



衛生防護中心
Centre for Health Protection

Scientific Committee on Infection Control

**Recommendations on Hospital Infection Control System
in Hong Kong**

Purpose

Recommendations on Hospital Infection Control System were first issued in July 2005 by SCIC. This paper aims to review the current local situation and update recommendations as appropriate. Hospitals are advised to undertake action to regularly review and strengthen their existing infection control system, manpower and resources.

Rationale

2. It has been agreed that a good infection control infrastructure is critical to the success of implementing hospital infection control and prevention programmes, in public and private hospitals, to achieve protecting health of patients, healthcare workers and those in the health care environment. Effective infection control system reflects high quality health care, positive organizational culture and an enhanced patient safety climate.

3. Infection control (IC) personnel are constantly facing new challenges, but hospital resources are limited. Although public and private sectors differ in their priorities in resource allocation, there should be agreed minimum requirements for achieving adequate results in IC.



Recommendations

4. The recommendations of SCIC on infection control system in both public and private hospitals have taken into consideration local situation and international experience.

Section A: Recommendations on hospital infection control infrastructure

5. On Infection Control Resources

- (a) It is critically important that there are sufficient infection control nurses (ICNs) in all hospitals. A minimum ratio of one ICN to 250 hospital beds was recommended by SCIC in 2005, in line with WHO Guidelines¹. After a comprehensive review, SCIC recommends a ratio of one ICN to 150 hospital beds for acute hospital (i.e. with Accident & Emergency Department) and one ICN to 200 hospital beds for non-acute hospital. The scope of the hospital infection control program should be taken into consideration when staffing needs are to be determined.² Corresponding ICN manpower should be taken into account when new IC program is planned to introduce in the hospital.
- (b) The IC team must be multidisciplinary³, and include trained nurses, infectious diseases, microbiology, statisticians and information technology (IT) support.
- (c) A higher ICN ratio should be adopted if the hospital has a higher rate of invasive and specialized ambulatory practices, and high risk patients admitted in the hospital. The hospital should have an IC committee and the IC committee should review the needs of its specific environment to determine the appropriate ratio.
- (d) After approving on the staffing of IC personnel, the hospital management needs to provide adequate office space, as well as laboratory, statistical, secretarial, computer and reference literature support for proper functioning of the IC team.
- (e) It is important that the IC team have access to adequate continuing

education to update themselves on this rapidly expanding field. The hospitals should in particular consider assigning resources in training infection control doctors.

- (f) The hospitals should delineate the roles and responsibilities of their Infection Control Officer (ICO)/doctor and ICN which would be conducive to their respective hospital environment.

6. On Infection Control Policies

- (g) Every hospital IC committee should ensure there are established IC guidelines which are scientifically valid and yet relevant to the needs of the hospital leading to improvement in preventive measures and patient outcome. The guidelines should be related to the daily activities covered by the IC team and the majority of these guidelines should be related to prevention of healthcare associated infections (HAI, also referred to as “nosocomial infections”). These guidelines should be endorsed by the IC committee of the hospital / corporate level as appropriate. These guidelines should be updated on a regular basis to include new scientific findings and also taking into account local practicality and cost. The updated guidelines should be freely accessible in relevant clinical areas.
- (h) The compliance to these guidelines should be monitored with feedback from frontline staff members.
- (i) The implementation of policies that are formally endorsed is the responsibility of the IC team of the hospital.

7. On Capacity Building for infection control staff

- (j) All Infection Control Nurses (ICN) should be appropriately trained and have at least 2 years of clinical experience of in-patient care. Apart from providing orientation for all new joined ICN¹, they should also receive relevant post-graduation IC certificate / diploma courses organized by the tertiary institutions or professional bodies.
- (k) It is also critically important there are appropriately trained Infection Control Officers/doctors. In Hong Kong, it would be clinical microbiologists possessing the specialist qualification in the Clinical

Microbiology and Infection Fellowship with the Hong Kong College of Pathologists or clinical doctors with relevant healthcare epidemiology and infection control training and experience.

- (l) Continuous educational opportunities should be offered to all existing staff.

Section B: Recommendations on infection control essential activities

8. On Surveillance

- (m) There should be surveillance programmes on, e.g. nosocomial infections and device-related infections, to guide IC strategies. Surveillance should be able to provide information describing the status of infections associated with health care (that is, incidence and/or prevalence, type, aetiology and, ideally, data on severity and the attributable burden of disease); identification of the most relevant antimicrobial resistance (AMR) patterns, identification of high risk groups, procedures and exposures; early detection of clusters and outbreaks (i.e. early warning system); identification of multi-drug resistant organisms (MDROs), preparation of antibiograms and outcome monitoring of infection prevention and control interventions.
- (n) The definitions and methods of surveillance should be standardized.
- (o) Benchmarking with data from reputable programmes from other countries such as National Healthcare Safety Network (NHSN)⁴ of the USA is also recommended.
- (p) Surveillance data should be regularly analysed by the hospital IC team and any potential problems must be further investigated. IC deficiencies that are identified must be addressed and any improvements to be documented by the ongoing surveillance programme.
- (q) Surveillance data should be appropriately disseminated with feedback to the staff. The ultimate aim is the improvement of IC practices, e.g. surgical site infection (SSI) rate to specific surgeons. There should also be established mechanism to report these statistics to frontline workers, e.g. via intranet or newsletter. Liaison with leaders from specific services and wards, such as intensive care specialists and surgeons, is also needed.

- (r) All hospitals should establish surveillance on sharps injuries and mucosal exposure, staff sick leave, immunization status of healthcare workers.
- (s) There should be policy on mandatory reporting of surveillance findings to the IC committee in all hospitals. Ideally, hospital-based infection surveillance systems should be linked to public health infection surveillance systems, i.e. surveillance systems from Centre for Health Protection in Hong Kong.

9. On Audits and Compliance Checks

- (t) There should be regular audits on infection control practices, such as hand hygiene, contact precautions, evaluation of PPE donning/doffing, etc.

10. On Active Event Response to Infectious Disease Outbreaks

- (u) Hospitals should have the capabilities to identify occurrences of outbreaks through the review of microbiological and surveillance data. The feedback of information from the hospital staff can also assist in this process.
- (v) Outbreaks ought to be investigated in a timely manner by the hospital IC team and the necessary preventive measures must be put in place.
- (w) Once outbreak is identified, hospitals are required to report the outbreak to the Central Notification Office (CENO) of the Centre for Health Protection (CHP), and work closely with CHP on outbreak control.
- (x) The IC team should ensure the proper isolation of patients with infectious diseases in the hospital.
- (y) Proper isolation facilities should be available in the hospitals (e.g. isolation ward, isolation rooms with negative pressure etc.), and the facilities should be properly used and maintained. Besides, there should be suitable and adequate personal protective equipment available for staff in the hospitals.

11. Education and Training of Healthcare workers

- (z) The IC team must provide ongoing educational programmes for the hospital frontline staff. IC training should be provided in the beginning of work. Besides regular dissemination of updated guidelines, team members need team and task-oriented and problem-based training. Workshops, bedside teaching and simulation-based training are shown to be most effective.⁵
- (aa) Special educational programmes are also needed whenever new guidelines or policies are introduced.
- (bb) It would be advantageous to develop a network of frontline staff members who are knowledgeable on the IC guidelines of the hospital, to assist the IC team in implementation and monitoring of compliance. The introduction of the link-nurse system is highly recommended.
- (cc) All educational programmes should be evaluated periodically for effectiveness and the attendance recorded.

12. Involvement in Employee Health

- (dd) The IC team should be involved in the development of policies and programmes for the prevention of infections among healthcare workers.
- (ee) The implementation of an appropriate immunization programme, and the provision of staff counselling where needed should be ensured.

13. Involvement in Antimicrobial Stewardship Programme (ASP)

- (ff) There is ample evidence showing that antimicrobial-resistant infections lead to worse clinical outcomes, increased morbidity and mortality, and prolonged hospitalization. In view of its global trend, the Government of the Hong Kong SAR has also set up a High Level Steering Committee with advice from the Expert Committee to combat antimicrobial resistance (AMR) in 2016⁶. It is recommended that the IC team should be involved in ASP on a routine and long-term basis. The usage of antibiotic (especially the broad-spectrum or big gun antibiotics) in

hospitals should be monitored and the antibiograms should be prepared by hospitals annually.

14. Involvement in other related activities

(gg) The IC team should also participate in ensuring the proper use of disinfectants and sterilization in the hospital, proper disposal of hospital waste and quality assurance of environmental cleaning. Their expertise is also needed in the evaluation of new devices and equipments in the hospital.

15. Collaboration with the Centre for Health Protection (CHP)

(hh) The IC team should collaborate with CHP to work in areas such as surveillance, infection control measures, outbreak management, monitoring of antibiotic usage in hospitals, sharing of antibiograms, promoting hand hygiene, preventing emergence of MDROs and so forth from time to time to protect health of patients and staff in the health care environment.

December 2019

The copyright of this paper belongs to the Centre for Health Protection, Department of Health, Hong Kong Special Administrative Region. Contents of the paper may be freely quoted for educational, training and non-commercial uses provided that acknowledgement be made to the Centre for Health Protection, Department of Health, Hong Kong Special Administrative Region. No part of this paper may be used, modified or reproduced for purposes other than those stated above without prior permission obtained from the Centre.

Reference

1. 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://www.who.int/gpsc/ipc-components-guidelines/en/>. Accessed 31 July 2018.
2. O'Boyle C, Jackson M, Henly SJ. Staffing requirements for infection control programs in US health care facilities: Delphi project. *Am J Infect Control* 2002; 30(6):321-333.
3. Rodriguez-Baño J, Del Toro MD, López-Méndez J, et al. Minimum requirements in infection control. *Clin Microbiol Infect* 2015;21:1072-1076.
4. About National Healthcare Safety Network (NHSN) website. <https://www.cdc.gov/nhsn/index.html>. Accessed 31 July 2018.
5. Zingg W, Holmes A, Dettenkofer M, et al. Hospital Organisation, management, and structure for prevention of health-care-associated infection: a systematic review and expert consensus. *Lancet Infect Dis* 2015;15(2):212-224.
6. Hong Kong Strategy and Action Plan on Antimicrobial Resistance 2017-2022. The Government of the Hong Kong Special Administrative Region, China; 2017. https://www.chp.gov.hk/files/pdf/amr_action_plan_eng.pdf. Accessed 31 July 2018.