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## Global infection prevention and control priorities 2018–22: a call for action



The Ebola virus disease outbreak in west Africa and the rapid spread of other emerging viruses, such as the severe acute respiratory syndrome or the Middle East respiratory syndrome coronaviruses, showed how limited or non-existent infection prevention and control (IPC) programmes, combined with an inadequate water supply, poor sanitation, and a weak hygiene infrastructure in health facilities, can threaten global health security. In such outbreaks, instead of serving as points where disease was controlled, health-care facilities became dangerous places for outbreak amplification among staff and patients and transmission back to communities. According to WHO, defective IPC practices during everyday health-care delivery also cause harm to hundreds of millions of patients worldwide every year.<sup>1,2</sup> The European Centre for Disease Prevention and Control estimated that more than 2.6 million new cases of health-care-associated infection occur every year in Europe, with a cumulative burden estimated in disability-adjusted-life-years that is higher than all other reported 32 communicable diseases.<sup>3</sup> The burden of health-care-associated infections was also recently highlighted in southeast Asian countries.<sup>4</sup> Many health systems fail to build strong foundations to reduce the risks and spread of health-care-associated outbreaks. They also tolerate an unacceptably poor level of IPC in everyday practice.

It is now urgent to consider IPC capacity building and actual implementation as global health priorities. This would create a unique opportunity to make IPC a strong contributor to the achievement of the health-related UN's Sustainable Development Goals (particularly, 3.1-3, 3.b, 3.d, and 6), including quality universal health coverage (3.8).<sup>5</sup> It would also help effective implementation of other major global health priorities, including the International Health Regulations, antimicrobial resistance (AMR) action plans, patient and health worker safety, and integrated people-centred care.<sup>6,7</sup>

Among its efforts in this field, WHO coordinates the Global IPC (GIPC) Network. This brings together major IPC organisations with the aim to enhance local, national, and international collaboration. It also supports country efforts in strengthening IPC systems

and programmes, outbreak preparedness and response, and capacity building for surveillance. In early 2017, GIPC Network participants and WHO identified priorities for the next 5 years at both the country and global (panel) level. Together with the recent WHO guidelines on core components of IPC programmes,<sup>8</sup> the new priorities will be a source of direction and focus for decision-makers and influencers at national and international health-care levels.

### Panel: Call for action

#### Priorities for IPC at country level

##### *Countries where IPC has just started*

- Decisive and visible political commitment, including IPC policy development and enforcement
- Availability of resources (both human and infrastructure)
- Establishment and execution of IPC programmes at the national and acute health facility levels to ensure advocacy, training and data for future improvement and sustainability
- Action to increase availability of in-country IPC knowledge and expertise

##### *Countries with advanced IPC programmes*

- Increased accountability with IPC as a quality indicator
- Development of advanced information technology tools to support IPC monitoring and implementation
- Translation of information through enhanced communications to sustain awareness and engagement
- Credible incentives considering the local context to increase compliance rates
- Enhanced education and training to embed IPC knowledge across all disciplines

#### Priorities for IPC at the global level

##### *Strengthen IPC in the health system perspective*

- Strengthen IPC visibility and advocacy: convince decision-makers and stakeholders
- Lead on IPC knowledge development: create standardised curricula templates that can be adapted locally ("adapt to adopt") and stimulate further research on priority areas
- Foster and promote IPC as a marker of quality: establish international IPC minimum standards
- Build active networks and stronger communications: ensure that patient safety and quality improvement leaders, as well as other health workers across all disciplines, are engaged to advocate for IPC

##### *Elevate the role of IPC specifically to better combat AMR*

- Strengthen the power to act: secure support for a "top-down" chief executive approach, empower IPC leads
- Improve evidence presentation to leaders: effectively outline available data and other information on the impact of IPC solutions on AMR
- Expand the narrative: help people visualise how IPC programmes can lead to AMR risk reduction

IPC=infection prevention and control. AMR=antimicrobial resistance.

Ebola virus disease and other outbreaks, as well as the seriousness of the seemingly inexorable march of AMR,<sup>9</sup> have been wake-up calls to political and public health leaders around the world. However, the relationship between these big picture global threats and the need to secure real and sustained IPC improvements in every country (panel) is not always fully appreciated. Inevitably, the pace at which change can be achieved in countries will vary for historical, logistical, and financial reasons. This should not detract from the realisation that political engagement, constant provision of the necessary resources for such a vital function, and the need for greater awareness and training, should be a priority everywhere.

At the global level (panel), there is a need for international organisations to recognise that global health security relies on effective IPC to control emerging health threats (including AMR) and that there is a need to intensify IPC support to countries and the international community. An early opportunity to convince global and national leaders of the value of IPC action is this year's World Antibiotic Awareness Week which emphasises IPC among its core messages. While efforts such as new drug development are certainly needed, IPC is a tried-and-true approach that is likely to be cost-effective and with the capacity to sustain or even potentiate successes gained through new drug development or improving antibiotic use.

A number of common challenges and barriers still exist to accomplish these priorities, such as competing political agendas, resource constraints, and multiple promotional health messages. Additionally, despite strong evidence for the effectiveness of IPC, further research is needed to identify and validate innovative technologies and equipment to support IPC, provide a stronger demonstration of the cost-effectiveness of IPC interventions, and identify feasible implementation approaches and local solutions for low-resource settings.

There are strong economic and ethical reasons to enhance IPC within the national and global health security agendas given both the burden and priorities outlined by the GIPC Network. Very recently, Tedros Adhanom Gehebreyesus, the new Director-General of WHO, has said, "Universal health coverage and health emergencies are cousins....Strong health systems are our best defense to prevent outbreaks

from becoming epidemics".<sup>10</sup> Efforts should capitalise upon evidence-based recommendations, proven and feasible implementation strategies, and awareness raised by AMR and epidemic-prone disease threats. The GIPC Network Call for Action promotes coordination, synergy, accountability, and communication as essential means to make this happen.

*\*Benedetta Allegranzi, Claire Kilpatrick, Julie Storr, Edward Kelley, Benjamin J Park, Liam Donaldson, on behalf of the Global Infection Prevention and Control Network†*  
World Health Organization, Infection Prevention and Control Global Unit, Department of Service Delivery and Safety, 1211 Geneva 27, Switzerland (BA, CK, JS, EK); Division of Healthcare Quality Promotion, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA, USA (BJP); and Department of Non-communicable Disease Epidemiology, London School of Hygiene & Tropical Medicine, London, UK (LD)  
allegranzi@who.int

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**†Global Infection Prevention and Control Network:** WHO secretariat: Nienke Bruinsma, Ana Paula Coutinho Rehse, Nino Dayanghirang, Sergey Eremin, Jonas Gonesth-Garcia, Rana Hajjeh, Carmem Pessoa Da Silva, Nikki Shindo, Valeska Stempliuk, Sara Tomczyk; American University of Beirut Medical Centre: Southa Kanj; Asia Pacific Society of Infection Control (APSIC): Moi Lin Ling; Association for Professionals in Infection Control and Epidemiology (APIC), USA: Katrina Crist; Baltic Antibiotic Resistance collaborative Network (BARN): Birgitta Lytsy; Centers for Disease Control and Prevention, USA: Neil Gupta; National IPC Programme, Ministry of Health, Chile: Mauro Orsini; European Committee on Infection Control (EUCIC) of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID): Nico T Mutters; European Network to Promote Infection Prevention for Patient Safety (EUNETIPS): Silvio Brusaferrò; Infection Control Africa Network (ICAN): Shaheen Mehtar; Institute of Epidemiology, Disease Control and Research (IEDCR), Bangladesh: M Mushtuq Husain; International Federation of Infection Control (IFIC): Terrie B Lee; Jhpiego-an affiliate of Johns Hopkins University, USA: Chandrakant Ruparelia; Ministry of Health, Kingdom of Saudi Arabia: Ahmed M Hakawi; National Centre for Infectious Diseases, Tan Tock Seng Hospital, Singapore: Marimuthu Kalisvar; North-Western State Medical University, Russian Federation: Batorybek Aslanov; OASIS Global, USA: Joseph Solomkin; Public Health Agency of Canada, Canada: Katherine Defalco; Society for Healthcare Epidemiology America (SHEA), USA: Nalini Singh; School of Nursing, University of São Paulo, Brazil: Maria Clara Padoveze; WHO Collaborating Centre for Infectious Disease Epidemiology and Control, China: Wing Hong Seto; WHO Collaborating Centre for IPC and AMR, Ministry of National Guard Health Affairs, Kingdom of Saudi Arabia: Hanan H Balkhy; WHO Collaborating Centre on Patient Safety, University Hospitals of Geneva, Switzerland: Didier Pittet; WHO Collaborating Centre for Reference and Research in AMR, Public Health England, UK: Nandini Shetty.

For more on **World Antibiotic Awareness Week** see <http://www.who.int/campaigns/world-antibiotic-awareness-week/en/>

- 1 WHO. Report on the burden of endemic health-care-associated infection worldwide. Geneva: World Health Organization, 2011. [http://www.who.int/infection-prevention/publications/burden\\_hcai/en/](http://www.who.int/infection-prevention/publications/burden_hcai/en/) (accessed Aug 2, 2017).
- 2 Allegranzi B, Bagheri Nejad S, Combescuré C, et al. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. *Lancet* 2011; **377**: 228–41.
- 3 Cassini A, Plachouras D, Eckmanns T, et al. Burden of six healthcare-associated infections on European population health: estimating incidence-based disability-adjusted life years through a population prevalence-based modelling study. *PLoS Med* 2016; **13**: e1002150.
- 4 Ling ML, Apisarnthanarak A, Madriaga G. Burden of healthcare-associated infections in southeast Asia: a Systematic literature review and meta-analysis. *Clin Infect Dis* 2015; **60**: 1690–99.
- 5 Storr J, Kilpatrick C, Allegranzi B, Syed S. Redefining infection prevention and control in the new era of quality universal health coverage. *J Res Nurs* 2016; **21**: 39–52.
- 6 WHO. Global action plan on antimicrobial resistance. Geneva: World Health Organization, 2015. <http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/> (accessed Aug 2, 2017).
- 7 Dar OA, Hasan R, Schlundt J, et al. Exploring the evidence base for national and regional policy interventions to combat resistance. *Lancet* 2016; **387**: 285–95.
- 8 WHO. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization, 2016. <http://apps.who.int/iris/bitstream/10665/251730/1/9789241549929-eng.pdf?ua=1> (accessed Aug 2, 2017).
- 9 The review on antimicrobial resistance (Chaired by O’Neill J). Infection control and surveillance: limiting the development and spread of drug resistance. 2016. [https://amr-review.org/sites/default/files/Health%20infrastructure%20and%20surveillance%20final%20version\\_LR\\_NO%20CROPS.pdf](https://amr-review.org/sites/default/files/Health%20infrastructure%20and%20surveillance%20final%20version_LR_NO%20CROPS.pdf) (accessed Sept 5, 2017).
- 10 Adhanom Gehebreyesus T. All roads lead to universal health coverage. *Lancet Glob Health* 2017; **5**: e839–40.