

Figure 1.2. New systemic antibacterial agents approved by the US Food and Drug Administration in 5-year periods, through 2012. From Boucher *et al.* (2013), with permission.

the spread of existing clones. This change has led one leading health authority to liken the future impact of AMR on society to that of terrorism (Davies, 2013). Unlike antiviral drug development, where there have been major recent discoveries and new drug development, the development of new antibiotic classes has near stalled, with few major solutions in sight (Bouchier *et al.* 2014; see [Figure 1.2](#)). It is in this context that the WHO and other key authorities have reemphasized the need to focus on key infection prevention and control (IPC) practices, not just to prevent hospital-acquired infections (HAIs) but also as a means of controlling the spread of AMR (Davies, 2013; WHO, 2015; White House, 2015; Australian Government, 2015; O'Neill, 2016). Reinvestment in national IPC programs was a recent World Health

Assembly resolution, and AMR was the subject of a UN General Assembly High-Level Meeting of Heads of State in 2016 (WHO, 2015; Laxminarayan *et al.*, 2016a). National programs to improve healthcare worker hand hygiene compliance, hospital cleaning, management of invasive devices, and other IPC activities have been clearly shown to reduce the risk of AMR (Pittet *et al.*, 2000; Grayson *et al.*, 2008; Grayson *et al.*, 2011; Mitchell *et al.*, 2014; Davies, 2013; WHO, 2015; White House, 2015; Australian Government, 2015; O'Neill, 2016; see [Figure 1.3](#)), but they generally require effective central coordination and maintenance to sustain behavioral change in a hospital environment where throughput parameters are often prioritized ahead of quality and safety metrics.

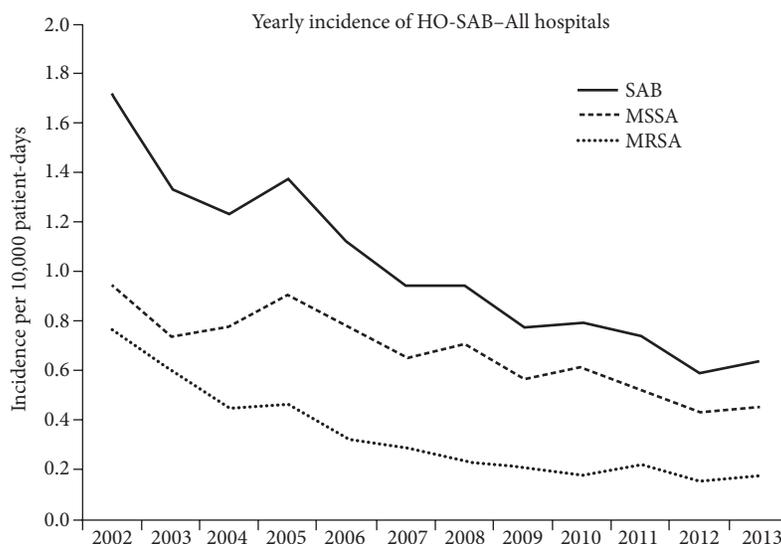


Figure 1.3. Reduction in Australian national rates of hospital-onset staphylococcal bacteriemia associated with national interventions, including introduction of national hand hygiene initiative and other infection prevention and control programs. (Reprinted with permission from Mitchell *et al.*, 2014)