HEALTHCARE ASSOCIATED OUTBREAKS

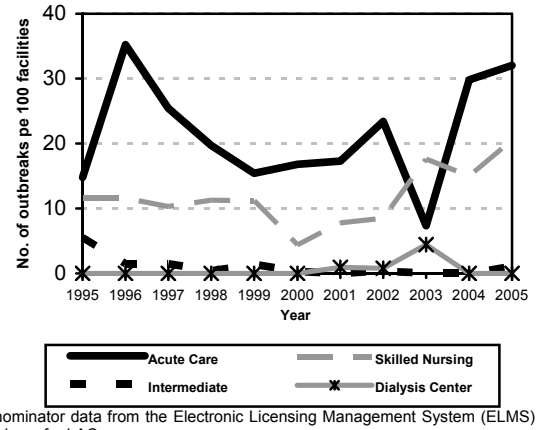
DEFINITION

Healthcare associated outbreaks are defined as clusters of nosocomial (health-facility acquired) or home-healthcare-associated infections related in time and place, or occurring above a baseline or threshold level for a facility, specific unit, or ward. Baseline is defined as what is normally observed in a particular setting.

ABSTRACT

- Confirmed healthcare facility outbreaks increased 105% from 2001-2005.
- The rate of acute hospital outbreaks increased from 2004 (Figure 1).
- In 2005, skilled nursing facility (SNF) outbreaks contributed most to the increase in healthcare facility outbreaks, and increased 21% from 2004 (Table 1). This is largely due to an increase in scabies outbreaks.

Figure 1
Healthcare Associated Outbreaks
LAC, 1995–2005



Denominator data from the Electronic Licensing Management System (ELMS) database for LAC

Table 1. Number of Reported Outbreaks in Healthcare Facilities LAC, 2000–2005

	YEAR				
Type of Facility	**2001**	**2002**	**2003**	**2004**	**2005**
Acute Care Hospitals	19	26	8	31	34
Provider Offices	0	2	0	0	0
Dialysis Facilities	1	1	9	0	0
Intermediate Care/Psych	0	1	0	0	3
Skilled Nursing Facilities	35	37	75	63	76
TOTAL	**55**	**67**	**92**	**94**	**113**

Acute Care Hospitals: There were 34 outbreaks reported in acute care hospitals in 2005 (Table 1)—an increase of 10% from 2004. Thirty-eight percent (n=13) of these outbreaks occurred in specialty units, e.g. NICU, liver transplant unit and cardio-thoracic unit (Table 2). Twenty-six percent (n=9) occurred in the sub-acute, long-term or transitional care units within the acute care hospital. Thirty-eight percent (n=13) of acute care outbreaks were caused by the scabies mite, and forty-four percent (n=15) were bacterial. The remainder were of viral or fungal etiology (Table 3). Ten hospitals reported more than one outbreak in 2005. MRSA NICU outbreaks reported decreased by 33 % (n=6) in 2005 (as compared to 9 outbreaks in 2004). In 2005, the etiologic agents contributing the largest number of cases in acute care outbreaks were scabies (n=229), followed by Clostridium difficile (n=4) and MRSA (n=4).

Table 2. Acute Care Outbreaks by Hospital Unit—LAC, 2005

Outbreak Location	No. of Outbreaks
Neonatal Intensive Care	6
Medical-Surgical Unit	5
Transitional Care Unit	4
Adult Intensive Care	3
Pediatrics	3
Sub-Acute Unit	3
Cardio-thoracic Unit	2
Definitive Observation	2
Long-term Care	2
Other Unit	2
Burn Unit	1
Liver Transplant Unit	1
Total	**34**

Table 3. Acute Care Hospital Outbreaks by Disease/Condition—LAC, 2005

Disease/Condition/ Etiologic Agent	No. of Outbreaks	No. of Cases
Scabies	13	229
Other	5	23
Clostridium difficile	4	56
MRSA	4	44
Acinetobacter baumannii	2	14
Aspergillus fumigatus	2	7
Influenza A	2	25
Norovirus	1	10
Serratia Marcescens	1	6
TOTAL	**34**	**414**

Skilled Nursing Facilities: In 2005, 76 outbreaks were reported in skilled nursing facilities. Gastroenteritis and scabies were the most common causes (Table 4), accounting for 93% of the total outbreaks in SNFs and 87% of the total cases.

Table 4. Skilled Nursing Facility (SNF) Outbreaks by Disease/Condition LAC, 2005

Disease/Condition	No. of Outbreaks	No. of Cases
Scabies	55	404
Gastroenteritis • unspecified (n=7) • norovirus (n=9)	16	392
Respiratory illness • influenza (n=1) • pneumonia (n=1) • unspecified (n=1)	3	109
Headlice	1	3
Unknown Rash	1	8
Total	**76**	**916**

COMMENTS

Since 2001, the total number of confirmed healthcare facility outbreaks reported to the health department has steadily increased, from 55 in 2001 to 113 in 2005. Acute care facility outbreaks are investigated and managed primarily by ACDC staff with infection control and related clinical expertise. Frequently, depending on multiple factors, such as disease morbidity/mortality and the outbreak complexity, consultation and assistance is requested from California Department of Health Services (CDHS), Centers for Disease Control and Prevention (CDC), LAC DHS Health Facilities Division (HF), LAC DHS Environmental Health, and local state or city service providers, e.g. the Los Angeles Department of Water and Power. The hospital infection control professional (ICP) plays a pivotal role in outbreak identification, clinical data gathering, specimen collection, and is the key contact person who facilitates communication between the hospital and the health department.

Los Angeles County experienced a dramatic increase in the number of reported scabies outbreaks in both acute care hospitals and skilled nursing facilities from 2004-2005 (Tables 3, 4). In 2004, 7 scabies outbreaks (61 cases) were reported in acute care facilities, as compared to 13 (229 cases) acute care facility outbreaks in 2005, an outbreak increase of 85%. This increase may be attributed to SNF residents that were admitted to the facility with undiagnosed scabies. During this same time period, outbreaks of scabies in SNFs also increased by 62%. In 2004, 34 outbreaks (358 cases) were reported, as compared to 55 outbreaks (404 cases) in 2005.

Nosocomial outbreaks of scabies in acute and long-term healthcare settings that adversely impact patients and healthcare workers are widely reported in the literature[1]. Unrecognized or misdiagnosed scabies infestation, treatment failures, and re-infestation highlight the need for multi-disciplinary collaboration in both settings. Successful outbreak management must include the acute care facility, the skilled nursing facility, the health department and the community[2]. Scabies, while not life-threatening, can pose significant health risks to individuals, particularly those who are elderly, immunocompromised or with other underlying illness, or those living in a group or institutional setting. These outbreaks also represent a significant financial burden on the facilities[3]. ACDC initiated on-going efforts to address this rising trend. In October 2005 ACDC distributed a Health Alert Network (HAN) to LAC dermatologists that briefly characterized the 2004 LAC acute care hospital and SNF scabies outbreaks, provided a brief overview of the problem, advised them of disease reporting requirements and also the benefits of reporting outbreaks to the health department. In addition, a SNF needs assessment was initiated to assess general communicable disease reporting knowledge, infection control practices, identify knowledge gaps and elicit training needs. The survey continued into 2006 and the final results are pending.

ACDC also investigated an elaborate acute care facility outbreak of *Serratia Marcescens* infection in post-cardiac surgery patients that demonstrates the complexities inherent in a multi-agency, multi-jurisdictional investigation. The investigation led to the eventual discovery of a multi-state outbreak caused by the same product which was compounded and nationally distributed (see 2005 Serratia Marcescens Special Report).

The Hospital Outreach Unit (HOU) continues to enhance communication between acute care facilities and ACDC. Since the initial contact meetings in 2003, HOU staff have maintained relationships with key hospital staff, primarily the ICP, and is frequently the ICP's first point of contact with the health department when reporting an outbreak or requesting assistance with communicable disease reporting.

[1] Jimenez-Lucho V, Fallon F, Caputo C, et al. Role of Prolonged Surveillance in the Eradication of Nosocomial Scabies in an Extended Care Veterans Affairs Medical Center. A JIC. 1995;23(1):44-49.
[2] Olugbenga O, Wu P, Conlon M et al. An Outbreak of Scabies in a Teaching Hospital: Lessons Learned. Infec Control Hosp Epidemiol 2001;22:13-18.
[3] de Beer G, Miller M, Tremblay L, et al. An Outbreak of Scabies in a Long-Term Care Facility: The Role of Misdiagnosis and the Costs Associated with Control. Infec Control Hosp Epidemiol 2006;27:517-518.