

Figure 5 Evolution of the vaccine market structure: past and future.

vaccine preventable. This includes specific “at-risk” populations such as deployed military contingents. The overall consequence of these demographic trends is an ever-expanding demand for existing and new vaccines and a market structure where the balance of sales is progressively turning to adult/senior immunization, as opposed to infants’ vaccination (Fig. 6).

Prevention

Among other key factors impacting the demand for vaccines is the realization that prevention makes sense both from a medical standpoint (avoiding disease, resistance to therapy, side effects of drugs, etc.) and from a societal and economic standpoint (pay a little now to reduce the public health bill down the road both in terms of direct and indirect costs). In this respect, a better recognition of the “value” of vaccines both in the developing and developed worlds will contribute to expanded vaccination coverage and to increased research efforts for new vaccines (22). Greater use of pharmaco-economic studies should also increasingly justify the expansion of immunization.

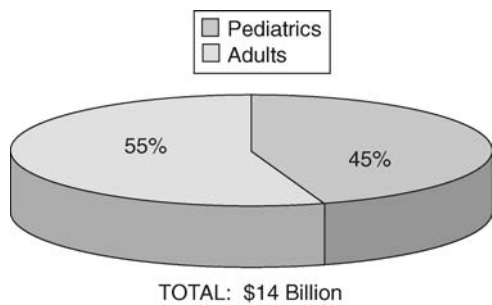


Figure 6 Global vaccine market age segmentation in 2008 (estimated). In 2015, adolescent and adult vaccines are expected to constitute 60% of market value.

Equity

In a global world, it is becoming increasingly unacceptable to see children in poor countries continue to die from vaccine-preventable diseases when the needed vaccines exist and can often be obtained at reduced prices. Mobilization of the international community, including the World Bank, WHO, UNICEF, and a number of public and private organizations such as the Gates Foundation, and industry, in the late 1990s culminated in the formation of GAVI (23–25). This alliance of partners is demonstrating that the whole world can benefit from the tremendous progress of vaccinology (13,26). Industry is convinced that this initiative has a good chance of achieving sustained success because all the actors are present; a methodology exists to plan and implement activities and to guarantee that the results are monitored. Importantly, funding has been available from the onset to strengthen immunization services and to finance the introduction of new vaccines for the world’s least developed countries through financing provided by the Vaccine Fund (25,27). In chapter 7, additional details are provided on the financing mechanisms that have been developed since 2000 to achieve the goal of universal immunization globally.

Bioterrorism

The emergence of bioterrorism in the late 1990s and the cataclysmic events of “September 11, 2001” stimulated demand for vaccines against bacteria or viruses that can be used as agents in civilian bioterror, including anthrax (28,29). This has led many authorities to question whether immunization could ever be stopped for diseases such as polio where final eradication is in sight, not to mention more exotic diseases.

Health Threats

In a globalized world, where pandemics can spread very fast (migrations, transports, viral mutations, etc.), diseases such as severe acute respiratory syndrome (SARS) and avian influenza have triggered new initiatives by health authorities. For influenza, whether nationally or internationally, these initiatives have led to a major increase in the market size for these vaccines and in considerable amounts of funding for research (30). In concert, all the above-mentioned factors indicate that the demand for existing and new vaccines will remain strong in the foreseeable future.

THE VACCINE INDUSTRY

The vaccine industry is fairly young. It finds its origin in national public institutes or companies that were set up to ensure that the basic health needs would be provided to the population, mostly for the prevention of diphtheria, tetanus, pertussis, and poliomyelitis. With the development of additional new bacterial and viral vaccines, recombinant vaccines and, more recently, new technologies, and with the need to scale up production and invest heavily in capacity and compliance, a number of local producers—whether in developed or in less developed countries—have disappeared or been acquired. As a consequence, the vaccine industry has become increasingly concentrated among a few key players (1,9,10,31) (Fig. 7).

Sanofi Pasteur is probably the oldest one among the major actors, with the broadest vaccine range and geographical coverage. It results from the merger in the late 1980s of Institut Mérieux, Pasteur Vaccins, and Connaught Laboratories