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Commentary

What are the main drivers for public policies to prevent healthcare-associated infections?

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Healthcare-associated infections (HCAIs) are unintended consequences of care which are recognized as a public health problem [1,2]. They demand implementation of preventive measures and many large-scale institutional changes. However, around two-thirds of organizations' efforts to implement changes fail due to barriers at various levels of healthcare delivery such as the provider team, the healthcare organization, the market, patients, and policy [3].

The (new) discipline of implementation science aims to understand the process of implementation; not only to evaluate what works, but also to assess how it works and in which context. This knowledge can be helpful in optimizing benefits, prolonging sustainability and in promoting the dissemination of interventions into other contexts [4].

When analysing the implementation of preventive measures it is helpful to use theoretical frameworks such as the Consolidated Framework for Implementation Research (CFIR). Elements within the CFIR include the intervention itself, the individuals involved, the inner setting, the outer setting, and

the process. All of these elements are influenced by public policies [3]. Therefore, public policy is key to the success of implementation of measures to prevent HCAIs.

There are complex power relationships underpinning policy formulations which are dynamic and evolving. Overall, public policies tend to be more reactive than proactive in responding to public demands. Agenda setting is the first stage in the public policy process, being seen as a list of issues to which policy-makers pay serious attention [5]. To move a topic higher up the agenda involves three elements: problems, proposals, and politics. These elements combine to create a 'policy window' [5]. In a policy window, decision-makers choose to pay attention to a specific topic. However, why one topic gets attention while others do not, is a matter of study. This choice is usually influenced by focusing events, which are 'dramatic episodes that attract attention' [6]. This paper aims to discuss leading focusing events, their limitations, and other potential drivers for public policies to prevent HCAI.

Worldwide, the focusing events that create policy windows in HCAI prevention have included: nosocomial outbreaks; individual dramas of celebrities who have acquired HCAIs; major community epidemics and pandemics that affect infection control at healthcare setting level; and antimicrobial resistance.

Nosocomial outbreaks are the most common focusing events as they have considerable potential to capture the attention of both the media and the public, thus attracting the attention of politicians. Nosocomial outbreaks have been focusing events since Ignaz Semmelweis, due to the deaths of women by puerperal infections in Vienna, and Florence Nightingale, due to the deaths of British soldiers in the Crimean war. Semmelweis used a scientific demonstration to implement a new prevention strategy, but despite a first successful experience, his work faded away relatively quickly, with no further improvement. Conversely, Nightingale made better use of the policy window by using a scientific demonstration in combination with her personal influence and administrative empowerment to pursue future developments [7]. In her time, Nightingale was

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considered a heroine by British soldiers, and by the media. She wrote many letters to politicians about the improvement of care in hospitals not only in Britain but also in India, where she influenced sanitary reform.

Outbreaks have served as focusing events, resulting in the development of national programmes to prevent HCAI, in for example Chile and Israel [8,9]. However, nosocomial outbreaks may have limitations as focusing events to create a long-lasting policy window. This is because infection prevention professionals are (in general) unlikely to notify outbreaks, and outbreaks do not represent the real burden of HCAI. Furthermore, the sustainability of actions largely depends on the context, and frequently efforts are only addressed to solve the immediate problem with no follow-up.

An example of the personal drama of celebrity occurred in 1985 in Brazil, when President Tancredo Neves died, supposedly due to HCAI. At that time, Brazil already had a national standard for hospital infection control committees (since 1983) but with no effective adherence in many hospitals. Only after the president's death were there more attempts to audit preventive structures in hospitals. Nevertheless this potential focusing event was forgotten and large-scale improvement did not happen as hoped. A celebrity drama may produce an initial commotion, but in general it does not last long enough to promote sustained improvement. In fact, more than 10 years later, another severe nosocomial outbreak which caused the deaths of 60 haemodialysis patients in Caruaru, Northwest region, emerged as a focusing event [10]. This highlighted the urgent need for sanitary audits to evaluate the quality of healthcare, and so, after many years of hesitancy, the national programme for HCAI prevention was transferred in 1999 to the Brazilian National Sanitary Agency which launched progressive action to achieve standardization and begin monitoring and evaluation [11].

Pandemics and epidemics have also increased awareness of HCAI prevention, mainly due to concerns surrounding additional risks to healthcare personnel. These concerns were exemplified during the first years of the HIV epidemic, which brought much learning to infection prevention in healthcare. Infection prevention was further boosted by media coverage during other pandemics including severe acute respiratory syndrome, influenza, Ebola and, more recently, Middle East respiratory syndrome [12]. High-profile epidemics have highlighted the pivotal role of infection prevention and control programmes in healthcare services to international bodies such as the World Health Organization (WHO). These events also raise awareness of preventive measures among healthcare workers as they have an increased risk of contracting infectious diseases. Pandemics can reinforce standard precautions, especially around the use of gloves, alcohol hand rubs, and single-use devices. The increased uptake of such measures increases the use of hygiene-related products, which tends to amplify the number of suppliers and large-scale production, thus generating a reduction in their costs. Reduction of costs should minimize hesitation from administrators in purchasing these items at the necessary quantity.

Finally, a potential focusing event is the emergence of antimicrobial resistance (AMR). Currently considered as a global threat, combating AMR demands co-ordinated effort across countries. This is a great policy window to drive efforts in infection prevention with special attention to low- and middle-income countries where AMR is elevated and where

HCAI may be 20-fold higher than in high-income countries [1]. Although AMR is a topic of interest shared by multiple groups, including patients, professionals, the health industry and other industries (such as farming), perspectives may be controversial or contradictory among stakeholders.

Other factors can be drivers (or influence them) for public policy to prevent HCAI. Media coverage is a powerful tool, both for good and evil. For instance, media coverage is one of the reasons hospitals do not report outbreaks to health authorities [13]. Media can be used politically by opposition groups to demonstrate poor management of public hospitals and by lobby groups in defence of or against public or private services [14].

The health industry lobby can also affect drivers for public policy in HCAI. This lobby exerts influence on both politicians and society, often through media coverage. Frequently, the industry lobby presents 'silver bullet' technologies to politicians and hospital managers as the ultimate weapon to defeat HCAs.

International bodies may not act as direct drivers but may have a strong influence upon them. WHO has a long history of work against pandemics and epidemics. Currently, WHO is putting much effort into combating HCAI and AMR [15–17]. The European Union is also addressing this issue by promoting HCAI prevention and measures against AMR by means of inter-country surveillance and training programmes [18,19].

Researchers and professionals often think that scientific evidence is a driver for promoting public policies addressed to prevent HCAI. Unfortunately, scientific evidence does not reach a wide public and is rarely in the media. According to Boyce *et al.*, 'scientific articles, even those with the highest number of citations, have negligible influence on newspaper coverage' [20]. It is proposed that scientific evidence would have greater effect during a policy window if it were used by researchers and professionals to demonstrate improvement in the quality of health with minimal economic impact. One can argue that the wider public might be a driver for public policies in HCAI. However, as with other issues, the public does not usually generate robust movements unless there is a substantial financial cost. Often, the public do not differentiate between an isolated clinical tragedy and a healthcare crisis. Society and professionals may have different perceptions about this problem and policy alternatives to solve it. For healthcare professionals, especially physicians, infection prevention is often seen as an intrusion because measures interfere with their work. However, it is possible that the worldwide movement for patient safety will lead to a change in paradigms [15].

Seemingly, the understanding of health as a concept adopted by society as a whole may be influential on the potential drivers. Health can be understood as a commodity or as a citizen's right depending on the values of the society. This affects access to healthcare; in countries where access is arduous, the quality of care provided can be seen as a secondary issue.

In conclusion, healthcare professionals and organizations should pay attention to factors that potentially create policy windows that may favour the implementation process. They should be prepared to act quickly and to use all their knowledge and experience, to create alternatives for sustainable public policy for effective HCAI prevention and control programmes.

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References

- [1] Allegranzi B, Bagheri Nejad S, Combescure C, Graafmans W, Attar H, Donaldson L, et al. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. *Lancet* 2011;377:228–41.
- [2] Pittet D, Allegranzi B, Storr J, Bagheri Nejad S, Dziekan G, Leotsakos A, et al. Infection control as a major World Health Organization priority for developing countries. *J Hosp Infect* 2008;68:285–92.
- [3] Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci* 2009;4:50.
- [4] Bauer MS, Damschroder L, Hagedorn H, Smith J, Kilbourne AM. An introduction to implementation science for the non-specialist. *BMC Psychol* 2015;3:32.
- [5] Kingdon JW. Agenda, alternatives and public policies. 2nd ed. New York: Longman; 1995. p. 254.
- [6] Béland D. Ideas and social policy: an institutional perspective. *Social Policy Admin* 2005;39:1–18.
- [7] Gill CJ, Gill GC. Nightingale in Scutari: her legacy reexamined. *Clin Infect Dis* 2005;40:1799–805.
- [8] Schwaber MJ, Carmeli Y. The impact of a carbapenem-resistant Enterobacteriaceae outbreak on facilitating development of a national infrastructure for infection control in Israel. *Clin Infect Dis* 2017;65:2144–9.
- [9] Nogueira-Jr C, Padoveze MC. Public policies on healthcare associated infections: a case study of three countries. *Health Policy* 2018;122:991–1000.
- [10] Pouria S, de Andrade A, Barbosa J, Cavalcanti RL, Barreto VT, Ward CJ, et al. Fatal microcystin intoxication in haemodialysis unit in Caruaru, Brazil. *Lancet* 1998;352:21–6.
- [11] Padoveze MC, Melo S, Bishop S, Poveda VB, Fortaleza C. Public policies on healthcare-associated infections: a Brazil and UK case study. *Rev Saude Publica* 2017;51:119.
- [12] Agua-Agum J, Allegranzi B, Ariyaratnam A, Aylward R, Blake IM, Barboza P, et al. After Ebola in West Africa – unpredictable risks, preventable epidemics. *N Engl J Med* 2016;375:587–96.
- [13] Maciel ALP, de Carvalho BA, Timmons S, Padoveze MC. Barriers to investigating and reporting nosocomial outbreaks to health authorities in São Paulo, Brazil: a mixed methods approach. *J Hosp Infect* 2016;94:330–7.
- [14] Greener I. Understanding NHS reform: the policy-transfer, social learning, and path-dependency perspectives. *Int J Policy Admin* 2002;15:161–83.
- [15] World Health Organization. World alliance for patient safety. Global patient safety challenge: 2005–2006. Geneva: WHO; 2005. Available at: http://www.who.int/patientsafety/events/05/GPSC_Launch_ENGLISH_FINAL.pdf [last accessed December 2018].
- [16] World Health Organization. The evolving threat of antimicrobial resistance: options for action. Geneva: WHO; 2012. p. 110. Available at: http://apps.who.int/iris/bitstream/10665/44812/1/9789241503181_eng.pdf [last accessed December 2017].
- [17] World Health Organization. Guidelines on core components of infection control programmes at the national and acute health care facility level. Geneva: WHO; 2016. p. 91.
- [18] Brusaferrro S, Arnoldo L, Cattani G, Fabbro E, Cookson B, Gallagher R, et al. Harmonizing and supporting infection control training in Europe. *J Hosp Infect* 2015;89:351–6.
- [19] Hansen S, Zingg W, Ahmad R, Kyratsis Y, Behnke M, Schwab F, et al. Organization of infection control in European hospitals. *J Hosp Infect* 2015;91:338–45.
- [20] Boyce T, Murray E, Holmes A. What are the drivers of the UK media coverage of methicillin-resistant *Staphylococcus aureus*, the inter-relationships and relative influences? *J Hosp Infect* 2009;73:400–7.