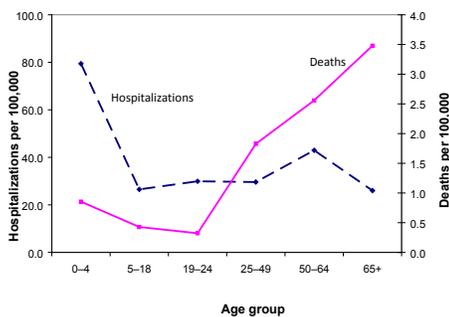


OREGON PUBLIC HEALTH DIVISION • DEPARTMENT OF HUMAN SERVICES

THAT WAS THE YEAR THAT WAS: COMMUNICABLE DISEASE SUMMARY 2009

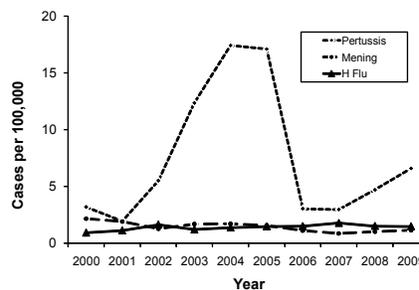
The arrival of and response to pandemic H1N1 influenza highlighted the end of another decade of disease reporting in Oregon. Previously reportable in Oregon but stricken from the list in August 1981, influenza-related hospitalizations and deaths again became reportable September 1, 2009 — though only temporarily, through August 2010. A warm “Thank You” to the physicians, laboratorians, and infection preventionists who responded to the call for data during the pandemic.

Figure 1. Incidence of influenza hospitalization and death Oregon, Sept 1, 2009–Dec 31, 2009



From September through December 2009, Oregon logged 1,301 lab-confirmed influenza-related hospitalizations and 66 deaths (34.3 and 1.7 per 100,000 persons, respectively). The highest hospitalization rate was among children ≤4 years old (79.4/100,000), while the highest death rate was among persons ≥65 years of age (3.5/100,000 persons) (figure 1). Rates of hospitalization were substantially higher among individuals with the typical high-risk medical conditions, including pregnant women, children with neuromuscular disease or seizure disorder, and adults with chronic lung disease or diabetes. All four pediatric deaths occurred among children with neurodevelopmental disorders. Among adults who died, lung disease (45%) was most commonly reported, followed by cardiac

Figure 2. Pertussis, meningococcal disease and Haemophilus influenzae incidence, Oregon 2000–2009

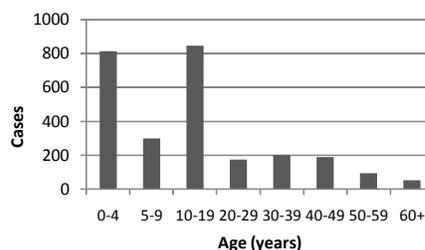


disease (42%) and metabolic disorders (42%). No pregnant women died in Oregon in 2009 from confirmed pandemic influenza; 51 (7%) of 704 hospitalized females were pregnant.

AN UNWHIPPABLE WHOOP?

What happened with other vaccine-preventable respiratory illnesses in 2009? Although down from a major incidence peak in 2004 and 2005, Oregonians have been whooping it up again with rates of pertussis above the national rate for 2008 and 2009 (figure 2). Historically, pertussis incidence has peaked every three to five years. The greatest increase in reported disease in recent years has been in adolescents and adults, and they may be responsible for most transmission of *Bordetella pertussis*. Children less than four years of age and teens still account for most reported cases (figure 3). Among those reported, infants have the highest risk of pertussis-related complications, including death: since 2000, 205 (46%) of the 441 infants diagnosed with pertussis in Oregon have been hospitalized,

Figure 3. Pertussis cases by age group, Oregon, 2005–2009



and four have died. When vaccinating adult or adolescent patients against influenza, consider asking whether they’ve ever had Tdap. Health care workers should also get the shot.

VACCINATION VICTORIES

Haemophilus influenzae infection, meningococcal disease (figure 2), hepatitis A and hepatitis B remain at or near record lows!

TENACIOUS TAPEWORMS

What did swine “really” bring to Oregonians in 2009? Tapeworms and their larvae. One hundred verified cases of neurocysticercosis (NCC) were reported in Oregon during 2009. Though this might appear to be an epidemic, we’re not yet putting albendazole and dexamethasone into the water; these data largely represent surveillance artifact. The Public Health Division undertook active case finding in 2009 and uncovered cases prevalent as well as incident.* Twenty-three incident cases were logged in 2009, an underestimate that largely excludes non-hospitalized cases. NCC is an important cause of epilepsy among immigrants from the developing world, acquired by ingestion of *Taenia solium* eggs that are passed in the feces of intestinal tapeworm carriers. Oregon Hispanics have suffered the most, with an estimated incidence of 4.8 per 100,000. Presentations are diverse and include seizures, headaches, stroke syndromes, encephalitis, psychiatric disturbances and hydrocephaly. Because NCC is a cause of chronic headaches among Hispanics, a lower threshold for neuroimaging may be prudent in this population. Report any case to the local public health department, whose diligent staff can screen for tapeworm infections

* i.e., old as well as new

Case counts for selected communicable diseases, by county of residence, Oregon, 2009

	Living with AIDS/HIV	Campylobacteriosis	Chlamydia	Cryptosporidiosis	E. coli O157 infection	Giardiasis	Gonorrhea	H. influenzae infection	Hepatitis A	Hepatitis B (acute)	Hepatitis B (chronic)	Hepatitis C (acute)	Legionellosis	Listeriosis	Lyme disease	Malaria	Meningococcal disease	Pertussis	Rabies, animal	Salmonellosis	Shigellosis	Early Syphilis	Taeniasis	Tuberculosis	West Nile virus infection	TOTAL
Baker	3	3	21	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	0	34
Benton	38	21	202	2	3	8	17	2	1	1	6	0	0	0	0	0	0	12	0	11	3	1	0	1	0	329
Clackamas	290	54	788	31	16	26	62	2	0	4	47	3	6	3	0	1	4	36	0	41	2	8	3	5	0	1,432
Clatsop	24	3	95	3	0	0	1	0	0	1	3	2	0	1	0	0	1	1	0	1	1	0	2	1	0	140
Columbia	23	4	137	8	0	4	2	0	0	0	2	0	0	0	0	0	0	1	0	2	0	0	0	1	0	184
Coos	37	14	130	1	1	20	12	1	0	0	3	0	0	0	1	0	0	11	0	7	0	0	0	1	0	239
Crook	6	7	59	0	0	3	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	81
Curry	9	7	12	2	0	2	0	0	1	0	2	0	1	0	2	0	0	0	0	4	0	0	0	1	0	43
Deschutes	76	30	387	4	3	18	6	1	2	4	6	0	0	0	1	1	3	3	0	11	4	2	0	2	0	564
Douglas	68	12	186	8	7	10	4	1	0	2	7	1	1	0	2	0	2	21	1	8	0	0	0	3	0	344
Gilliam	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grant	4	2	7	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	15
Harney	1	5	5	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	26
Hood River	16	2	45	2	0	2	3	0	0	0	2	0	0	0	1	0	0	0	0	0	4	0	0	2	0	79
Jackson	143	38	493	28	3	22	36	2	2	3	9	2	1	0	6	0	2	18	4	31	1	0	4	1	0	849
Jefferson	12	10	79	0	0	2	1	2	1	0	1	1	0	0	0	0	0	0	0	2	2	1	0	0	0	114
Josephine	54	5	165	4	0	7	8	4	1	0	4	0	0	0	2	1	1	9	3	4	0	0	0	2	0	274
Klamath	22	12	119	0	1	6	2	0	1	1	2	4	0	0	2	0	1	1	0	6	0	0	1	0	0	181
Lake	2	4	4	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	15
Lane	277	75	1268	16	17	40	137	10	2	4	24	6	1	1	5	1	6	26	0	30	4	5	1	1	0	1,957
Lincoln	36	6	78	1	0	4	12	3	0	0	5	0	0	2	0	0	0	0	0	5	0	0	0	1	0	153
Linn	58	36	316	1	1	8	29	0	0	0	10	0	1	0	0	0	0	12	1	16	2	0	0	1	0	492
Malheur	17	4	80	0	1	3	3	1	0	1	3	0	0	0	0	0	0	0	0	2	0	1	0	0	10	126
Marion	346	52	1,277	11	10	27	106	4	1	4	29	1	1	2	0	0	1	15	0	43	9	4	13	13	0	1,969
Morrow	6	5	18	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	1	35
Multnomah	2,806	168	3442	40	4	127	538	14	4	14	201	2	4	8	9	5	8	49	0	101	13	52	10	30	0	7,649
Polk	33	10	183	0	3	12	23	1	0	0	3	1	0	0	0	0	0	2	0	6	0	0	0	0	0	277
Sherman	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Tillamook	13	4	40	3	0	3	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	67
Umatilla	40	9	213	0	1	4	9	1	0	0	5	2	0	0	1	0	0	9	0	9	0	1	2	2	1	309
Union	10	4	60	1	0	3	0	0	0	0	2	0	0	0	1	0	0	4	0	3	1	0	0	0	0	89
Wallowa	2	1	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Wasco	13	4	68	0	1	2	1	1	0	0	4	1	0	1	0	0	1	2	0	4	0	0	0	0	0	103
Washington	475	99	1,266	19	8	34	88	5	5	11	95	0	3	1	1	3	4	15	0	69	10	10	11	19	0	2,251
Wheeler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yamhill	45	15	243	2	3	17	10	1	0	0	3	0	0	0	3	0	4	4	0	13	0	0	2	1	0	366
Total	5,005	725	11,493	201	84	420	1,113	56	21	50	483	26	19	19	39	12	39	251	11	436	56	86	51	89	12	

Selected cases of notifiable diseases by year,* Oregon, 2000–2009

Disease / Cases	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Campylobacteriosis	568	598	575	597	656	647	652	729	696	725
Chlamydiosis†	7,110	7,504	7,200	7,500	8,960	9,019	9,587	9,867	10,861	11,497
Cryptosporidiosis	22	60	40	36	32	69	82	163	64	201
<i>E. coli</i> O157 (STEC)	136	97	210	105	70	158	107	85	69	84
Giardiasis	673	535	431	406	443	417	425	462	448	421
Gonorrhoea	1,039	1,145	929	981	1,302	1,562	1,460	1,238	1,258	1,113
<i>H. influenzae</i>	30	38	57	42	49	53	55	66	57	56
Hepatitis A	164	109	61	62	65	47	47	34	26	21
Acute hepatitis B	123	166	126	119	112	97	86	61	45	50
Acute hepatitis C	18	15	13	16	17	19	28	22	33	26
Legionellosis	1	4	9	17	8	15	22	14	18	19
Listeriosis	6	12	9	5	7	11	13	8	6	19
Lyme disease	12	14	13	16	25	24	19	27	38	39
Malaria	41	14	14	10	19	13	15	16	4	12
Measles	0	3	0	3	0	2	2	2	1	0
Meningococcal disease	71	65	44	60	61	56	41	32	38	39
Pertussis	105	66	193	438	625	622	112	129	178	251
Rabies, animal	7	4	14	7	6	8	25	12	13	11
Salmonellosis	300	288	337	427	416	417	428	336	429	436
Shigellosis	159	115	106	211	87	127	121	87	94	56
Early Syphilis†	31	22	47	74	58	57	48	26	45	86
Tuberculosis†	119	123	111	106	106	103	81	94	75	89
Vibriosis	7	6	9	5	11	6	19	7	10	19
West Nile virus					3	8	73	27	16	12
Yersiniosis	10	12	16	6	14	17	16	18	17	19

Data as of 04/30/2010 *Case counts by year of illness onset unless otherwise indicated.

† Case counts by year of report. Blank cells = not reportable

Figure 4. Vector-borne disease reports, Oregon, 2009

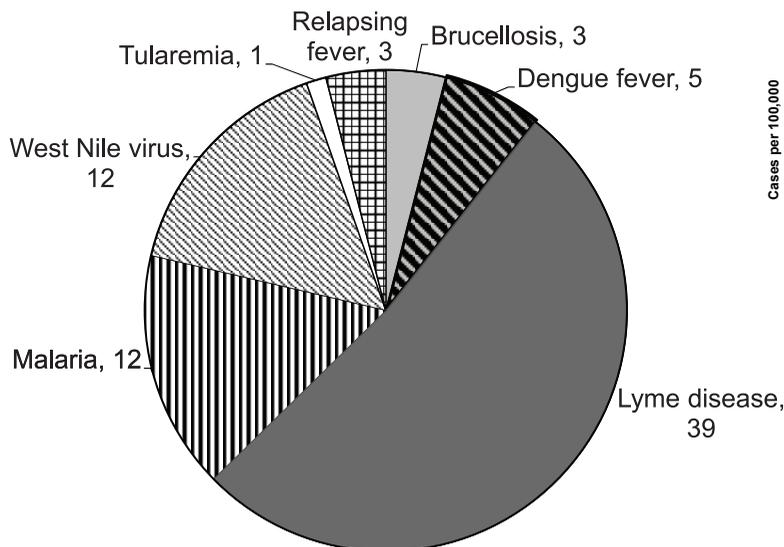
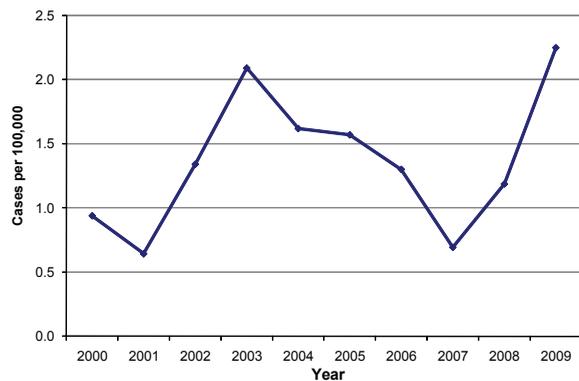


Figure 5. Early syphilis, Oregon, 2000–2009





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and additional cases in the household. In 2009, household investigations identified two previously undiagnosed symptomatic cases. Although most cases likely acquire infection in their country of birth, transmission can occur domestically. One Oregon case was U.S.-born with no history of international travel.

VEIXING VECTORS

Ticks continue to transmit illness in Oregon, Lyme disease taking first place with a record 39 cases reported in 2009 (figure 4, *verso*). Though these are few in comparison to the counts in the Northeast, *Borrelia burgdorferi* is here to stay.

West Nile disease continues to dwindle since its peak of 73 cases in 2006. During 2009, only 12 human cases were reported, all from eastern Oregon counties, though virus-laden mosquitoes and birds have been confirmed all the way to the Oregon coast.

A handful of vector-borne illnesses were reported last year, including malaria (all imported), dengue fever (also imported), brucellosis and relapsing fever.

SYPHILITIC SENSATIONS

In 2009, 86 cases of early syphilis (primary, secondary and latent infections of less than one year's duration) were reported in Oregon — up from 45 cases in 2008 (figure 5, *verso*). Eighty-three of the 86 were male, and of these, 74 (86% of the total) were men who had sex with men (MSM). Nearly half of the 74 MSM cases knew they were HIV-positive. Though most

cases were in counties of the Willamette Valley, a small cluster of cases was from central Oregon. Annual testing of sexually active MSM for syphilis and other sexually transmitted infections is recommended. Sex partner notification and referral services are important for prevention; 30% of the early syphilis cases reported in 2009 were sex partners of other cases brought to exam by health department follow-up.

IMPACTED ENTERICS

Reportable enteric illnesses continue to frustrate food-safety officials; the incidences of the more common ones have changed little in Oregon over the past several years (figure 6). Campylobacteriosis seems to have been slowly climbing since its nadir in 2002. Shigellosis (56 cases) hit an historic low. Oregon contributed cases to noteworthy national outbreaks related to cookie dough, black pepper, and shredded lettuce; we'll review 2009 outbreaks in a future issue.

Conspicuously among the rates of reportable diarrheal illnesses, cryptosporidiosis incidence tripled

Figure 6. Incidence of common bacterial enteric pathogens, Oregon, 2000–2009

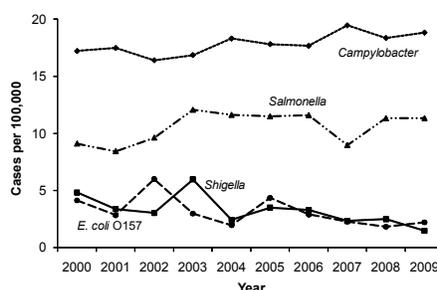
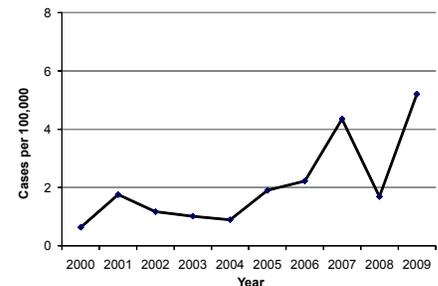


Figure 7. Cryptosporidiosis incidence, Oregon, 2000–2009



in 2009 (from 1.7 in 2008 to 5.2 per 100,000) (figure 7). Fecal-oral transmission of the coccidian protozoan *Cryptosporidium parvum* or *C. hominis*[†] generally results in acute, profuse, watery diarrhea, though asymptomatic infections are common. Fecal oocysts can survive on environmental surfaces for extended periods of time, and *Cryptosporidium* spp. are relatively resistant to chlorine; the increase noted in Oregon in 2007 was the result of an outbreak at a chlorinated swimming pool. No large outbreaks occurred in 2009, although there was a cluster of cases associated with transmission in a health care setting. Those with immunocompromising conditions have a hard time overcoming the infection. Stool specimens are not routinely screened for crypto, so if it is in your differential diagnosis, ask your lab to test for it specifically.

[†]Don't confuse this "crypto" with the fungus *Cryptococcus gattii* of recent notoriety.