

**For information
on 28 October 2013**

Legislative Council Panel on Health Services

**Prevention and Control of
Multidrug Resistant Organisms**

PURPOSE

This paper sets out the Administration's efforts in the prevention and control of the transmission of Multidrug Resistant Organisms (MDRO), notably the Vancomycin Resistant Enterococcus (VRE) bacteria.

NATURE OF MDRO

2. MDROs refer to bacteria that have become resistant to or untreatable by some classes of antibiotics. Alternative antibiotics may be available for treatment, but may be less effective or cause more side effects.

3. MDROs can be transmitted from person to person by contact with contaminated hands; or after contact with contaminated environmental surfaces and patient equipment. MDROs may colonise the human body for weeks or months without causing disease or infections. However, they are more likely to cause infections in vulnerable patients, especially those with weakened immune systems, those subject to prolonged hospital stay or those undergoing treatment with multiple antibiotics. Depending on the type of MDRO, they may cause a wide range of infections such as pneumonia, urinary tract infection, wound infection and bacteremia.

4. In healthcare settings, the transmissibility of MDRO depends on the prevalence of antimicrobial use, proportion of colonised patients, availability of susceptible patients and adherence to infection control measures. It is especially important to prevent and control the transmission of MDROs in these settings, so to minimise the development of antimicrobial resistance and to avoid infections among vulnerable patients. Good practices adopted in community-based settings will also contribute significantly to disease prevention.

5. VRE is a type of MDRO, with the enterococcus having developed resistance to vancomycin and usually also to other antimicrobials. In recent years, the majority of VRE cases in Hong Kong were elderly patients and were found through screening during contact tracing, which indicates colonisation is more common than infection. There have been concerns over the number of new VRE cases detected at public hospitals, especially Queen Elizabeth Hospital (QEH), in recent months.

ONGOING PREVENTION AND CONTROL MEASURES

6. The Centre for Health Protection (CHP) of the Department of Health is committed to developing best practices in infection control at healthcare and community settings. It supports epidemiological investigation of MDRO clusters and works with stakeholders in hospitals in the public and private sectors as well as the community to implement multifaceted MDRO control strategies and programmes.

Scientific Committee

7. The Scientific Committee on Infection Control (SCIC) has been set up under CHP to advise on the scientific basis of infection control practices and develops strategies to prevent and control MDROs. The Administration is also advised by a working group under the SCIC named the Health Protection Programme on Antimicrobial Resistance to adopt multi-pronged strategies on the prevention and control of antimicrobial resistant organisms relevant to local settings.

8. SCIC has been discussing the issue of VRE on an annual basis since 2011. As Hong Kong is not endemic for VRE, SCIC recommends that the “find and confine” strategy should be continued. Noting that there have been isolated pockets of colonisation in affected hospitals, key strategies to control VRE in hospitals include prompt recognition of cases, as well as instituting intensive and targeted infection control measures to prevent transmission. The goal is to terminate the ongoing VRE transmission in public hospitals and to prevent spillage into other healthcare institutions and the community.

Laboratory surveillance and case reporting

9. CHP has been keeping track of various drug-resistant organisms of public health significance through liaison with public and private hospital laboratories on testing of referred bacterial isolates. It provides diagnostic

laboratory services and receives referred isolates for confirmation and characterisation testing.

Rational use of antibiotics

10. CHP has been promoting awareness of antibiotic resistance and the proper use of antibiotics. In public hospitals, antibiotic stewardship programmes have been implemented in public hospitals since 2005 to promote appropriate use of antibiotics in hospitals. CHP has also developed the “Inter-hospital Multidisciplinary Programme on Antimicrobial Chemotherapy” guidelines in association with the Hospital Authority (HA), two local universities and the Hong Kong Medical Association, with the latest version updated in 2012 and made available to doctors and pharmacists. Large-scale promotional campaigns have been organised on the subject every November since 2011.

Infection prevention and control

11. Multifaceted control strategies and programmes are being implemented in hospitals in the public and private sectors, as well as residential care homes for the elderly (RCHEs).

12. At the corporate level of HA, a Task Force on Infection Control has been established under the Central Committee on Infectious Diseases and Emergency Response to oversee infection control policy of cluster hospitals. The Task Force is chaired by HA’s Chief Infection Control Officer. The Central Committee has also set up a work group on Antibiotic Stewardship Programme, consisting of a clinical microbiologist, infectious disease physicians and pharmacists of clusters to oversee strategies to promote rational use of antibiotics in HA. Each public hospital has its own infection control team, usually consisting of a doctor and team of nurses, which is responsible for surveillance and implementation of infection control and training programs. CHP has been working with HA hospitals on hospital outbreak control, guidelines formulation and training.

13. As regards private hospitals, each hospital has an infection control team to oversee policy and implementation of infection control programs. CHP has set up a regular communication platform known as the Working Group of Collaboration between CHP and Private Hospitals on Safe Use of Antibiotics and Infection Control. A guidance note on prevention and control of VRE in hospital setting has been issued.

14. RCHEs are required to designate infection control officers for licensure purposes, for which CHP provides training on annual basis. The Social Welfare Department and DH conduct annual checking on infection control matters. In addition, for certain homes with needs, additional trainings are reinforced on promoting hand hygiene and proper infection control practices. CHP regularly updates and promulgates its guidelines on infection control in RCHEs.

15. In the past few years, training in form of workshops and forums for healthcare workers from public and private healthcare sectors and staff of RCHEs has included focus on infection control related to MDROs and VRE. Training materials are also available at a designated training portal on internet for reference.

Public awareness

16. CHP organises mass media campaigns and media briefings from time to time to promote hand hygiene and awareness of antibiotic resistance. It has also organised promotional activities on the annual Hand Hygiene Awareness Day on 5 May and has engaged doctors, public hospitals and clinics, private hospitals and long term care facilities.

RECENT DEVELOPMENTS

17. In recent months, there has been an increase of VRE cases identified, particularly in QEH¹. In response, CHP and HA have undertaken a range of measures in public hospitals, private hospitals and RCHEs.

Public hospitals

18. In view of the relatively large number of VRE cases identified in QEH, HA launched a pan-screening programme on 30 September 2013 by collecting and testing patient specimens with rectal swab for all inpatients. The screening programme aimed at –

- (a) giving a snapshot to determine the baseline VRE prevalence among inpatients in QEH;

¹ From 1 January to 30 September 2013, there were 1,386 new VRE cases identified either from clinical specimens or surveillance cultures in HA hospitals, including 394 cases in QEH.

- (b) identifying the potential occult VRE carriers;
- (c) implementing early patient segregation and containment measures to prevent further spread; and
- (d) directing future VRE control strategy with full understanding of the local epidemiology.

19. As at 21 October 2013, 3,400 specimens have been collected with 77 confirmed positive and 3,033 reported negative. The gastrointestinal colonisation (carrier) rate is estimated to be about 2.48%. The overall screening results will be evaluated upon the completion of the programme, while the daily results together with the service impact likely incurred are being closely monitored. According to the data available as at 21 October 2013, most of the VRE carriers were clustered in a few wards and were patients with prolonged hospital stay receiving multiple antibiotics. There have not been any symptoms or signs related to VRE carriage which poses difficulty to their identification and isolation.

20. Meanwhile, to minimise disruption of possible prolonged stay of patients to clinical and emergency services, QEH has taken preparatory measures including rescheduling of around 300 to 600 elective investigations and operations.

21. Along with the pan-screening programme, HA has also stepped up various measures against VRE in public hospitals –

- (a) **Hand Hygiene** – Good hand hygiene is an effective means to prevent the transmission of VRE. HA has increased the frequency of staff hand hygiene compliance monitoring, and also fervently promoted personal hygiene for patients, particularly observing hand hygiene before meal, medication and after toileting.
- (b) **Environmental Hygiene** – In addition to the basic level of environmental cleansing, HA has also enhanced the standard of environmental hygiene applied to clinical areas found with MDRO. HA will undertake environmental samplings of high touch animate surfaces as appropriate to track the infection sources from the environment and identify the critical control points for further improvement actions.
- (c) **Electronic Tagging of Patients identified with VRE** – To mitigate

the risk of transmission, HA will tag patients identified with VRE electronically onto the Clinical Management System to alert other healthcare workers so that precautions can be made earlier.

- (d) **Communication** – HA has prepared a designated VRE web page for the timely dissemination of information, including the VRE statistics and the updated communication kit for staff's reference. Moreover, HA uses posters and staff forums to promulgate good practice related to hand hygiene and environmental hygiene.

Private hospitals

22. CHP has lined up an ad-hoc meeting on VRE in October 2013 to brief private hospitals on current situation and to suggest algorithm to detect VRE carriers early for timely implementation of infection control measures.

RCHEs and other community stakeholders

23. RCHEs have intensified the case management approach to reduce risk of transmission of VRE and other MDROs in RCHEs. CHP has been working closely with HA to increase the infection control capacity of RCHEs to receive VRE carriers. HA has also been communicating with CHP regularly on the discharge status of VRE carriers to RCHEs to monitor the situation and provide the necessary assistance to RCHEs as appropriate.

24. CHP rolled out a territory-wide hand hygiene campaign for RCHE staff. It also arranged a special lecture by Prof KY Yuen, Chair Professor of Department of Microbiology of the University of Hong Kong, in September 2013 targeting RCHE staff, which was also widely covered by the media.

WAY FORWARD

25. The Government will continue to maintain vigilance and accord priority to controlling the transmission of VRE and other MDROs in the hospital and community settings. This will be included as a major theme in CHP's training to various agencies. We will also step up publicity to enlist support from stakeholders in exercising rational use of antibiotics, attention to hand hygiene and other infection control measures.

ADVICE SOUGHT

26. Members are invited to note the contents of this paper.

**Food and Health Bureau
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