



COMMUNITY-ACQUIRED DISEASE OUTBREAKS

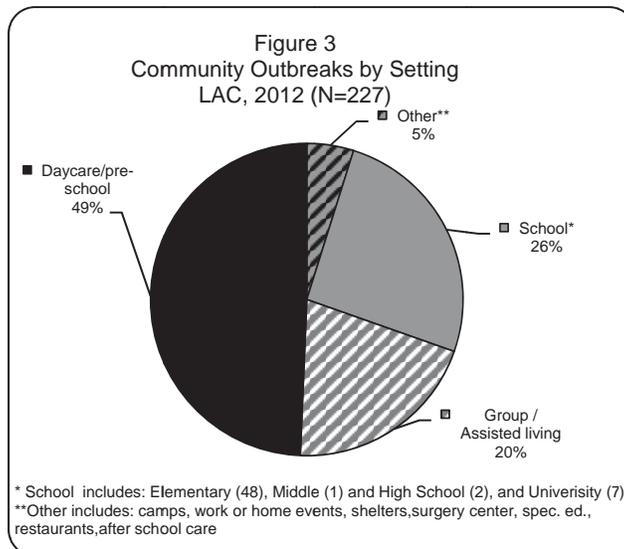
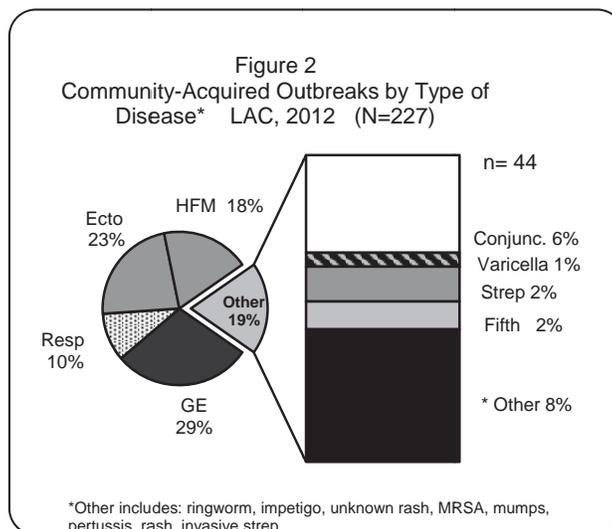
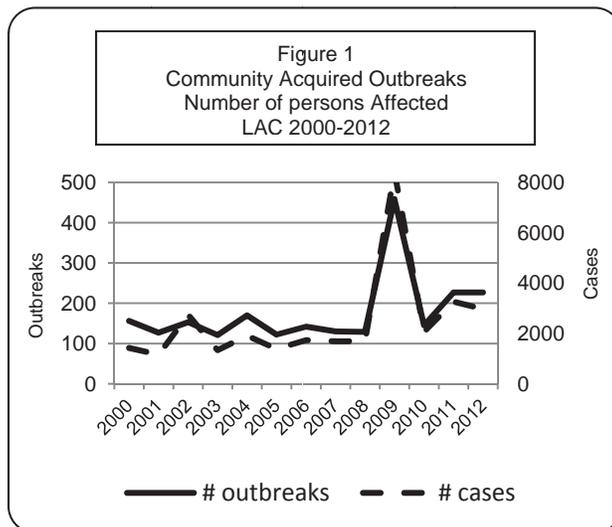
ABSTRACT

- In 2012, 227 community-acquired disease outbreaks accounted for 2970 cases of illness (Figure 1).
- Four general disease categories accounted for 81% of all outbreak causes. Gastroenteritis (GE), ectoparasites and respiratory outbreaks contributed 29%, 23% and 10%, respectively. Hand, Foot and Mouth (HFM) outbreak levels increased in 2012 to 18%, almost exclusively in the preschool setting. (Figure 2, Table 2).
- Three outbreak settings accounted for almost all (95%) of the reported outbreaks. Pre-schools, schools, and group/assisted living settings contributed 49%, 26% and 20%, respectively. (Figure 3, Table 2) Outbreaks in pre-school settings were higher than previous years, driven mainly by the increase in HFM outbreaks.

DATA

A disease outbreak is an infection/infestation cluster, occurring in time or location, with case numbers above expected for a specified population or location. Depending on the nature of the outbreak, investigation responsibility is maintained by either Los Angeles County Department of Public Health Acute Communicable Disease Control Program (ACDC) or Community Health Services with ACDC providing consultation as needed. The outbreaks reported in this section do not include outbreaks associated with food (see Foodborne Outbreaks section) or regulated facilities specifically licensed to provide medical care (see Healthcare Associated Outbreaks section).

Most outbreaks in 2012 were GE outbreaks caused by either norovirus (22) or of undetermined etiology (41). GE outbreaks also had the higher case counts; norovirus outbreaks had a mean of 46 cases per outbreak and unspecified GE had a 16 cases per outbreak. The single outbreak with the highest number of cases (139) was caused by norovirus. Many of the GE outbreaks of undetermined etiology had characteristics similar to the confirmed norovirus outbreaks, but specimens were not available for testing. These figures highlight the continuing circulation of norovirus and reflect the ease this agent can be transmitted from person-to-person in community settings. Additionally, during late 2012 a new strain of Norovirus (GII.4 Sydney) was seen in Los Angeles; mainly was affecting the older populations in group/assisted living communities (Table 1,2). See also Healthcare Associated Outbreaks section as norovirus was affecting Skilled Nursing facilities during 2012. Interestingly, GE outbreaks in pre-school and school locations decreased from the 2011 levels.





Only three of 23 respiratory outbreaks were confirmed Influenza in 2012, often due to a lack of specific laboratory testing. Along with a decrease in reports, the size of respiratory outbreaks in 2012 was also reduced compared to the previous year. In 2011, 49 respiratory outbreaks were reported; averaging 28 cases each with three outbreaks over 100 cases. For 2012, only 23 outbreaks were reported, a much smaller case/outbreak average of 10, and the largest outbreak had 24 cases. It was a very quiet 2012-2013 influenza season and for the year 2012, most outbreaks were reported early in the year associated with the 2011-2012 influenza season.

The outbreak setting often has an effect on type of disease being reported. GE outbreaks were dominant in the group/assisted living sites; the location of record for 53% of all GI outbreaks and 76% of the outbreaks reported from this setting. Nearly all of the confirmed Norovirus outbreaks (82%) were in group/assisted living sites. Ectoparasites continues to be a major cause of outbreaks and also show a location preference; group/assisted living settings tend to report scabies, while schools and pre-schools are affected more often by head lice.

The predominance of outbreaks affecting children in educational settings (preschool to university) is well recognized. In 2012 the most common outbreak settings were again pre-schools and schools accounting for 75% of all outbreaks. (Figure 3, Table 2). In the preschool setting, HFM and pediculosis accounted for 59% of the reports.

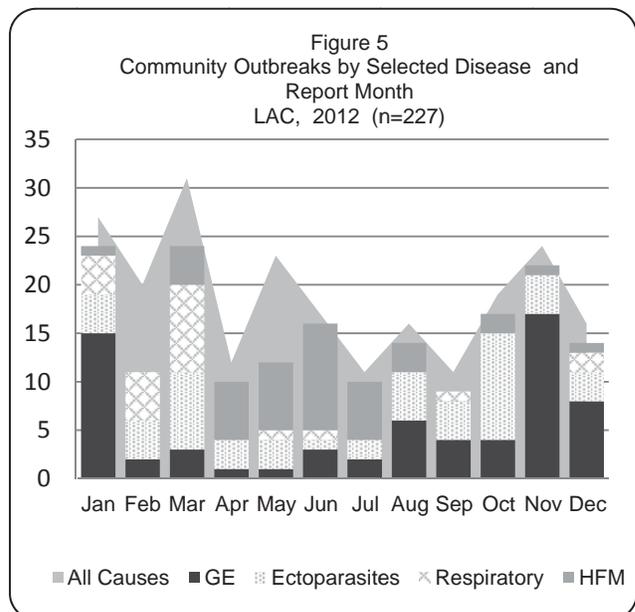
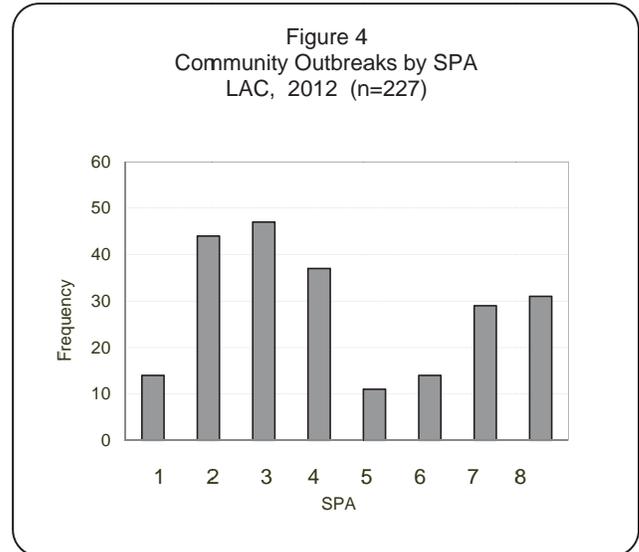
Outbreaks were reported from all eight SPAs (Figure 4). SPA 3, San Gabriel (47) and SPA 2, San Fernando (44) had the most outbreaks for the past 3 years.

The graph of community-acquired outbreaks by report month (Figure 5) further illustrates the impact of GE, respiratory, HFM, and ectoparasite outbreaks. These four disease categories dominated the outbreak epidemic curve each month throughout the year. HFM was particularly present during April through July - usually a quieter period for outbreak reports.

COMMENTS

Only 1% of the outbreak reports are for disease categories that would be individually reported to the local health department (Tables 1, 2). Outbreaks are most often reported from locations with the ability to recognize an unusual occurrence of disease in a group of individuals and have a procedure in place to report to the local health department. This results in most outbreaks being reported in pre-schools, schools and residential facilities.

Characteristics of community-acquired outbreaks result from interactions among particular age groups, locations, and specific diseases. A profile emerges where children acquire infection or infestation associated with a school setting (85 outbreaks reported in pre-schools, 82 reported in elementary schools – 74% of all outbreaks). Gastroenteritis,





respiratory and pediculosis (head lice), were most common in this young group. While illness is often linked to schools, it must be noted that a school association might be serendipitous to the real etiologic location. Children who share a school setting often have other social interactions that could also account for the infection or infestation (e.g., sleepovers, parties, play dates, after school sports, etc.). But whatever the original source exposure, schools need to be vigilant to prevent further transmission and can be greatly aided by the expertise of public health nurses in this effort. The second age group affected is an older population associated with group and assisted living settings. In this age category, GE and scabies are the most common causes (Table 2). While community transmission of disease most certainly occurs in other settings or locations, they lack the opportunity for such outbreaks to be recognized or reported to Public Health.

Table 1. Community-Acquired Outbreaks by Disease— LAC, 2012

Disease	No. of outbreaks	No. of cases	Cases per outbreak (average)	Cases per outbreak (range)
Varicella	2	11	6	5-6
Streptococcal	5	58	12	6-18
Scabies	3	30	10	2-25
Hand, foot & mouth disease	42	357	7	2-31
Pediculosis	49	296	6	2-25
GE illness-Norovirus	22	1017	46	3-139
GE illness-Shigella	0	0	0	0
GE illness-Salmonella	3	9	3	3
GE illness-Unknown	41	662	16	3-72
Fifth disease	4	40	10	4-17
Conjunctivitis	14	72	5	2-15
Influenza	3	30	10	8-14
Respiratory-Unknown	20	229	11	4-24
Other*	19	150	8	2-30
Total	227	2970	13	2-139

* Includes: Unk. rash(5), ringworm (3), impetigo (2), MRSA(1), Pertussis (2), mumps (1), IGAS and other/unspecified (4).



Table 2. Community-Acquired Outbreaks by Disease and Setting — LAC, 2012

Disease	Group Home^a	School^b	Preschool or Daycare	Other^c	TOTAL
Varicella	0	2	0	0	2
Streptococcal	0	4	1	0	5
Scabies	3	0	0	0	3
Hand, foot & mouth disease	1	4	37	0	42
Pediculosis	3	14	29	3	49
GE illness-Norovirus	18	2	2	0	22
GE illness-Shigella	0	0	0	0	0
GE illness-Salmonella	2	0	1	0	3
GE illness-Unknown	15	6	16	4	41
Fifth disease (Parvovirus)	0	3	1	0	4
Conjunctivitis	1	2	11	0	14
Influenza	1	2	0	0	3
Respiratory-Unknown	2	11	7	0	20
Other	0	8	7	4	19
Total	46	58	112	11	227

^a Includes centers for retirement/assisted living (40), Group homes (5) and rehabilitation (1)

^b Includes elementary (48) middle school (1) high school (2), and universities (7).

^c Includes home events (1), work events (1) special ed. sites (1), camps (1), restaurant (2), shelters (2) surgery center (1), and after-school site (2).



COMMUNITY-ACQUIRED DISEASE OUTBREAKS

ABSTRACT

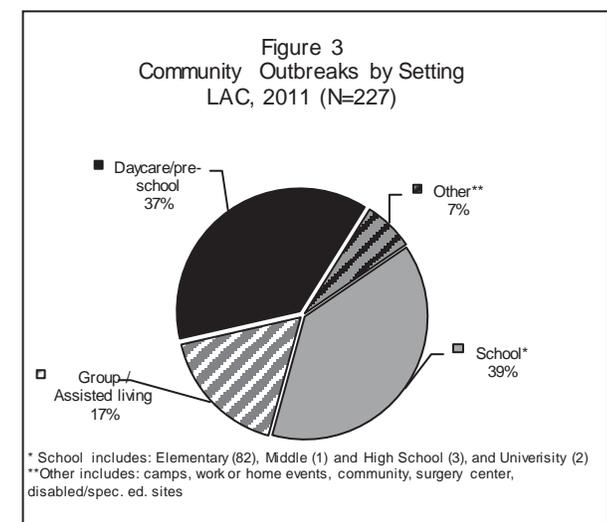
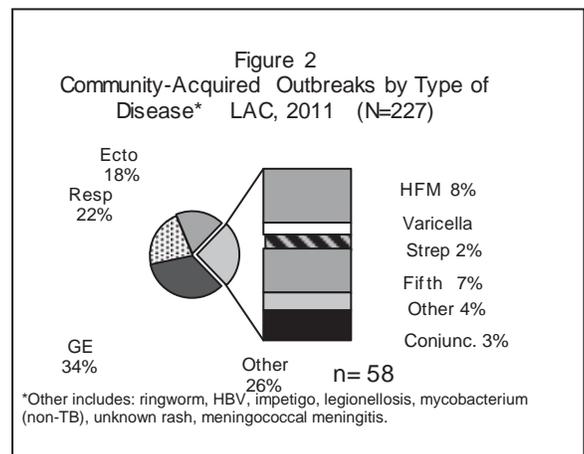
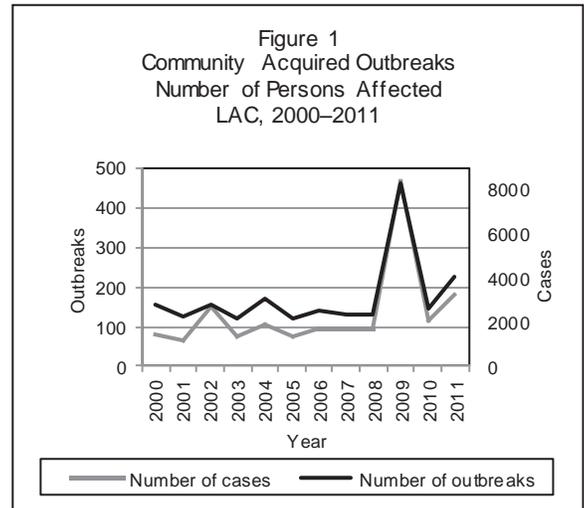
- In 2011, 227 community-acquired non-foodborne disease outbreaks accounted for at least 3261 cases of illness. This is higher than most previous years but may represent realignment to customary levels after the unprecedented increase reporting of respiratory outbreaks during the 2009 H1N1 influenza season (Figure 1).
- Three disease categories accounted for 74% (169) of all outbreak causes. Top disease categories were gastroenteritis, respiratory, and ectoparasites with 34%, 22% and 18% of total outbreaks, respectively.
- The percentage of community respiratory outbreaks has varied dramatically from 79% in 2009, 8% in 2010 to 22% in 2011 (Figure 2).
- Three outbreak settings account for almost all (93%) of the reported outbreaks. Schools, pre-schools, and group/assisted living settings are the most common settings of community-acquired outbreaks, with 39%, 37% and 17%, respectively. (Figure 3, Table 2)

DATA

Disease outbreaks are defined as clusters of an illness that occur in a similar time or place, with case numbers above expected for a specified population or location. Depending on the nature of the outbreak, investigation responsibility is maintained by either ACDC or Community Health Services with ACDC providing consultation as needed. The outbreaks reported in this section do not include outbreaks associated with food (see Foodborne Outbreaks section) or regulated facilities specifically licensed to provide medical care (see Healthcare Associated Outbreaks section).

The location of outbreaks often has an effect on type of disease being reported. While gastroenteritis (GE) outbreaks were mostly reported in the preschool setting (37), GE outbreaks made up over half of the location-specific reports from the group/assisted living settings and 'Other' settings. Ectoparasites have historically been a major cause of outbreaks and also show a location preference; group/assisted living settings tend to report scabies, while schools and pre-schools are affected more often by head lice. Respiratory illness outbreaks were still seen predominately in the school setting – 82%.

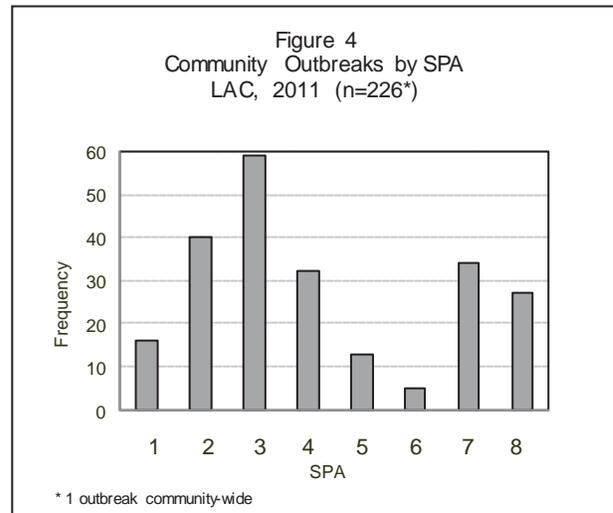
Most respiratory outbreaks were of unknown etiology, most often due to a lack of specific laboratory testing, but ten were confirmed influenza in 2011. Respiratory outbreaks had the highest incident-specific case average of 27 cases per outbreak—confirmed influenza outbreaks having 40 cases per outbreak. The single outbreak with the highest number of cases (148) was an influenza outbreak at an international





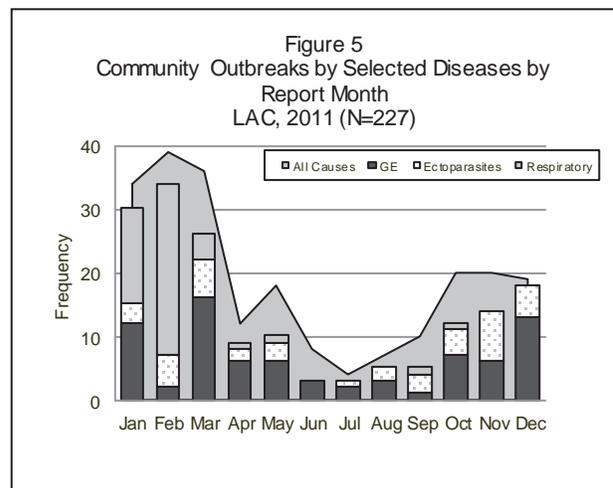
work conference. Outbreaks caused by norovirus (n=13) or of undetermined GE etiology (n=63) had a mean of 20 and 14 cases per outbreak, respectively. Many of the undetermined GE outbreaks had characteristics similar to the confirmed norovirus outbreaks, but were not tested for confirmation. These figures highlight the continuing circulation of norovirus and reflect the ease this agent can be transmitted from person-to-person in community settings. (Table 1, 2).

The predominance of outbreaks affecting children in educational settings has been recognized for several years. In 2011 the most common outbreak settings were again pre-schools and schools accounting for 76% of all outbreaks. (Figure 3, Table 2).



Outbreaks were reported from all eight SPAs (Figure 4). SPA 3, San Gabriel (59) and SPA 2, San Fernando (40) had the most outbreaks for 2011—they also had the most outbreaks for 2010.

The graph of community-acquired outbreaks by report month (Figure 5) further illustrates the impact of GE, respiratory, and ectoparasite infections. These three disease categories dominated the outbreak epidemic curve each month throughout the year. The summer months of June, July, and August were low, perhaps affected by disease-specific seasonality and vacations (i.e., many schools out of session).



COMMENTS

Only three percent of outbreaks were due to diseases that would be individually reported to the local health department (Tables 1, 2). Outbreaks are most often reported by institutions with the ability to recognize an unusual incidence of disease in a group of individuals and have a procedure in place to report to the local health department. The result is that most outbreaks are reported by pre-schools, schools and residential facilities.

While illness is often linked to schools, it must be noted that a school association might be serendipitous to the real etiologic location. Children who share a school setting often have other social interactions that could account for the infection or infestation (e.g., sleepovers, birthday parties, play dates, after school sports, etc.). But whatever the original source exposure, schools need to be vigilant to prevent further transmission and can be greatly aided by the expertise of public health nurses in this effort.

Community-acquired outbreaks result from interactions among particular age groups, locations, and specific diseases. A profile emerges where the very young and early adolescent acquire infection or infestation at school (76% in pre-school, elementary, or high school). Gastroenteritis, respiratory and pediculosis (head lice), were most common in this young group. The second age group affected by outbreaks is an older population, often associated with group and assisted living settings. In this age category, GE and scabies are the most common causes (Table 2). While community transmission of disease occurs in other settings or locations, many such outbreaks do not get recognized or reported to Public Health.



Table 1. Community-Acquired Outbreaks by Disease— LAC, 2011

Disease	No. of outbreaks	No. of cases	Cases per outbreak (average)	Cases per outbreak (range)
Varicella	4	23	6	4-7
Streptococcus, Group A	5	17	3	2-6
Scabies	9	36	4	2-13
Hand, foot & mouth disease	18	114	6	2-33
Pediculosis	33	292	9	2-54
GE illness-Norovirus	13	258	20	6-62
GE illness-Shigella	0	0	0	0
GE illness-Salmonella	1	3	3	3
GE illness-Unknown	63	864	14	2-100
Fifth disease	15	167	11	3-32
Conjunctivitis-Unknown	6	95	16	2-66
Influenza	10	396	40	9-148
Respiratory-Unknown	39	959	25	1-126
Other*	11	37	3	2-6
Total	227	3261	14	2-148

* Includes: ringworm (3), legionellosis (2), hepatitis B, impetigo, meningococcal disease, mycobacterium (nonTB), RSV and unk. rash (1 each).

Table 2. Community-Acquired Outbreaks by Disease and Setting — LAC, 2011

Disease	Group Home ^a	School ^b	Preschool or Daycare	Other ^c	TOTAL
Varicella	1	2	0	1	4
Streptococcus, Group A	0	4	1	0	5
Scabies	7	0	2	0	9
Hand, foot & mouth disease	0	3	15	0	18
Pediculosis	3	15	15	0	33
GE illness-Norovirus	8	1	3	1	13
GE illness-Shigella	0	0	0	0	0
GE illness-Salmonella	0	0	0	1	1
GE illness-Unknown	12	10	34	7	63
Fifth disease (Parvovirus)	0	10	5	0	15
Conjunctivitis-Unknown	0	2	4	0	6
Influenza	1	8	0	1	10
Respiratory-Unknown	2	32	4	1	39
Other	5	1	2	3	11
Total	39	88	85	15	227

^a Includes centers for retirement/assisted living (29), Group homes (7) and rehabilitation (3)

^b Includes elementary (82) middle school (1) high school (3), and universities (2).

^c Includes home events (2), work events (4) special ed. sites (2), camps (2), restaurant (2), gym (1), surgery center (1), and community(1).



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ABSTRACT

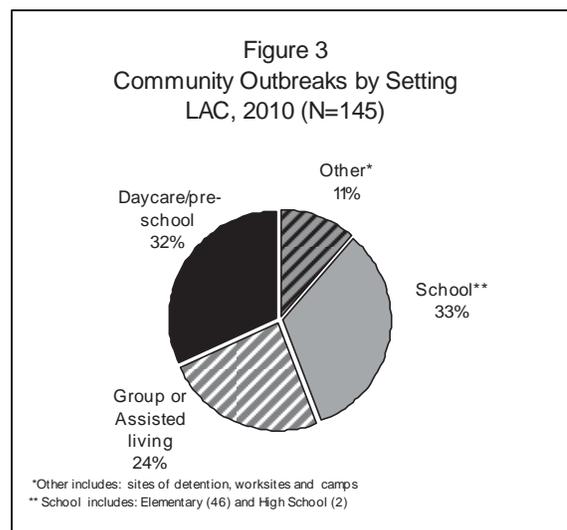
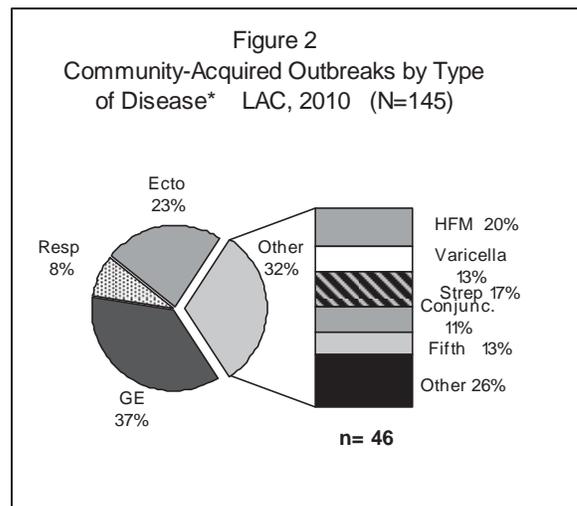
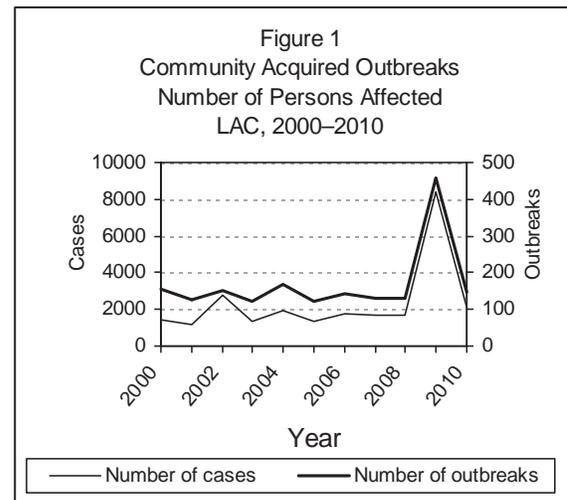
- In 2010, 145 community-acquired disease outbreaks accounted for 2060 cases of illness. This represents realignment to customary levels after the increase caused by respiratory outbreak reports during the 2009 H1N1 influenza season (Figure 1).
- The top disease categories were gastroenteritis (GE) and ectoparasites with 37% and 23%, respectively.
- The percentage of community outbreaks caused by respiratory infections dramatically decreased in 2010 to 8%, from 79% in 2009 (Figures 1, 2).
- Pre-schools, schools, and group homes shared as the most common setting of community-acquired outbreaks, with 32%, 33% and 24% of all outbreaks (Figure 3, Table 2).

DATA

Disease outbreaks are defined as clusters of illness that occur in a similar time or place, with case numbers above baseline for a specified population or location. Depending on the nature of the outbreak, investigation responsibility is maintained by either ACDC or Community Health Services with ACDC providing consultation as needed. The outbreaks reported in this section do not include outbreaks associated with food (see Foodborne Outbreaks section) or regulated facilities specifically licensed to provide medical care (see Healthcare Associated Outbreaks section).

Gastroenteritis (GE) and ectoparasites were the most common cause of outbreaks, comprising 37% and 23% of all reported outbreaks, respectively (Figure 2, Table 1). Respiratory illness outbreaks, so prominent the year before, dropped to only 8% of confirmed outbreaks in 2010. All of the respiratory outbreaks were of unknown etiology, most often due to lack of specific laboratory testing.

GE and pediculosis outbreaks had the highest incident-specific case average with a mean of 22 and 15 cases per outbreak, respectively. The single outbreak with the highest number of cases (149) was an unknown GE outbreak at an elementary school. Outbreaks caused by norovirus (n=11) or of undetermined GE etiology (n=40) had a mean of 28 and 21 cases per outbreak, respectively. Many of the undetermined GE outbreaks had characteristics similar to the confirmed norovirus outbreaks, but were not tested for confirmation. These figures highlight the continuing circulation of norovirus and reflect the ease this agent can be transmitted from person-to-person in community settings, especially among the very young and elderly. GE outbreaks were





also the most commonly reported in group home settings - 63% of all group home outbreaks were GE in nature (Table 1).

The predominance of outbreaks affecting children in educational settings has been recognized over the last several years. In 2010 the most common outbreak settings were again pre-schools and schools accounting for 65% of all outbreaks. Events among younger age children were preferentially reported - pre-schools (46), elementary schools (46), and high schools (2) (Figure 3, Table 2).

Outbreaks were reported from all eight SPAs (Figure 4). SPA 3, San Gabriel (37) had the most outbreaks for 2010.

The chart of community-acquired outbreaks by onset month (Figure 5) further illustrates the impact of GE, ectoparasites, and respiratory infections. These three disease categories dominated the outbreak epidemic curve throughout the year. Outbreaks caused by other disease categories (e.g., Hand Foot and Mouth, Streptococcal disease, Fifth disease, conjunctivitis, ringworm) were seen earlier in the year (January – May). The summer months of June and July were low, perhaps affected by disease-specific seasonality and vacation.

COMMENTS

While the number of outbreaks and outbreak associated cases in 2009 was unprecedented, 2010 saw report levels quickly return to usual. In preparation for H1N1 activity in 2009, Public Health had made strong outreach efforts to school settings regarding illness transmission, prevention activities and reporting of clusters. These efforts may have had some continuing 'reporting effect' as locations were familiar with the outbreak reporting process.

Community-acquired outbreaks result from interactions among particular age groups, locations, and specific diseases. A profile emerges where the very young and early adolescent acquire infection or infestation at school (65% in pre-school, elementary, or high school). Gastroenteritis, pediculosis (head lice), respiratory, and varicella were most common in this young group. Only a residual of the respiratory outbreaks in 2009 were apparent this year, dropping from 363 to just 12. Of interest, despite the huge decline in overall respiratory reports, 92% and 93% of the respiratory outbreaks in 2009 and 2010 respectively, occurred in this young group (pre-school and school category). The second age group affected by outbreaks is an older population, often associated with group home settings (32%). In this age category, GE and scabies are the most common causes (Table 2). While community transmission of disease occurs in other settings or locations, many such outbreaks do not get recognized or reported to Public Health.

While illness is often linked to a school, it must be noted that a school association might be serendipitous to the real etiologic location. Children who share a school setting have numerous other social interactions that could account for the infection or infestation (e.g., sleepovers, birthday parties, play dates, after school sports, etc). But whatever the original source exposure, schools need to be vigilant to prevent further transmission and can be greatly aided by the expertise of public health nurses in this effort.

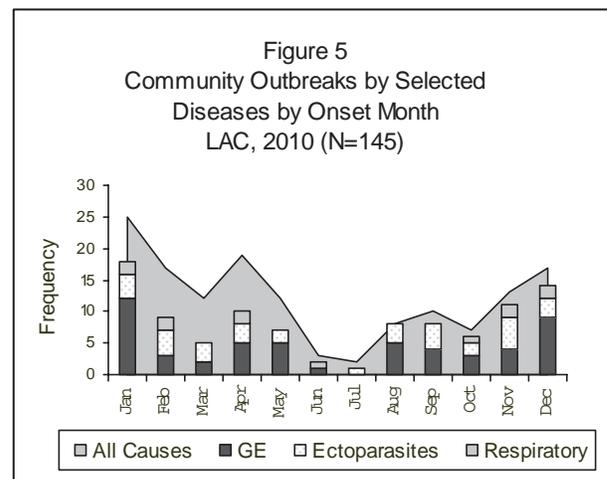
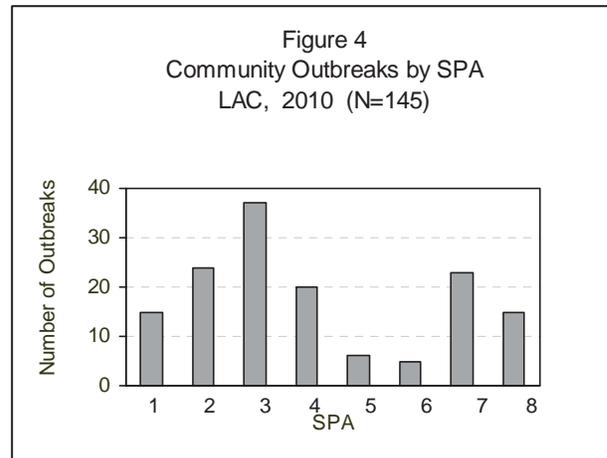




Table 1. Community-Acquired Outbreaks by Disease— LAC, 2010

Disease	No. of outbreaks	No. of cases	Cases per outbreak (average)	Cases per outbreak (range)
Varicella	6	46	8	5-11
Streptococcal	8	55	7	2-17
Scabies	13	55	4	2-11
Hand, foot & mouth disease	9	100	11	5-19
Pediculosis	21	315	15	2-55
GE illness-Norovirus	11	305	28	10-57
GE illness-Shigella	2	8	4	3-5
GE illness-Salmonella	0	0	0	0
GE illness-Unknown	40	858	21	4-149
Fifth disease	6	110	18	7-37
Conjunctivitis	5	40	8	3-13
Influenza	0	0	0	0
Respiratory-Unknown	12	110	9	4-18
Other*	12	58	5	2-12
Total	145	2060	14	2-149

* Includes: Hepatitis B and C, measles, ringworm, viral meningitis, impetigo, and leishmaniasis.

Table 2. Community-Acquired Outbreaks by Disease and Setting — LAC, 2010

Disease	Group Home ^a	School ^b	Preschool or Daycare	Other ^c	TOTAL
Varicella	0	6	0	0	6
Streptococcal	0	8	0	0	8
Scabies	6	2	1	4	13
Hand, foot & mouth disease	1	0	8	0	9
Pediculosis	1	13	6	1	21
GE illness-Norovirus	7	0	1	3	11
GE illness-Shigella	0	0	2	0	2
GE illness-Salmonella	0	0	0	0	0
GE illness-Unknown	15	5	16	4	40
Fifth disease (Parvovirus)	0	5	1	0	6
Conjunctivitis	1	1	3	0	5
Influenza	0	0	0	0	0
Respiratory-Unknown	1	7	4	0	12
Other	3	1	4	4	12
Total	35	48	46	16	145

^a Includes centers for retirement, assisted living, and rehabilitation

^b Includes elementary (46) and high school (2).

^c Includes juvenile camps/jail/prison/detention (6), special ed. site (3), worksite (2) and camps/aftercare (2).



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ABSTRACT

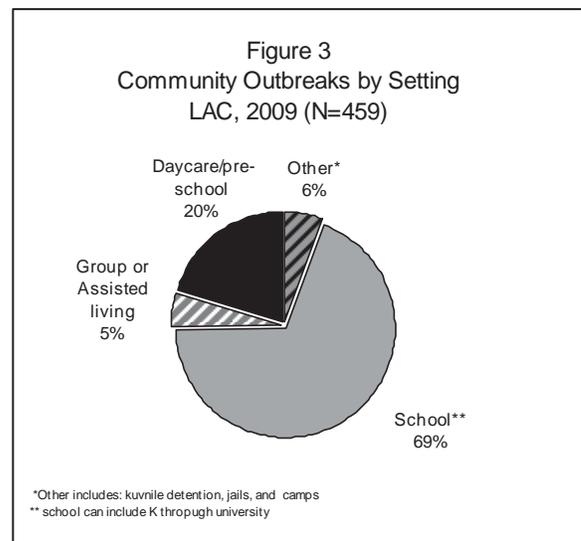
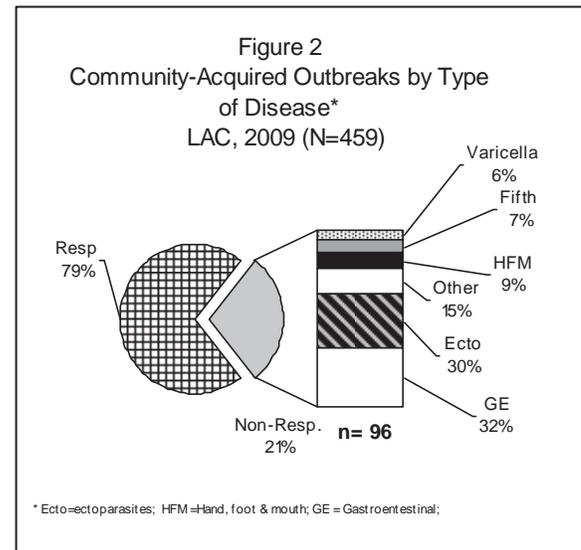
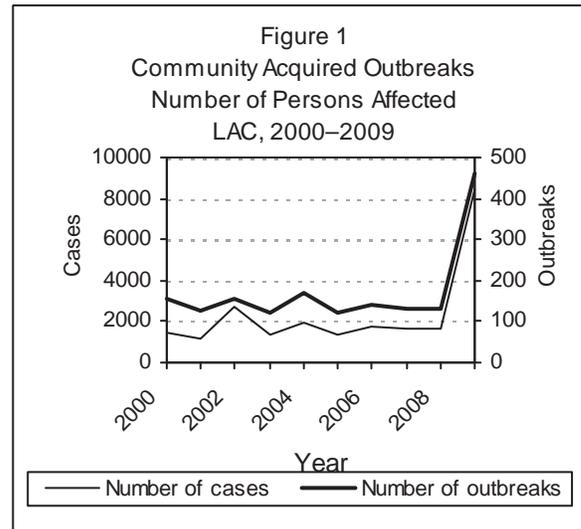
- In 2009, 459 community-acquired disease outbreaks accounted for 8410 cases of illness (Figure 1). This finding was 3.6 times as many outbreaks and 5 times as many associated cases as the previous year.
- The top three disease categories — respiratory, ectoparasites, and gastroenteritis (GE) - accounted for 93% of all closed confirmed outbreaks for 2009 (Figure 2). While ectoparasites and GE have historically been in the top three etiologies, 2009 was the year of the respiratory outbreak, accounting for 79% of all reported outbreaks.
- Schools (kindergarten and higher) and preschools were the most common setting of community-acquired outbreaks, with 69% and 20% of all outbreaks (Figure 3).
- The number of community outbreaks caused by respiratory infections dramatically increased in 2009. Incidence was influenced by increase circulation of H1N1 pandemic influenza in the younger population in addition to increased school outreach to increase reporting.

DATA

Disease outbreaks are defined as clusters of illness that occur in a similar time or place, or case numbers above baseline for a specified population or location. Depending on the nature of the outbreak, investigation responsibility is maintained by either Acute Communicable Disease Control Program (ACDC) or Community Health Services with ACDC providing consultation as needed. The outbreaks reported in this section do not include outbreaks associated with food (see Foodborne Illness Outbreaks section) or healthcare facilities (see Healthcare Associated Outbreaks sections).

Respiratory illness accounted for 79% of confirmed outbreaks in 2009. GE of various etiologies and ectoparasites were the second and third most common cause of outbreaks, comprising 7% and 6% of all outbreaks respectively (Figure 2, Table 1). The influx of respiratory outbreaks modified relative reporting levels of other causes; however the non-respiratory disease hierarchy was similar to past years.

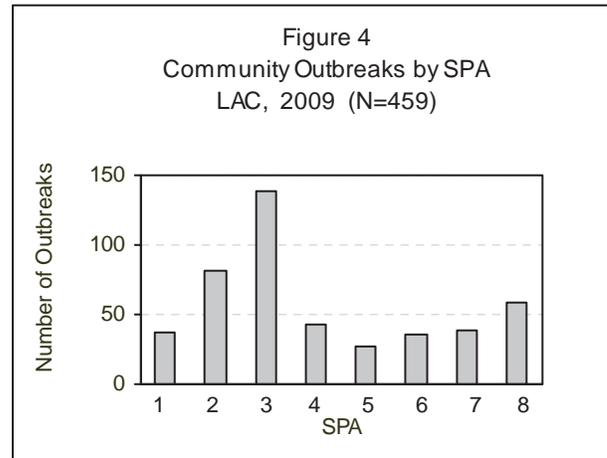
Influenza outbreaks had the highest incident-specific case average with a mean of 31 cases per outbreak. The single outbreak with the highest number of cases (120) was an unknown respiratory outbreak at an elementary school. Outbreaks caused by norovirus





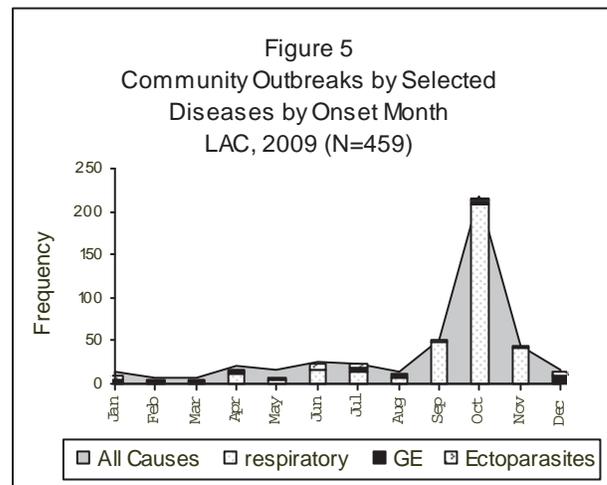
(n=4) or of undetermined GE etiology (n=25) had a mean of 24 and 18 cases per outbreak, respectively. Many of the undetermined GE outbreaks had similar characteristics to the confirmed norovirus outbreaks, but were not tested for confirmation. These figures highlight the continuing circulation of norovirus and reflect the ease that this agent can be transmitted from person-to-person in community settings, especially among the very young. GE outbreaks were most commonly reported in preschool/daycare settings (52%) (Table 1).

The predominance of outbreaks affecting children in school settings has been recognized over the last several years. In 2009 the most common outbreak setting for illness transmission was again schools (Figure 3), accounting for 69% of all outbreaks: elementary schools (256), middle schools (31), high schools (22), and university (6) settings. While the level of non-respiratory etiologies remained relatively constant, respiratory outbreaks in the school setting surged, especially in the elementary school. Location specific cases counts within the school setting did not appear as widespread as its potential – averaging 21 cases for the 294 school outbreaks. Group and retirement home settings were not as affected by respiratory infections based on only two respiratory outbreaks reported in 2009.



Outbreaks were reported from all eight SPAs (Figure 4). SPAs 3 and 2, the San Gabriel (138) and San Fernando (82) Valleys had the most outbreaks for 2009.

The chart of community-acquired outbreaks by onset month (Figure 5) also illustrates the impact of respiratory infections in 2009. Respiratory outbreaks did occur starting in April, albeit at reduced levels compared to the increases of September through November.



COMMENTS

The overall number of outbreaks and outbreak associated cases in 2009 was unlike anything in the past ten years. Public Health efforts in preparation for H1N1 pandemic influenza activity included the outreach to school setting administration as illness and transmission within this setting was anticipated. This modified active surveillance could have contributed to the increased frequency of school-based outbreaks reported compared to past years.

Community-acquired outbreaks result in an interaction among particular age groups, locations and specific diseases. A profile emerges where the very young and early adolescent acquire infection/infestation at school (89% in preschool, elementary, middle, or high school). Historically, varicella, pediculosis (head lice), and GE were most common in these age groups, but in 2009, respiratory outbreaks dominated. Not to be lost in this respiratory spike, the dramatic decrease in varicella outbreaks continued in 2009 with only six outbreaks being reported. (see summary of the Varicella Project in the ACDC Special Report). The second age group usually affected by outbreaks is in the older population, often associated with group home settings (26%). In this age category, GE and scabies are the most common causes (Table 2). Outbreak reports in this group dropped to 5% in 2009. Fortunately, only two respiratory outbreaks were reported in this group; one caused by influenza.



Table 1. Community-Acquired Outbreaks by Disease— LAC, 2009

Disease	No. of outbreaks	No. of cases	Cases per outbreak (average)	Cases per outbreak (range)
Varicella	6	45	8	6-9
Scarlet fever/strep throat	5	19	4	2-8
Scabies	14	86	6	2-31
Hand, foot & mouth disease	9	80	9	3-18
Pediculosis	15	127	8	2-28
GE illness - Norovirus	4	94	24	18-33
GE illness - Shigella	0	0	0	0
GE illness – Salmonella	2	12	6	3-9
GE illness - Unknown	25	460	18	7-60
Fifth disease	7	36	5	3-9
Conjunctivitis	2	12	6	3-9
Influenza	68	2075	31	2-185
Respiratory unk.	295	5294	18	3-131
Other*	7	70	10	2-28
Total	459	8410	18	2-185

* Includes: unk. rash (2), ringworm (2), and unk. febrile illness (2).

Table 2. Community-Acquired Outbreaks by Disease and Setting — LAC, 2009

Disease	Group Home ^a	School ^b	Preschool or Daycare	Other ^c	TOTAL
Varicella	0	6	0	0	6
Scarlet fever/strep throat	0	0	5	0	5
Scabies	10	0	4	0	14
Hand, foot & mouth disease	0	2	7	0	9
Pediculosis	1	4	10	0	15
GE illness - Norovirus	2	0	2	0	4
GE illness - Shigella	0	0	0	0	0
GE illness - Salmonella	0	0	2	0	2
GE illness - Unknown	7	4	12	2	25
Fifth disease (Parvovirus)	0	5	2	0	7
Conjunctivitis	0	0	2	0	2
Influenza	0	48	7	13	68
Respiratory Unk.	2	246	36	11	295
Other	1	1	4	1	7
Total	23	316	93	27	459

^a Includes centers for retirement, assisted living, and rehabilitation.

^b Includes elementary (257), middle (31), high schools (22), and university (6).

^c Includes juvenile detention (15) jail (1), and camps (5).



COMMUNITY-ACQUIRED DISEASE OUTBREAKS

ABSTRACT

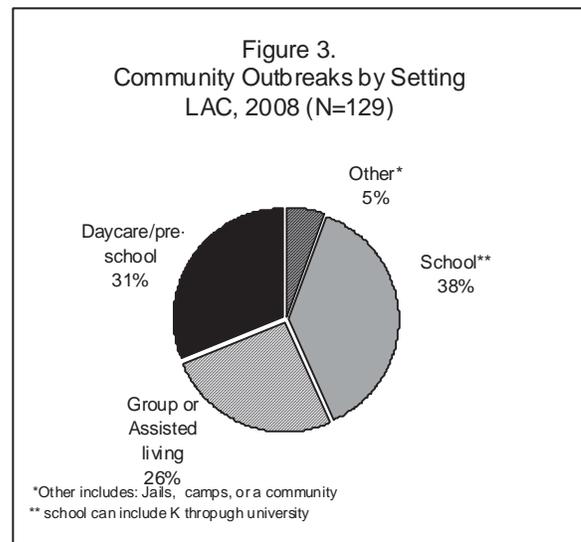
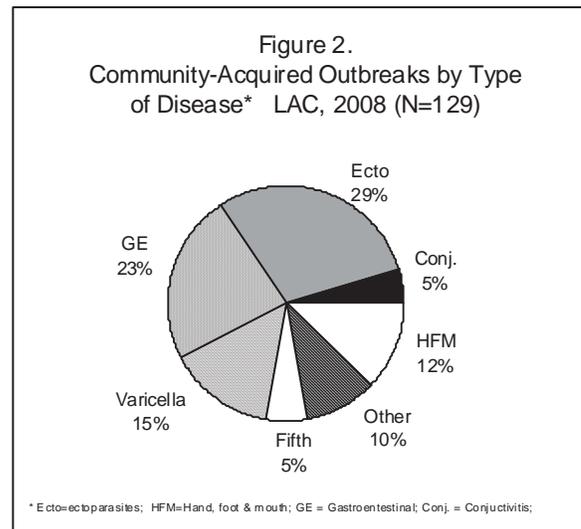
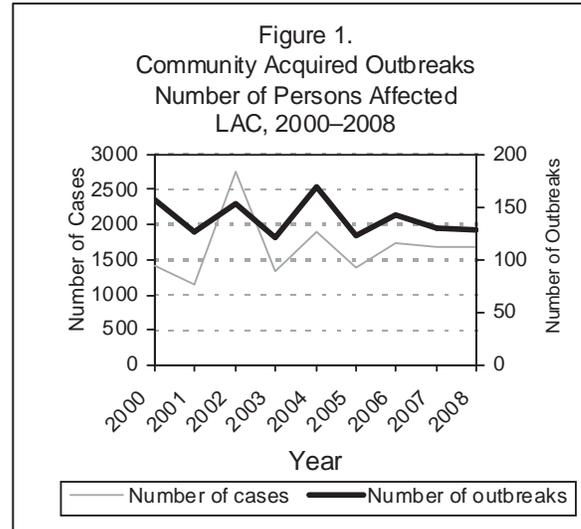
- In 2008, 129 community-acquired disease outbreaks accounted for 1,693 cases of illness (Figure 1). This finding was similar to 2007 results—130 outbreaks with 1690 individual cases.
- The top three disease categories: ectoparasites, gastroenteritis of various causes, and varicella accounted for 66% of all closed confirmed outbreaks for 2008 (Figure 2). In yearly findings from the previous three years, 2005-2007, these categories accounted for 75% of the total outbreaks confirmed.
- Schools (kindergarten and higher) and preschools were the most common setting of community-acquired outbreaks, with 38% and 31% of all outbreaks (Figure 3).
- The number of community outbreaks caused by varicella dramatically declined in 2008 to 19; previous five-year average was 46.

DATA

Disease outbreaks are defined as clusters of illness that occur in a similar time or place, or case numbers above baseline for a specified population or location. Depending on the nature of the outbreak, investigation responsibility is maintained by either Los Angeles County (LAC) Department of Public Health (DPH) Acute Communicable Disease Control (ACDC) or LAC DPH Community Health Services with ACDC providing consultation as needed. The outbreaks reported in this section do not include outbreaks associated with food (see Foodborne Outbreaks section) or healthcare facilities (see Healthcare Associated Outbreaks section).

Ectoparasites (scabies and pediculosis) accounted for 29% of all confirmed outbreaks in 2008. Gastroenteritis (GE) of various etiologies and varicella were the second and third most common cause of outbreaks, comprising 23% and 15% of all outbreaks respectively (Figure 2, Table 1). Of interest, included in the 'other' category is a community outbreak of wound botulism (type A) among IV drug abusers (see Botulism Special Studies Report section).

GE outbreaks specifically caused by norovirus infection had the highest incident-specific case average attributed to the ten confirmed norovirus outbreaks with a mean of 27 cases per outbreak. Outbreaks caused by an undetermined GE etiology had a mean of 15 cases per outbreak. Many of the undetermined GE outbreaks had similar characteristics





to the confirmed norovirus outbreaks, but were not tested for confirmation. These figures highlight the increased circulation of norovirus and reflect the ease this agent can be transmitted from person-to-person in community settings (Table 1). The single outbreak with the highest number of cases (120) was an unknown respiratory outbreak at an elementary school.

The most common outbreak settings (Figure 3) for illness transmission were schools—elementary schools (36), middle schools (3), and high schools (10) accounting for 38% of all outbreaks. High schools played a larger role for outbreak location site in 2008 going to ten outbreaks compared to only one the previous year. Of note in 70% of the high school outbreaks the etiology was varicella. The predominance of reported outbreaks affecting children in school settings can be seen over the last several years. Settings with young children in daycare or pre-school accounted for an additional 31%. Group and retirement home settings were the third most common site of community-acquired outbreaks reported in 2008, accounting for 26% of all outbreaks. The 2006 year also reported high impact in this setting (30%).

Outbreaks were reported from all eight Service Planning Areas (SPAs) (Figure 4). SPA 2, the San Fernando Valley, had the most outbreaks (38) for 2008.

The chart of community-acquired outbreaks by onset month (Figure 5) shows a bimodal distribution. Varicella outbreaks predominated the early months of the year. GE occurred throughout the year, but tended towards the cooler months with outbreaks focused in the winter, spring and fall. This cooler season predominance illustrates the importance of norovirus circulation during this reporting period.

COMMENTS

The overall number of outbreaks and outbreak associated cases in 2008 was similar to the prior year. A major finding for 2008 was the dramatic decrease in varicella cases and the first time since 1999 varicella was not the most common cause of community-acquired outbreaks in LAC (also see summary of the Varicella Project in the Special Studies Reports section). It is illustrative to note that in 2007, eight varicella outbreaks were identified in the Antelope Valley Health

District (SPA 1), where the LAC DPH Varicella Acute Surveillance Project is in place; there was only one varicella outbreak in spa one for 2008.

- Community-acquired outbreaks result in an interaction among particular age groups, location and specific diseases. A profile emerges where the very young and early adolescent acquire infection/infestation at school (69% in preschool, elementary, middle, or high school). Varicella, pediculosis (head lice), and gastroenteritis were most common in this young group. The second age group affected by outbreaks is in the older population associated with group-home settings (26%). In this age category, GE and scabies are the most common causes (Table 2). The increased ranking of the group and retirement home as a setting for outbreaks was fueled by the increased norovirus activity during 2007.

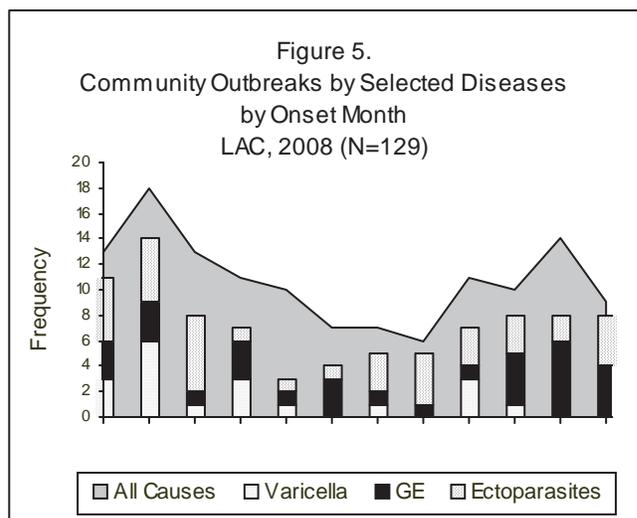
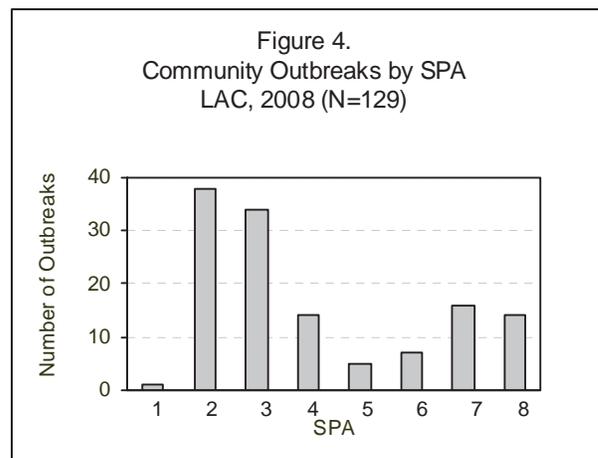




Table 1. Community-Acquired Outbreaks by Disease— LAC, 2008

Disease	No. of outbreaks	No. of cases	Cases per outbreak (average)	Cases per outbreak (range)
Varicella	19	189	10	4-24
Scarlet fever/strep throat	2	45	23	5-40
Scabies	16	49	3	2-7
Hand, foot & mouth disease	16	136	9	3-24
Pediculosis	22	192	9	2-39
GE illness - Norovirus	10	267	27	7-64
GE illness - Shigella	2	9	5	3-6
GE illness – Salmonella	2	10	5	5
GE illness - Rotavirus	1	25	25	25
GE illness - Unknown	15	321	21	6-55
Fifth disease	7	88	13	1-19
Conjunctivitis	6	61	10	5-24
Influenza	2	8	4	3-5
Other*	9	293	33	2-120
Total	129	1,693	13	2-120

* Includes: unknown respiratory, RSV, impetigo, unknown febrile illness.

Table 2. Community-Acquired Outbreaks by Disease and Setting — LAC, 2008

Disease	Group Home^a	School^b	Preschool or Daycare	Other^c	TOTAL
Varicella	0	18	0	1	19
Scarlet fever/strep throat	0	1	1	0	2
Scabies	12	2	0	2	16
Hand, foot & mouth disease	0	2	14	0	16
Pediculosis	1	12	8	1	22
GE illness - Norovirus	6	2	2	0	10
GE illness - Shigella	0	0	2	0	2
GE illness - Salmonella	0	0	1	1	2
GE illness - Rotavirus	1	0	0	0	1
GE illness - Unknown	8	2	5	0	15
Fifth disease (Parvovirus)	0	6	1	0	7
Conjunctivitis	2	0	4	0	6
Influenza	2	0	0	0	2
Other	1	4	2	2	9
Total	33	49	40	7	129

^a Includes centers for retirement, assisted living, rehabilitation, and shelter.

^b Includes elementary (36), middle (3), and high schools (10).

^c Includes jail, camp, community.



COMMUNITY-ACQUIRED DISEASE OUTBREAKS

ABSTRACT

- In 2007, 130 community-acquired disease outbreaks accounted for 1,690 cases of illness (Figure 1).
- Schools were the most common setting of community-acquired outbreaks (46%).
- The number of reported outbreaks (130) was a decreased from 2006 and below the previous 7-year average (142).

DATA

Disease outbreaks are defined as clusters of illness that occur in a similar time or place, or case numbers above baseline for a specified population or location. Depending on the nature of the outbreak, investigation responsibility is maintained by either ACDC or Community Health Services with ACDC providing consultation as needed. The outbreaks reported in this section do not include outbreaks associated with food (see Foodborne Outbreaks chapter) or facilities where medical care is provided (see Healthcare Associated Outbreaks chapter).

Varicella caused most community-acquired outbreaks in LAC (32%) gastroenteritis (GE) of various etiologies, followed by ectoparasites (scabies and pediculosis) were the second and third most common cause of outbreaks, comprising 25% and 18% of all outbreaks respectively (Figure 2, Table 1). Collectively accounting for 75% of all community-acquired outbreaks in 2007, the dominance of these three disease categories is similar to past years (75% in 2006 and 2005 and 72% in 2004).

GE outbreaks, specifically caused by norovirus, had the highest incident-specific case average attributed to the seven confirmed norovirus outbreaks (mean of 35 cases per outbreak), followed by 16 undetermined GE outbreaks (mean of 15 cases per outbreak). While not laboratory confirmed, the signs and symptoms of these undetermined GE outbreaks were consistent with a norovirus presumptive diagnosis. Important to note in 2007, due to a documented increase in county-wide norovirus activity, a reduction in collecting diagnostic viral specimens was instituted. Larger outbreaks might have been more likely to warrant additional laboratory testing. While the overall number of outbreaks for 2007 decreased from the previous year, the number of GE outbreaks (both norovirus confirmed and clinically suspect) went up in 2007. These figures highlight the increased circulation of norovirus and reflect the ease this agent can be transmitted from person-to-person in

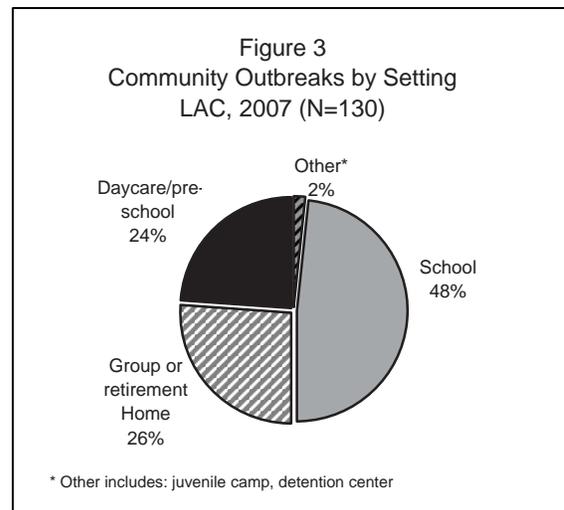
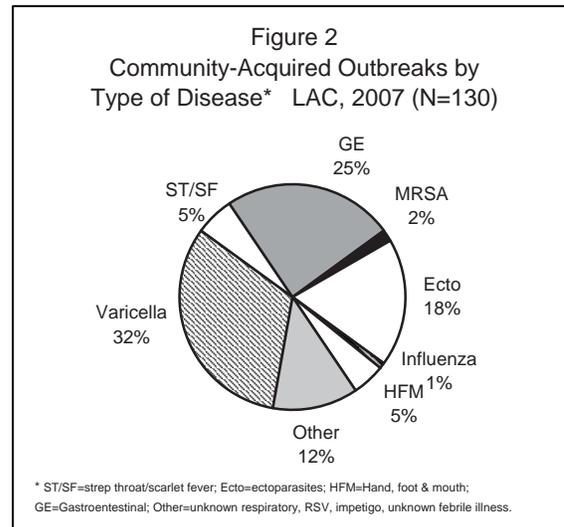
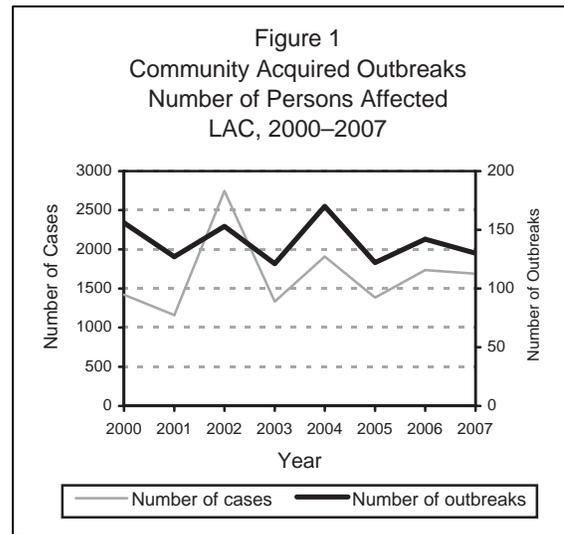




Table 1. Community-Acquired Outbreaks by Disease— LAC, 2007

Disease	No. of outbreaks	No. of cases	Cases per outbreak (average)	Cases per outbreak (range)
Varicella	42	515	12	5-48
Scarlet fever/strep throat	7	56	8	4-15
Scabies	14	82	6	2-16
Hand, foot & mouth disease	6	28	5	2-9
Pediculosis	10	116	12	3-26
GE illness - Norovirus	7	246	35	13-59
GE illness - Shigella	2	6	3	2-4
GE illness - Unknown	23	375	16	3-38
Fifth disease	5	46	9	5-16
Conjunctivitis	4	48	12	3-20
MRSA	2	13	7	6-7
Influenza B	1	4	4	4
Other*	7	115	22	4-45
Total	130	1,690	13	2-59

* Includes: unknown respiratory, RSV, impetigo, unknown febrile illness.

Table 2. Community-Acquired Outbreaks by Disease and Setting — LAC, 2007

Disease	Group Home ^a	School ^b	Preschool or Daycare	Other ^c	Total
Varicella	0	40	1	1	42
Scarlet fever/strep throat	0	4	3	0	7
Scabies	13	1	0	0	14
Hand, foot & mouth disease	0	1	5	0	6
Pediculosis	0	5	5	0	10
GE illness - Norovirus	3	1	3	0	7
GE illness - Shigella	1	0	1	0	2
GE illness - Unknown	15	2	6	0	23
Fifth disease (Parvovirus)	0	5	0	0	5
Conjunctivitis	0	1	3	0	4
MRSA	1	1	0	0	2
Influenza B	1	0	0	0	1
Other	0	2	4	1	7
Total	34	63	31	2	130

^a Includes centers for retirement, assisted living, rehabilitation, and shelter.

^b Includes elementary (51), middle (7), after-school (1), high schools (1) and university (2).

^c Includes juvenile camp, detention center.



community settings. (Table 1).

The most common outbreak settings (Figure 3) for illness transmission were schools [elementary schools (51), middle schools (8), after-school care (1), high schools (1), and universities (2)] accounting for 48% of all outbreaks. The predominance of reported outbreaks affecting children in school settings can be seen over the last several years. Settings with young children in daycare or pre-school accounted for an additional 20%. Group and retirement home settings were the second most common site of community-acquired outbreaks reported in 2007, accounting for 26% of all outbreaks. The 2006 year also reported high impact in this setting (30%). This recent two year figures more than doubles the previous five-year-average percentage of 13% ranging from 11% to 16%.

Outbreaks were reported from all eight SPAs (Figure 4). SPA 2, in the San Fernando Valley, had the most outbreaks (31) for 2007.

The chart of community-acquired outbreaks by onset month (Figure 5) shows a bimodal distribution. Varicella outbreaks predominated the early months of the year. GE occurred throughout the year, but tended towards the cooler months with outbreaks focused in the winter, spring and fall. This cooler season predominance illustrates the importance of norovirus circulation during this reporting period.

COMMENTS

There was a decrease in the number of outbreaks and outbreak associated cases in 2007 from the prior year; however, the number of outbreaks in 2007 was closer to the median of outbreaks for the last eight years. Varicella remained the most common cause of community-acquired outbreaks in LAC since 1999 (also see summary of the Varicella Project in the Special Reports section). In 2007, eight varicella outbreaks were identified in the Antelope Valley Health District (SPA 1), where the LACDHS Varicella Acute Surveillance Project is in place, which tied SPA 2 for most reported outbreaks of varicella. Community-acquired outbreaks result in an interaction among particular age groups, location and specific diseases. A profile emerges where the very young and early adolescent acquire infection/infestation at school (70% in pre-school, elementary, middle, or after-school). Varicella, pediculosis (head lice), and gastroenteritis were most common in this young group. The second age group affected by outbreaks is in the older population associated with group-home settings (26%). In this age category, GE and scabies are the most common causes (Table 2). The increased ranking of the group and retirement home as a setting for outbreaks was fueled by the increased norovirus activity during 2007.

