

Summary of Food Borne Illness Outbreaks in North America Associated with the Consumption of Raw Milk and Raw Milk Dairy Products (2000-2009)

26 Outbreaks resulted in an estimated 545 illnesses, 23+ hospitalizations and 7 infant deaths

	Date:	Pathogen	Implicated Source(s)	Outbreak Information	Reference
	June 2009	Summary US Illnesses for 2006: Although the dairy commodity accounted for only 3% of single commodity outbreak-related cases (16 outbreaks and 193 cases), 71% of dairy outbreak cases were attributed to unpasteurized (raw) milk (10 outbreaks and 137 cases). A wide range of bacterial pathogens were associated with unpasteurized milk outbreaks, including <i>Campylobacter</i> (six outbreaks), STEC O157 (two outbreaks), <i>Salmonella</i> (one outbreak), and <i>Listeria</i> (one outbreak), resulting in 11 hospitalizations and one death.			Surveillance for Foodborne Disease Outbreaks --- United States, 2006 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5822a1.htm
26	April 2009 Colorado	<i>Campylobacter</i>	Raw milk Cow share	11 illnesses	Colorado Department of Public Health and Environment Cow share operation ordered to temporarily stop distribution of raw milk products April 7, 2009 http://www.cdphe.state.co.us/release/2009/040709.html
25	March 2009 Washington	<i>Listeria</i>	Raw milk	4 illnesses in pregnant women 1 prenatal death & 1 stillbirth occurred	The Spokesman-Review <i>Investigators search for source of Listeria</i> March 7, 2009 http://www.theolympian.com/southsound/story/779784.html
24	February 2009 Pennsylvania	<i>Campylobacter</i>	Raw milk	6 illnesses	Pennsylvania Department of Health <i>Consumer Advisory: Pennsylvania Health and Agriculture departments warn consumers about raw milk sold in Lawrence County</i> February 20, 2009 http://news.prnewswire.com/DisplayReleaseContent.aspx?ACCT=104&STORY=/www/story/02-20-2009/0004976048&EDATE=
23	September 2008 Pennsylvania	<i>Campylobacter</i>	Raw milk	68 illnesses 25 lab confirmed illnesses Median age 29 yrs Range 5 to 61 yrs old 43 with symptoms (not lab confirmed)	Health and Agriculture departments warn consumers about raw milk sold in Montgomery County September 12, 2008 http://www.dsf.health.state.pa.us/health/cwp/view.asp?A=190&Q=251618 September 24, 2008 update http://www.dsf.health.state.pa.us/health/lib/health/epidemiology/Raw_Milk_Update.pdf
22	August 2008 California	<i>Campylobacter</i>	Raw milk	15 ill 1 intensive care	The Daily TriPLICATE <i>Illness halts raw milk program</i> August 16, 2008 http://www.triplicate.com/news/story.cfm?story_no=9851

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21	June / July 2008 Connecticut	<i>E. Coli</i> O157	Raw milk	14 illnesses Median age was 5 yrs (range: 1 – 81 yrs) 5 hospitalized (4 children) 4 developed HUS or thrombotic thrombocytopenic purpura	<i>Connecticut Epidemiologist</i> Vol. 29, No. 2 February 2009; Connecticut Department of Public Health http://www.ct.gov/dph/lib/dph/Vol29No2_FNL.pdf
20	May/June 2008 California	<i>Campylobacter jejuni</i>	Raw milk Cow-share	15 illnesses (3 confirmed, 12 suspected) 1 developed Guillain-Barre syndrome	ProMED-mail. Campylobacteriosis, unpasteurized milk – USA (California). ProMED-mail 2008; 17 Aug: 20080817.2557, < http://www.promedmail.org >, Accessed 13 Mar 2009. http://www.promedmail.org/pls/otn/f?p=2400:1202:3431314909208335::NO::F2400_P1202_CHECK_DISPLAY,F2400_P1202_PUB_MAIL_ID:X,73579
19	Nov./Dec 2007 California	<i>Campylobacter jejuni</i>	Raw milk and colostrum – commercially available	11 illnesses (8 confirmed; 3 suspect)	State of California – Health and Human Services Agency, California Department of Public Health <i>CA EPI 08-03: Cluster of Campylobacter infections possibly associated with raw dairy products</i> http://www.marlerblog.com/Cluster%20of%20Campylobacter%20infections.pdf
18	Oct./Nov. 2007 Kansas	<i>Campylobacter jejuni</i>	Small local community celebration; Unpasteurized fresh cheese;	68 illnesses; Median age was 25 (range: 1 – 75 yrs) 2 hospitalized	MMWR January 2, 2009 / 57(51 & 52); 1377-1379 http://www.cdc.gov/mmwr/PDF/wk/mm5751.pdf
17	Aug – Dec. 2007 Kansas	<i>Campylobacter jejuni</i>	Raw milk from dairy	25 illnesses	Kansas Department of Health & Environment http://www.kdheks.gov/epi/download/BU_RN_Campy_Nov07_final_report.pdf
16	March 2007 Utah	<i>Campylobacter jejuni</i>	Raw milk	15 illnesses; 1 hospitalized	ProMED-mail. Campylobacteriosis, unpasteurized milk – USA (Utah). ProMED-mail 2007; 22 Aug: 20070322.1004, < http://www.promedmail.org > , Accessed 13 Mar 2009.
15	March 2007 Ontario, Canada	<i>Yersinia</i>	Suspect raw milk from family farm	1 illness (2 yr old child)	Grey Bruce Health Unit Public Release, March 16, 2007 http://www.publichealthgreybruce.on.ca/home/NewsEvents/2007/Mar/2007Mar16_Yersinia-Infection.htm
14	March 2007 Ontario	<i>Listeria monocytogenes</i>	Suspect raw milk cheese	1 Illness (newborn); suspect maternal transfer to newborn	Grey Bruce Health Unit Public Release, March 14, 2007 http://www.publichealthgreybruce.on.ca/home/NewsEvents/2007/Mar/2006Mar14_Infant-Listeriosis.htm

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13	Feb - July 2007 Pennsylvania	<i>Salmonella typhimurium</i>	Licensed raw milk dairy Raw milk & raw milk queso fresco cheese	29 illnesses (3 clusters); Median age was 6 yrs (range: 5 months – 76 yrs);	MMWR Weekly November 9, 2007 / 56(44);1161-1164 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5644a3.htm
12	Sept. 2006 California	<i>E. Coli O157:H7</i>	Licensed raw milk producer; Raw milk and/or colostrum	6 illnesses (children); Median age was 8 (range: 6 – 18 yrs); 3 hospitalized	MMWR Weekly June 13, 2008 / 57(23);625-628 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5723a2.htm
11	Sept. 2006 Washington	<i>E. Coli O157:H7</i>	Licensed raw milk producer Raw milk	2 illnesses (children) 1 hospitalized	Washington State Department of Health – News Release http://www.doh.wa.gov/Publicat/2006_news/06-154.htm
10	May/June 2006 Wisconsin	<i>Campylobacter jejuni</i>	Illegal production / distribution; (Note: unpasteurized dairy products not permitted in Wisconsin); Unpasteurized cheese curds	>40 illnesses;	State of Wisconsin Department of Health and Family Services – News Release http://dhs.wisconsin.gov/news/PressReleases/2006/062206cheesecurdoutbreak.pdf
9	Feb. 2006 North Carolina	<i>Listeria monocytogenes</i>	Unpasteurized Mexican soft cheese	1 premature baby; infected by maternal transfer during delivery	Mecklenburg County Health Department http://www.charmeck.org/Departments/Health+Department/Top+News/News+Archive/2006/Listeria++02-22-2006.htm
8	Jan. 2006 Colorado	<i>Campylobacter jejuni</i>	Raw milk Sale of raw milk is illegal in CO, but Cow-Share programs are permitted.	5 illnesses (range: 7 - 44 yrs)	Colorado Department of Public Health and Environment (CDPHE) http://www.apha.org/membersgroups/newsletters/sectionnewsletters/epidem/winter06/2454.htm
7	Nov. / Dec. 2005 Washington	<i>E. Coli O157:H7</i>	(Dee Creek Farm); Unlicensed farm; Cow Share Program	18 illnesses; Washington & Oregon; Median age was 9 yrs (range: 1 - 47 yrs) <u>15 children</u> ; 5 hospitalizations; 4 developed HUS.	MMWR Weekly March 2, 2007 / 56(08);165-167 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5608a3.htm

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6	2003 Utah	<i>Campylobacter jejuni</i>	Raw milk served at high school athletic dinner	13 illnesses (range: 11 – 50 yrs)	Peterson, MC. 2003. J Environ Health . May 2003, 65(9): 20-21.
5	Nov. 2002 – Feb. 2003 Multistate – Illinois, Indiana, Ohio, and Tennessee	<i>Salmonella typhimurium</i>	At the time, this was the only dairy in Ohio legally permitted to distribute raw milk and raw milk products; At present, no raw milk dairies are permitted in Ohio Raw milk and raw milk products served at dairy and on farm restaurant	62 illnesses; Median age was 18 yrs (range: 1 – 70 yrs)	MMRW Weekly July 4, 2009 / 52(26); 613-615 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5226a3.htm
4	Oct. 2002 – Feb. 2003 Alberta, Canada	<i>E. Coli O157:H7</i>	Aged raw milk gouda cheese	23 illnesses; (range: 22 months – 77 yrs) 2 developed HUS	Honish, L., <i>et al.</i> 2005. Can J Public Health . 2005 May-Jun; 96(3): 182-4 http://journal.cpha.ca/index.php/cjph/article/view/610/610
3	Nov./ Dec. 2001 Wisconsin	<i>Campylobacter jejuni</i>	Cow Share Program; Raw milk	75 illnesses; Median age was 30 yrs (range: 2 – 63 yrs)	MMRW Weekly June 28, 2002 / 51(25); 548-549 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5125a2.htm
2	Aug. 2001 Vancouver Island, British Columbia	<i>E. Coli. O157:H7</i>	Cooperative farm; Raw goat's milk	5 illnesses (children); 2 hospitalizations for HUS;	CCDR Vol. 28-01 1 January 2002 http://www.phacaspc.gc.ca/publicat/ccdrmtc/02vol28/dr2801eb.html
1	Oct. 2000 – Jan. 2001 North Carolina	<i>Listeria monocytogenes</i>	Unpasteurized Mexican soft cheese, raw milk	12 illnesses; Median age was 21 yrs (range: 18 – 38 yrs); 10 pregnant women (5 stillbirths; 3 premature deliveries; 2 infected newborns)	MMRW Weekly July 6, 2001 / 50(26); 560-562 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5026a3.htm

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Other sources or links that discuss outbreaks or recalls associated with raw milk / raw milk products:

Kansas State University: <http://www.foodsafety.ksu.edu/articles/384/RawMilkOutbreakTable.pdf>

Cornell University: <http://www.milkfacts.info/Milk%20Microbiology/Disease%20Outbreaks.htm>

<http://www.doh.state.fl.us/environment/medicine/foodsurveillance/rawmilkrisk.pdf>