

Infectious Disease Transmission in Outpatient Health Care Settings

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ABSTRACT

Increased provision of health care in outpatient settings and worries around occupational transmission of illnesses have heightened awareness of the risk of Infectious illness transmission in ambulatory health care settings. Unlike nosocomial infections in hospitals, diseases transmitted to outpatients Settings are neither routinely monitored nor are they likely to be detected by standard qi surveillance. We analysed the literature to find cases and clusters of infections related with outpatient health care in order to better describe the range of such events. We discovered and epidemiologically described 53 such occurrences from 1961 to 1990 as part of this review. Transmission has occurred in general medical offices, clinics, and emergency departments (13), ophthalmologists' offices and clinics (11), dentistry offices (13), and alternative-care settings (13). (six). Our findings imply that inpatient infection-control strategies should be expanded to outpatient health care settings by assigning particular responsibilities for infection control and adopting surveillance and prevention methods.

1. INTRODUCTION

Accreditation now requires programmes for surveillance, prevention, and control of nosocomial infections in each and every hospital in the United States.[1]Because these hospital-based surveillance programmes have produced epidemiologic data on nosocomial infections in hospitalised patients, the epidemiology of hospital-acquired infections is well understood. In contrast, disease outbreaks and other instances of disease transmission in outpatient health care settings are neither frequently monitored nor likely to be detected by existing surveillance systems.

Consequently, despite the fact that multiple outbreaks in outpatient settings have been reported over the past two decades, there are no good estimates of their prevalence. At least two considerations emphasise the need for a deeper understanding of the epidemiology of infectious disease transmission in outpatient settings: Concerns about the potential transmission of human immunodeficiency virus (HIV) and other dangerous pathogens motivated the establishment of new recommendations to limit the spread of infectious

illnesses in health care settings throughout the past decade. [2,3] The percentage of health care contacts, including ambulatory surgery, that occur in outpatient settings is growing.[4]

In this paper, we present the results of a literature review conducted to identify outbreaks and other scenarios in which outbreaks occur. It is possible that infectious illnesses were transferred in outpatient settings. This study sought to (1) epidemiologically characterise infectious disease transmission in outpatient settings and (2) identify hypotheses regarding infectious disease transmission in outpatient health care settings that provide a rational basis for developing disease control and prevention strategies in such settings.

2. METHODS AND MATERIALS

For this review, an outpatient setting was characterised as one in which patients did not stay overnight for medical care. (for example, medical and dental offices, and chiropractic offices). We used three sources to identify outbreaks or clusters of infections resulting from transmission in outpatient health care settings: (1) a MEDLINE search for the period 1966 to 1989; (2) a manual review of selected infectious disease and other biomedical journals for the period 1980 to 1990; and (3) a search of records of over 2900 epidemiologic field investigations conducted by the Centers for Disease Control (Atlanta, Georgia).⁵ In addition, we reviewed the publications cited in the bibliographies of the three approaches' outputs.

3. RESULTS

From 1961 to 2006, we discovered 53 reports of infectious illness spread in outpatient settings (one review paper summarised reports of over 20 outbreaks of keratoconjunctivitis related with outpatient health care⁵⁹; from this publication, we evaluated only those outbreaks that happened after 1969) and one prospective investigation evaluating the risk of illness in individuals exposed to a pediatrician's office.⁶ "Infectious agents included several gram-negative and gram-positive bacteria, mycobacteria, viruses, and parasites. Transmission occurred at general medical offices, clinics, emergency departments, and a podiatry office, as well as ophthalmologists' offices and clinics, dental offices, and alternative-care settings (e.g., chiropractic and acupuncture clinics). In these studies, the number of infected individuals or cases ranged from one to over 132. 29 incidents were associated with common-source transmission from contaminated solutions or equipment, 14 with person-to-person transmission from or involving infected health care workers, and 10 with airborne or droplet transmission of pathogens from infected patients or health care workers to other patients and workers.

General Medical Offices, Clinics, and Emergency Departments

In 23 cases, transmission occurred in medical offices, clinics, emergency rooms, and a podiatry office⁶ "8. Ten of the thirteen instances of transmission from a common source occurred when patients were exposed to or treated with contaminated disinfectants, antiseptics, drugs, or vaccines. In 1982, seven children who had received the diphtheria-tetanus-pertussis vaccine from a tainted multidose vial at a paediatric practise in Oklahoma developed group A β -hemolytic streptococcal abscesses " In 1982, eight occurrences of *Serratia marcescens* septic arthritis were linked to the use of benzalkonium chloride antiseptic

for skin washing on patients receiving intra-articular injections of steroids. 15 Six of the thirteen instances of common-source transmission were caused by atypical mycobacteria.

Eye doctors' offices and clinics 11 reports involved transmission offices of ophthalmologists or eye clinics²⁹ "9 (Table 3). The vast majority of these incidents were outbreaks of adenovirus keratoconjunctivitis in which transmission was linked to the use of inadequately disinfected equipment (particularly tonometers) and/or inadequate handwashing practises. In 1980, a cluster of Mycobacterium che lonei keratitis cases in Georgia were attributed to a contaminated solution (disinfectant and/or topical anaesthetic). oe Dental Offices .In 13 reports, dentists' offices and clinics were the site of transmission or suspected transmission. 40"52 (Table 4). In 12 of these cases, the research suggested that an infected dentist or dental health care worker transmitted infection to one or more patients. Although hepatitis B infections accounted for nine of these instances, herpes simplex virus and Mtuberculosis were also transmitted in these situations, and HIV transmission has been hypothesised. [18-19] Because each epidemic of hepatitis B was caused by patients' exposure to a single infected dental professional, we categorised the mechanism of transmission as person-to-person. In these examinations into outbreaks of hepatitis B virus, no evidence of instrument cross-contamination was discovered.

If existing infection-control recommendations had been followed, it would have been possible to prevent many of the reported outbreaks and incidents. In instances of transmission in which cases are immediately identified, early management and prevention of more cases may be possible if the source and/or route of transmission of the virus are identified rapidly. In the report by Kothari et al [13] of Pseudomonas cepacia septic arthritis resulting from intraarticular corticosteroid injections, contaminated multidose vials were identified shortly after the patient was hospitalised in the physician's office. When hepatitis B was spread by dentists who were chronic hepatitis B virus carriers, some of those dentists were allowed to resume practise if they adopted adequate barrier procedures and utilised informed consent.[20-22]

The possibility of infectious disease transmission in outpatient health care settings, such as child-care facilities and nursing homes, expands the scope of infection-control issues beyond the hospital inpatient environment. However, there are considerable distinctions between outpatient and inpatient settings, including amounts of contact between health care personnel and patients and types of medicalsurgical operations performed in outpatient settings. In addition, there may be less knowledge of and adherence to infection-control techniques in outpatient settings, and the duty for outpatient infection control and surveillance is not well delineated.

The suitability of governmental and volunteer (such as the Joint Commission on Accreditation of Health Care Organizations) regulation and the ne cessity for the commitment of financial resources are crucial concerns that must be considered when evaluating approaches to the execution of guidelines for infection control in outpatient health care settings. Health care providers, health care institutions, third-party payers, and public health organisations will be required to weigh in on the feasibility and priority of implementing these prevention initiatives.

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