outcome	Greater coordination is needed to align global vaccine supply with demand to accelerate uptake of new vaccines, promote affordable pricing, and minimize the risk of supply shortages. UNICEF, Gavi, and others are beginning to compile global demand forecasts that will play a key role in this coordination.
Summary	<p>Global vaccine markets can be divided into 4 broad segments in terms of income and mortality rate. High income countries (HIC), including the US, Europe, and Japan, pay higher prices than the rest of the world. Low income countries (LIC) are served by Gavi and pay lower prices. Middle income countries (MIC) have a private sector segment and a public sector segment: both pay intermediate prices, with the private sector costs slightly higher than the public sector. In addition to these major markets, NGOs procure vaccines for emergency and humanitarian use. The global vaccine market has grown from US\$ 6B in 2000 to US\$ 33B in 2014, approximately 65% of this value coming from HICs.</p> <p>Markets are dynamic due to the complex interplay of demand, supply, and financing.</p> <p>Demand for a vaccine is based on the nature of the disease and the perceived safety and value for money (cost effectiveness) of the product. Manufacturers must make substantial at-risk investments in product development and manufacturing capacity well in advance of actual demand. Lowering risks by mechanisms such as demand forecasts, Advance Market Commitments, and Advance Purchase Commitments can help align demand and supply and ensure that market needs are met in a timely way. Pooled procurement mechanisms, such as provided by UNICEF or the PAHO revolving fund, help to consolidate demand and coordinate with suppliers, ensuring that country needs can be met.</p> <p>There are 4 major multinational vaccine suppliers and many diverse developing country vaccine manufacturers (DCVMs) serving global, regional and national markets. Supply volume and price are interrelated. As volume increases, a manufacturer becomes more willing to discount the product for lower income markets (“tiered pricing”) due to lower per-dose costs. Competition from new entrants, especially DCVMs with lower manufacturing costs, can also lower prices while adding to total capacity. However, once a market becomes too fragmented, with volumes split across manufacturers or product presentations, economies of scale are lost, and prices will increase or manufacturers will exit the market. This point of diminishing return varies by vaccine.</p>

	<p>Financing, whether from national budgets, global donors, or private payers, reflects the perceived value of the vaccine. Evidence of safety and cost effectiveness is needed to inform financing decisions and address vaccine hesitancy. This is especially important for countries graduating from Gavi support, which must rapidly increase their budget for vaccine purchase.</p> <p>These interactions can be positive (virtuous) or negative (vicious). A vicious cycle results from uncertainty in demand. Manufacturers limit their capacity investments, restricting supply and elevating prices. High prices mean poor cost-effectiveness, so funding doesn't materialize and demand lags. Overall, the market fails to achieve the promised health impact or profits. In a virtuous cycle, clarity on demand leads to appropriately sized production and lower costs. This improves value, attracts financing and stimulates demand. Growing demand leads to capacity investment, leading to a mature market that serves more people with greater health impact.</p> <p>Historically it has taken 15 years or more for new products to progress from launch to maturation, and HICs have had fast uptake compared to LICs. To help accelerate this process, Gavi engages in market shaping, for example providing assurances of demand in LICs in exchange for tiered prices. Donors such as the Bill & Melinda Gates Foundation are accelerating market maturation by providing "push" funding to new entrants. As a result, the lag in uptake between HIC and LIC has been shrunk to less than 5 years.</p> <p>Many challenges remain in global vaccine markets. Supply shortages occur when there is insufficient supply to meet increasing demand, and stock-outs due to production issues and market shifts are inevitable. Good global intelligence to understand demand and supply risks can help to prevent shortages. When shortages do occur, cooperation among users can mitigate their impact. MICs have fewer resources than HICs and lack coordinating mechanisms such as Gavi to consolidate demand and improve affordability. UNICEF is helping to address this gap through annual global demand forecasts, and by establishing a Vaccine Procurement Practitioners' Exchange to promote coordination and best practices. Some vaccines are only needed in LIC markets, and are higher risk due to the lack of HIC revenues. Successes with MenAfriVac and Japanese encephalitis vaccines show that push funding and assured demand can help to bring these vaccines to market.</p>
<p>Key references or quotes</p>	<p>There are 3 objectives in market shaping: decreasing vaccine prices, attracting innovation, and having multiple suppliers for supply security. These 3 objectives are linked, and it's extremely difficult to maximize all 3 at the same time. – V. Oriol</p>