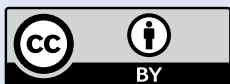


From guidelines to ground reality: Challenges faced by an infection control nurse for control of MDR infection in Nepal.

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INTRODUCTION

Multidrug resistant organisms are defined as the organisms, predominantly bacteria that are resistant to one or more classes of antimicrobial agents.¹ Health care associated infections are the infections associated with the device used in medical procedures such as catheter, ventilator, and central line. Healthcare-associated infections (HAIs) are a leading cause of morbidity and mortality worldwide. Over the last decade, multidrug-resistant Gram-negative bacteria (MDR-GNB), including MDR-Pseudomonas aeruginosa, MDR-Acinetobacter baumannii and Enterobacteriaceae producing extended-spectrum β -lactamases (ESBL) and carbapenemases, have been implicated in severe HAIs and their occurrence has increased steadily.¹ According to WHO's global report on infection prevention and control, effective implementation of IPC programs is key to prevent and control the risk of HAI and AMR in health care.²

Infection prevention and control (IPC) programs tends to improve patient quality care and also to protect staffs against occupational exposure. The Ministry of Health and Population (MoHP) has endorsed a new guideline on IPC 2079, which has been prepared by Nursing Social Security Division (NSSD), Department of Health Services (DoHS) as per the mandate of Public Health Service Act clause 64.

CURRENT STATUS

The infection prevention and control (IPC) program is a key intervention for containing AMR. Functional IPC programs reduce the rates of healthcare-associated infections and volume of antimicrobial consumption (AMC) and are vital in preventing AMR. Though hospital infection control is included in the Minimum Service Standards (MSS) for hospitals, not all hospitals have functional programs. Only a few hospitals have developed their own IPC policy and have formed infection control committees.³

In order to produce qualified Infection Prevention and Control Nurse (ICN), several training programs were held both from national level and private sectors. Formal certification programs are launched by NSSD and Infection Control Society of Nepal (ICSON), in coordination with WHO and several hospitals. Furthermore, IPC workshops and training programs are held regularly on different occasions too.

In hospitals, IPC nurses focus on hand hygiene compliance, HAI surveillance, isolation of transmissible infections, and training healthcare workers on IPC. Surveillance reports reflect the actual HAI scenario, highlighting the need for IPC programs. Ongoing monitoring helps identify AMR prevalence and implement containment measures.

CHALLENGES FACED

Infection control in health care center is a huge responsibility and the personnel involved have to juggle with multiple responsibilities as they have to deal with new regulations and ongoing challenges of new organisms, international revised guidelines, new emerging diseases and should consider the internal resources available to face the emerging challenges.⁶ Some of the challenges with the recommended guidelines and the ways to be addressed in near future are mentioned in Table 1.

Table 1. Common challenges faced, recommendations, ground reality and way forward

S.N.	Challenges	Guideline Recommendation	Reality	Way Forward
1.	Administrative support for MDRO surveillance. ⁴	a. Report MDROs incidence rate to administrative personnel bimonthly and as per need basis. ⁵	45% of ICN time is spent on error-prone manual surveillance, hampering IPC process improvements and effectiveness due to inadequate digital reporting systems. ⁷	Development of the software for data processing.
		b. Implement contact precautions for all patients known to be colonized /infected with target MDROs. ⁵	Lack of isolation beds in general wards forces XDR and MDR organisms isolated patients with comorbidities to visit multiple wards and hospital, spreading MDR organisms in wards.	Every hospital needs a separate isolation ward with logistical support and cost analyses.
2.	Adherence to hand hygiene with other control measures. ⁴	Provide education and training on risks and prevention of MDRO transmission during orientation and periodic updates for health care provider. ⁵	Inadequate class regarding IPC measures and its importance to different health care worker.	Mandatory orientation for all staff, with curriculum integration where feasible.
3.	Judicious use of antimicrobial agents.	Review local antibiograms and formulary antimicrobials bi-monthly to promote appropriate use. ⁵	Unavailability of Antimicrobial stewardship (AMS) and antibiogram in major tertiary level hospital.	Development and implementation of AMS on hospital level.
4.	Limited reporting of HAI. ⁷	Report MDROs incidence rate bimonthly and as per need basis. ⁵	Limited trained personnel, guidance, and appropriate surveillance criteria in developing countries restrict surveillance to select units and patient categories, yielding data that fails to reflect reality. ⁷	Development of HAI surveillance tool for low economic and developing countries.
5.	Limited time to accomplish multiple goals. ⁶	IPC must collaborate across departments like pharmacy and laboratory at various points of care. ⁵	ICN spends most time on manual surveillance, with minimal focus on patient safety programs like improving hand hygiene and reducing MDRO transmission. ⁶	Digitalize surveillance system, so less time is consumed.
6.	Employment of health program. ⁵	a. Pre-enrollment HIV, HBV, and other necessary tests. b. Provide occupational safety, vaccinations, and risk monitoring. c. Monitor exposures and analyze risks. ⁵	No provision of annual influenza vaccine.	Provision of occupational safety program like vaccination, post-exposure prophylaxis (PEP).

OTHERS CHALLENGES

A common reason for environmental contamination with MDROs is the lack of adherence to cleaning procedures. IPC often has additional responsibilities but lacks the authority to suggest better systems due to tight budgets, leading to compromised infection control. Staffing shortages and high turnover further hinder IPC efforts, highlighting the need for trained personnel in ICUs. There should be one IP trained office assistant for five bedded ICU bed accountable for monitoring microbial bio-burden and reporting⁸. Additionally, limited resources and inadequate cleaning of medical devices between patients contribute to the rise of HAIs and MDR transmissions.

CONCLUSION

IPC team is persistently focused on keeping infection at bay, however the challenge of infection transmission is ongoing. All the health care facilities need to formulate and implement a set of standard infection control procedures and also need to monitor its implementation.

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