Medical Safety & Global Health
ISSN: 2574-0407

Punjwani et al., Med Safe Glo Heal 2016, 5:1
DOI: 10.4172/2574-0407.1000125

Commentary Article Open Access

Practices and Policies of Infection Control and Prevention, Pakistan - A Review for Patient Safety

Punjwani R[1*], Khatoon A[2], Fatima DS[3] and Ahmed A[3]

[1]*Manager Nursing Education, Indus Children Cancer Hospital, ST-1/C, Block-10, Ayesha Manzil, Federal B Area, Karachi, Pakistan*

[2]*Infection Control, Indus Children Cancer Hospital, ST-1/C, Block-10, Ayesha Manzil, Federal B Area, Karachi, Pakistan*

[3]*The Indus Hospital, Korangi Crossing, Karachi, Pakistan*

[*]**Corresponding author:** Punjwani R, Manager Nursing Education, Indus Children Cancer Hospital, ST-1/C, Block-10, Ayesha Manzil, Federal B Area, Karachi, Pakistan, Tel: +92 0345249905; E-mail: Rehana_punjwani@yahoo.com

Received date: Dec 30, 2015; **Accepted date:** Dec 31, 2015; **Published date:** Jan 27, 2016

Keywords: Infection control and prevention; Hospital acquired infections

Introduction

Infection control and prevention measures are essential components of quality healthcare and patient safety in health facilities. Healthcare associated infections affect people worldwide and are a global issue for patient safety [1].

Mortality and morbidity associated to health care related infection are very high. It is thought to occur in 10% of patients in the western countries and 25% of patients in resource limited countries due to unsafe infection control practices [2].

The worldwide strategy to deal with hospital acquired infections is to have infection control policies and infection control measures. In the West, knowledge and application of infection control has caused a shift in healthcare practices. It has improved public health, caused a positive impact on hospital stays, hospital waiting lists, and even hospital budgets [3].

The WHO has made infection control a top priority in developing countries and published practical guidelines for infection control in healthcare facilities [1,4].

Amongst other socio-economic factors, patients in low middle income countries are at a higher risk for hospital acquired infections because of lack of resources such as infection control measures, overcrowding, and lack of trained personnel in hospital [5].

Pakistan is the 7th most populous country with an estimated population of 199 million and an annual population growth rate of 1.46% [6]. It is a low- to middle-income county, ranking 146 out of 167 countries in UN's Human Development Index. It is a high burden country for both communicable and non-communicable diseases [7]. Health care systems here are a mix of public, private and charitable organizations [2]. Given the shortage of supplies such as beds, finances and doctors, it cannot afford to waste its already limited resources on hospital acquired infections [8].

Hospital acquired infections in low and middle income countries are significantly higher than those in developed countries. In Pakistan, the incidence of HAI may even be higher due to reasons such as underreporting [9]. One of the reasons of underreported cases of HAI is lack of presence of surveillance and expertise. Developing countries including Pakistan have no surveillance systems to monitor routine HAI [10].

This paper will review the differences between the suggested standard practices that should be followed in healthcare setups and what is currently being practiced in Pakistan. The focus will be on practices of hand hygiene, waste disposal, and sterilization of equipment, protection of healthcare workers and overuse of antibiotics. While there is a lack of infection control as a priority in the government and educational sector, notable work in this field, is being done which will also be reviewed.

Infection control in Pakistan: overview

Given the high rates of HAI, Pakistan's first national infection guidelines were established in 2006, with the help of the National Aids Control Program, Ministry Of health, Pakistan. These guidelines were the first formal effort to control facility based transmission of infections by training healthcare professionals. These guidelines were divided into standard precautions and additional (transmission based) precautions. Standard precautions should to be practiced for all patients regardless of disease, diagnosis or infection status. For example, hand washing, use of personal protective equipment including, gloves, gown, and masks etc. Additional precautions are for transmission based diseases and for those contact precautions should be taken, such as, keeping those with highly infectious diseases in single isolated rooms [11].

The main problem, here, is with implementation of these National guidelines, which themselves need further defining [12]. Most health care setups do not have any institutional policies or SOPs to follow the national guidelines on hospital infection control and prevention [13].

In Pakistan, it was seen that the most basic inexpensive standard precaution- hand hygiene, is not being practiced, as observed in a government hospital. And although, this was a single institution observation, most other government institutions are likely to show a similar attitude [2].

One tertiary Public sector study showed that basic hand washing facilities are still not available at 25% of public sector hospitals of Pakistan [8]. The cost of installing sinks, soap dispensers, and providing towels is not a priority for the decision making authorities, given that only 1-2% of GDP is spent on health budgets. Areas that have limited water supply also have a shortage of sinks [14]. Even when hand washing facilities are available, the compliance rate is very low. Self-assessment of trainee physicians at a tertiary hospital revealed that only 17% were aware of the WHO recommendations for hand hygiene [15].

According to standard guidelines, hospital waste should be discarded properly and infectious waste be kept separate from non-clinical waste by a designating a space for collection of such waste. In Pakistan, it was noticed that this task is left to the cleaners alone, who have little knowledge about it. Many hospitals do not dispose sharps off properly, either [12]. Upon observation, only two of eight teaching hospitals were seen to be segregating sharps, chemical waste and other infectious waste material. Government policy dictates that there should be a waste management team and the hospital should be responsible for the proper disposal of waste. Only two hospitals, out of these eight, were seen to have proper waste management teams and guidelines for waste management [16].

Out of 44 clinical laboratories in Pakistan, 26 were observed to be dumping their reused syringes in municipal general collection waste, whereas, these should be dumped in healthcare waste, disposed of by burial in landfill or burned in an incinerator. This negligence has played a huge role in the spread of hepatitis B, Hepatitis C and other diseases and infections in the society [17].

The supply of sterile surgical instruments has also been seen to be neglected. Unclean equipment cannot be sterilized or disinfected, and increases the risk of surgical site infections. Items such as endoscopes and ultrasonic transducers should first of all be properly cleaned manually and then sterilized and reprocessed according to the manufacturer's instructions. They should then be kept in a clean dry environment. In Pakistan, there is no training institute for people working in this specialty. The tertiary hospitals in northern Pakistan were observed to not be monitoring autoclaves properly. There was also no proper disinfection of routinely used instruments such as endoscopes [12]. Injection equipment's are commonly reused with sterilization [17].

Surgical site infections are a major cause of hospital acquired infections and lead to patient mortality and morbidity. It adds to the unnecessary cost of hospital stay [9]. In the general surgery ward of a tertiary hospital in Karachi it was seen that 7.3 % of patients developed surgical site infections. Incidence in a clean environment only gave rise to 1.5% of infections, while those associated with dirty procedures gave rise to 21.5 % of infections [10].

Another important aspect of infection control is to protect the hospital staff. It is possible for healthcare workers, in direct contact with patients, to acquire infections as an occupational hazard. These infections can be transmitted to patients and other employees. Therefore it's a standard practice to screen healthcare workers and provide them with vaccinations. A study conducted at a medical college in Lahore, concluded that 47.7 % of the healthcare workers were not even vaccinated against Hepatitis B which can be transmitted on contact with bodily fluids [18].

According to a survey of a Government hospital, it was observed that 85% of the health care workers sustained a needle stick injury, and there was no institutional policy for handling such a situation [2]. In another study conducted in a private tertiary care hospital, 1382 needle stick injuries were reported, over a period of six years, with the highest rate being during blood collection [19]. This shows that the situation is private sector isn't so different either.

The uncontrolled sale and use of antibiotics has given rise to major drug resistance to hospital acquired infections leading to high mortality, and increased length of stay in hospitals [20]. There are no guidelines for dealing with infections by multi resistant organisms. Ideally, the use of antibiotic must be justifiable and appropriate tests must be done to confirm that the treatment is appropriate. Pakistan lists as one of top countries that utilize some of the costliest antibiotics in large quantity resulting in increased bacterial resistance, mostly due to their overuse [21].

The biggest challenge for healthcare industry is resistance to anti-tuberculosis drugs. Frequency of extensively drug-resistant tuberculosis in Pakistan increased from 1.5% in 2006 to 4.5% in 2009 [22]. Antimicrobial resistance has resulted in increased morbidity, mortality, and health-care cost [23]. Although Tuberculosis control is the responsibility of government sector, most patients pay this cost out of their own pocket to the private sector causing burden to the society [24].

Conclusion

It is clear that infection prevention and control in hospitals ensures the safety of patients and healthcare workers while simultaneously decreasing the risk of spreading infection among the community. It is a stand-alone chapter in hospital certification and accreditation, however, in Pakistan; the realization of both its short term and long term benefits is not yet recognized.

Pakistan needs to have a fully equipped communicable diseases center and a well-equipped laboratory for special pathogens, surveillance of infections, outbreaks and bacterial resistance [25].

As yet, there is no institute in Pakistan which has started any diploma or certificate courses in infection control. Even during nursing training, or MBBS degree, there is very limited, if any coverage on infection control. As per authors knowledge no course has been offered yet by Pakistan Nursing Council, a licensure body for nursing. Pakistan nursing council has yet to start such teaching for nurses.

Infection control requires multidisciplinary efforts, and experts from their respective field like physicians and nurses. A public-private partnership can be developed to enhance capacity in this aspect so that a productive outcome is achieved. Similarly, various societies and associations can get involved to create awareness in this regard.

There are societies such as the Medical and Microbiologist Infectious diseases society Pakistan (MMIDSP), headed by doctors and microbiologists and, the "Infection Prevention Nurses Association" (IPNA), comprising of nurses; who are working alongside each other towards improving the status of current infection control by bringing in innovative cost effective approaches to facilitate practices in limited recourse settings, such as publishing newsletters, visiting local hospitals and providing free consultancy. IPNA has also developed a one year nursing diploma in hospital infection control and prevention. It is making an effort to get it registered from Pakistan Nursing Council. Furthermore CSSD (central sterile supply department) which is registered from the government medical faculty board has trained personal in this field.

A few NGO have also worked on training health care workers, developing baseline standards and performing audits.

Conclusively, while marked progress has been made in knowledge and practices due to the continuous efforts of individual societies and NGO, now major effort needs to be implemented at government level to bring about a change at larger scale. Ministry of health in each province needs to show determined interest to incorporate infection control policies into existing health structures. Comprehensive educational modules on the subject need to be included in health care

workers studies, preferably from the primary level. It should also be included as a subject in medical and nursing curriculums. The hospital based policies need to be developed so as to ensure continuous monitoring, audits and surveillance for the progress and outcome of implemented policies.

References

1. Pittet D, Allegranzi B, Storr J (2008) Infection control as a major World Health Organization priority for developing countries. J of Hospital Infection 68: 285-292.
2. Baqi S, Damani NN, Shah SA, Khanani R (2009) Infection control at a government hospital in Pakistan. Int J Infect Control 5: 1-7.
3. Raza MW, Gould FK, Kazi BM (2001) Infection control policies and practice in Pakistan. J Pak Med Assoc 51: 292-295.
4. Practical guidelines infection control.
5. Nejad SB, Allegranzi B, Syed SB, Ellis B, Pittet D (2011) Health-care-associated infection in Africa: a systematic review. Bulletin of the World Health Organization 89: 757-765.
6. Agency CI (2015) The World Fact book.
7. WHO. Pakistan-Country Cooperation Strategy at a glance.
8. Rao MH, Arain GM, Khan MI (2012) Assessment of Knowledge, Attitude and Practices Pattern of Hand Washing in Some Major Public Sector Hospitals of Pakistan (A Multi-Center Study). Pakistan J of Medical Research 51: 76.
9. Damani N (2007) Simple measures save lives: an approach to infection control in countries with limited resources. The J of hospital infection 65: 151-154.
10. Bibi S, Channa A, Siddiqui TR, Ahmed W (2011) Frequency and risk factors of surgical site infections in general surgery ward of a tertiary care hospital of Karachi, Pakistan. Int J Infect Control 7: 1-5.
11. Pakistan National Infection Control Guidelines.
12. Ikram A, Shah SIH, Naseem S (2010) Status of hospital infection control measures at seven major tertiary care hospitals of northern Punjab. J Coll Physicians Surg Pak 20: 266-270.
13. Memon BA (2006) Nosocomial infections in public sector hospitals: urgent need for structured and coherent approach to the problem.
14. Chotani RA, Shaukat A (2002) Practicing prevention hand washing. J Pak Med Assoc 52: 368-374.
15. Anwar MA, Rabbi S, Masroor M, Majeed F, Andrades M, et al. (2009) Self-reported practices of hand hygiene among the trainees of a teaching hospital in a resource limited country. Self.
16. Rasheed S, Iqbal S, Baig LA, Mufti K (2005) Hospital waste management in the teaching hospitals of Karachi. J Pak Med Assoc. May 55: 192-195.
17. Abdul Mujeeb S, Adil MM, Altaf A, Hutin Y, Luby S (2003) Recycling of injection equipment in Pakistan. Infection control and hospital epidemiology 24: 145-146.
18. Nasir K, Khan KA, Kadri WM (2000) Hepatitis B vaccination among health care workers and students of a medical college. J Pak Med Assoc 50: 239-243.
19. Zafar A, Habib F, Hadwani R (2009) Impact of infection control activities on the rate of needle stick injuries at a tertiary care hospital of Pakistan over a period of six years: an observational study. BMC infectious diseases 9: 78.
20. Siddiqui S, Hussein K, Manasia R (2007) Impact of antibiotic restriction on broad spectrum antibiotic usage in the ICU of a developing country. J Pak Med Assoc 57: 484-487.
21. Zaidi S, Nishtar NA (2012) Rational prescription & use: a snapshot of the evidence from Pakistan and emerging concerns. Therapy 19: 20.
22. Hasan R, Jabeen K, Ali A (2010) Extensively drug-resistant tuberculosis, Pakistan. Emerg Infect Dis 16: 1473-1475.
23. Cohen ML (1992) Epidemiology of drug resistance: implications for a post-antimicrobial era. Science 257: 1050-1055.
24. Hussain A, Mirza Z, Qureshi FA, Hafeez A (2005) Adherence of private practitioners with the National Tuberculosis Treatment Guidelines in Pakistan: a survey report. J Pak Med Assoc 55: 17-19.
25. Alp E, Damani N (2015) Healthcare-associated infections in Intensive Care Units: epidemiology and infection control in low-to-middle income countries. J of infection in developing countries 9: 1040-1045.