Infection Control Overseas

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SUMMARY

A Medline search for Infection Control articles published in referred journals between 1991 and 1995, revealed almost 1200 publications, 173 of them were reviews and of 118 selected, 77 (66%) originated from the United States of America. Analysis of the topics addressed confirmed the wide variety of issues that Infection Control covers.

Infection Control is well developed in the United States of America and United Kingdom. Publications on Infection Control in Europe, South America and North African Countries suggest that activity is patchy and based on the American model, except for countries in Scandinavia where World Health Organisation sponsored computer surveillance systems have been widely used.

Infection Control in Asian countries follows the United Kingdom model in Hong Kong and Malaysia. In China, nosocomial infections are reported to be less than 10% but nosocomial bacteraemia is unknown as blood cultures are rarely performed.

A world tour of selected countries will review their infection control strategies, including how they have developed and are applied in the countries selected for review.

INTRODUCTION

Infection Control in Australia has had increasing publicity over recent years, with the published nosocomial outbreaks of Human Immunodeficiency virus[1] and Hepatitis C virus,[2] and the estimates of hospital-acquired infection reported in the South Australian incident study.

It is useful to review the published literature on a topic. This enables the development of better understanding of the speciality and how it has progressed over time.

It is also important to compare and contrast published problems, the methods of dealing with them and their effectiveness. The literature can provide warnings of problem areas in other countries and enables the orderly development of appropriate preventative strategies here to deal with these problems when they inevitably arrive.

METHOD

A Medline search of the Infection Control literature published in referred journals between November 1991 and November 1995 revealed 1168 citations. One thousand and eighty one of these were related to human nosocomial infections and there were 173 review articles. Only 118 of these reviews were available for the analysis which follows.

RESULTS

Table 1 summarises the topics which these 118 papers covered. One quarter were related to control of the spread of microorganisms including methicillin-resistant *Staphylococcus aureus*, extended spectrum beta lactamase producing Gram negative bacilli, vancomycin-resistant enterococci; multiresistant tuberculosis, and other multiresistant bacteria. All of these problem organisms currently exist in Australia with variable degrees of recognition and control.[3, 4, 5]

The other topics reviewed reflect issues which are of concern in Australia and have been addressed recently in the National Health and Medical Research Council Infection Control Guidelines.[6]

Table 2 lists the countries to which these papers refer. The majority (92%) originated from North America and the United Kingdom. Only 6% originated from 'so called' third world countries. In two papers, their country of origin was not able to be determined.

TABLE 1
TOPICS COVERED BY PAPERS REVIEWED

Topics	Number of Papers (% total)	
Microorganism control	28	(24)
Therapeutic issues	19	(16)
Specialities (non-dental)	17	(14)
Dental issues	15	(13)
Procedures	12	(10)
Surveillance	6	(5)
Employee health	6	(5)
Equipment control	5	(4)
Statistics	5	(4)
Country overviews	5	(4)
Total	<u>118</u>	(100%)

TABLE 2
COUNTRIES COVERED BY REVIEWED PAPERS

Country	Number (% total)	
United States of America	77	(65)
United Kingdom	14	(12)
Canada	4	(3)
Europe	8	(7)
Asia	5	(4)
Scandinavia	4	(3)
North Africa	3	(2)
Not determined	2	(1)
Total	<u>118</u>	(100%)

DISCUSSION

Infection Control in Public Hospitals in the United States has been summarised by Wurtz.[7]

The identified problems included poorly targeted surveillance, inadequate isolation facilities for patients, the needs of special units and emergency rooms, non-English speaking employees, the non-standardisation of information systems and the increasing recognition and role of public scrutiny of hospitals' performance.

The status of hospital infection control in the United Kingdom is reviewed in the Public Health Laboratory Service (PHLS) document 1995.[8] These guidelines[8] clearly set out the staffing requirements for Infection Control, the purpose and function of the Infection Control team and their responsibility to the chief executive, their role in communicable disease control and thus their community as well as their hospital-based responsibilities. The need for targeted audits and outcome measures along with the development of appropriate information technology and a national database are highlighted, as is the accreditation of laboratories but not the hospitals that they service.

Control of multiresistant bacteria forms an important part of infection control in the United Kingdom, as does staff immunisation against Hepatitis B and the role of chemical disinfectants, the use of gloves and disposable equipment.

The United Kingdom, like the United States of America, relies heavily on Regulation, Standards and Guidelines and in the future will be aligned with Europe and the European Common Market Guidelines on clinical waste disposal and staff health issues. An area of interest for Australia is the fact that Infection Control funding must be found by the providers of health care (ie. Independent Hospitals) not the purchasers of health care (the District Health Authorities). There is concern that funds for Infection Control will be reduced, in the move to decrease the costs of the health care providers while still maintaining services. The currently identified problems with this type of funding include; who pays for outbreak monitoring (surveillance) and laboratory tests? With the closure of research institutes and the decrease in research funding, previous sources of information will no longer be available, as hospitals strive for cost cutting in a competitive market.

Infection Control in Russia is almost non-existent according to Nettleman et al.[9] There is no financial support, few supplies of items such as disposable gloves and punitive bureaucracy, which results in concealment of outcomes of hospitalisation to avoid financial and other penalties.

Infection Control in Japan[10, 11] is complicated by extensive and prolonged use of multiple antibiotics, resulting in development of multiresistant bacteria.

In Saudi Arabia,[12] the issues of costs, language and cultural differences, the availability of water and electricity and the prevalence of communicable diseases all affect Infection Control practice and the measurement of outcomes.

Infection Control in China is recognised as important. There are 1.2 billion people in China and 50 million are hospitalised each year. Hospital-acquired infections are reported to affect 9.7% of patients (Professor Wang, Beijing, Personal Communication). One hundred and twenty-four hospitals in China participate in regular ongoing surveillance. These are made up of 3 hospitals in each major province comprising a small, a medium and a large teaching hospital. Each month, all data is forwarded to Professor Wang on a computer disc for analysis.

The major infectious diseases in China are reported to be hepatitis, diarrhoeal diseases due to bacteria (shigella, salmonella and cholera) and viruses (rotavirus), and tuberculosis (personal communication Ms. C Lacy). There is no routine post-hospital discharge surveillance for hospital-acquired infections and the data reported monthly is based on the signs and symptoms of infection, not on laboratory-confirmed isolates.

CONCLUSIONS

Effective Infection Control systems are dependent on effective laboratory services and an economy where there is sufficient money available for the staffing and implementation of quality systems, and surveillance programmes. There is also a requirement to understand the need for evaluation of data collections and their strengths and weaknesses.

The Infection Control Systems surveyed have been developed in response to different legislation in each country. Inter-country comparisons of outcome measures are rarely available or evaluable.

Data collection and definitions are variable in each country and thus prevent valid inter-country comparisons of outcomes.

The local health status of residents also has a major impact on the type of nosocomial infections likely to be detected, the surveillance methods used and their effectiveness. Financial support for Infection Control also impacts on the programmes and its effectiveness.

American Infection Control practices and outcomes dominate the current infection control literature.

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