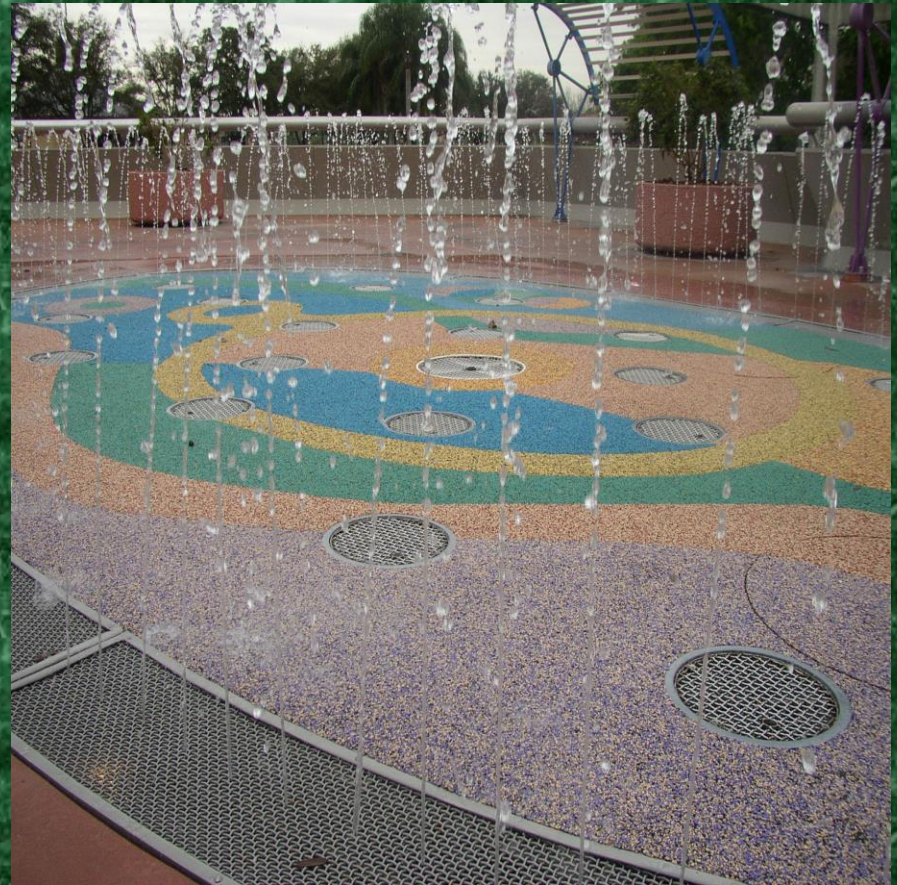


Public Pools



Regulated Facilities / Venues

- Swimming Pools and Spas (hotels, condos, apartments, schools, city)
- Interactive Water Features: Pop Jet Sprays (municipal and private)
- Artificial Impoundments (Fresh and Saltwater)
- Water Recreation Attractions (Waterparks)





Adult Supervision + Good Construction & Operation Prevents or Avoids:

- Entrapment Injury
- Infectious Disease Illness
 - Bacteria
 - Virus, Protozoa
- Skin Ailments
- Slips, Trips & Fall Injury
- Drowning



Drowning Deaths in Florida Swimming Pools, By Age Group and Year, 2000-2004

Age Group	2000	2001	2002	2003	2004	00-04 Total	00-04 %
<1	4	0	5	3	4	16	2.6%
1-4	51	49	47	55	36	238	38.3%
5-9	3	6	9	4	8	30	4.8%
10-14	3	3	6	4	2	18	2.9%
15-24	4	11	5	6	6	32	5.2%
25-34	7	7	4	3	3	24	3.9%
35-44	11	7	6	10	4	38	6.1%
45-54	5	11	9	5	9	39	6.3%
55-64	8	10	6	3	8	35	5.6%
65-74	8	10	16	10	11	55	8.9%
75-84	7	17	7	9	14	54	8.7%
85+	7	12	12	6	5	42	6.8%
Total	118	143	132	118	110	621	100%

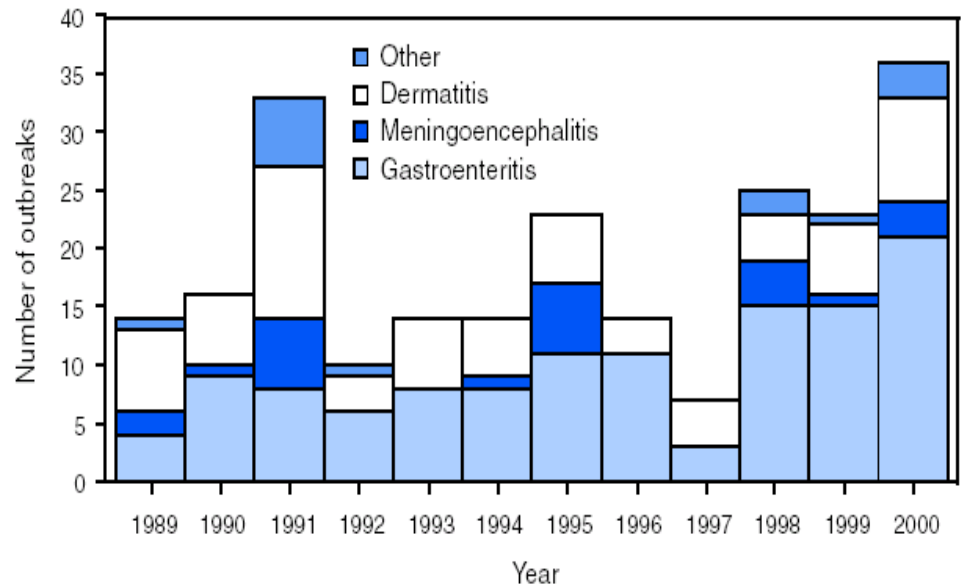
Data Source: Death certificate database, Office of Vital Statistics, Florida Department of Health.

Prepared By: Office of Injury Prevention, Florida Department of Health,
12/19/05 by Michael Lo, MSPH, Injury Epidemiologist

Pathogens in water

- ✓ If waste pathogens are present in high concentrations in recreational waters and are ingested while swimming or enter the skin through a cut or sore, they may cause gastrointestinal illnesses, infections or rashes.

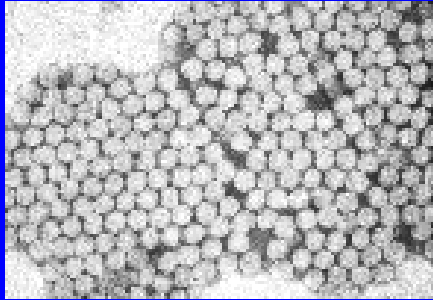
FIGURE 7. Number of waterborne-disease outbreaks associated with recreational water, by year and illness — United States, 1989–2000 (n = 229)*



CDC. "Surveillance for Waterborne-Disease Outbreaks — United States, 1999-2000." MMWR 2002;51(SS-8).

<http://www.cdc.gov/mmwr/PDF/ss/ss5108.pdf>

Pathogens



Hepatitis A - 30nm



Cryptosporidium-3-6 μ m

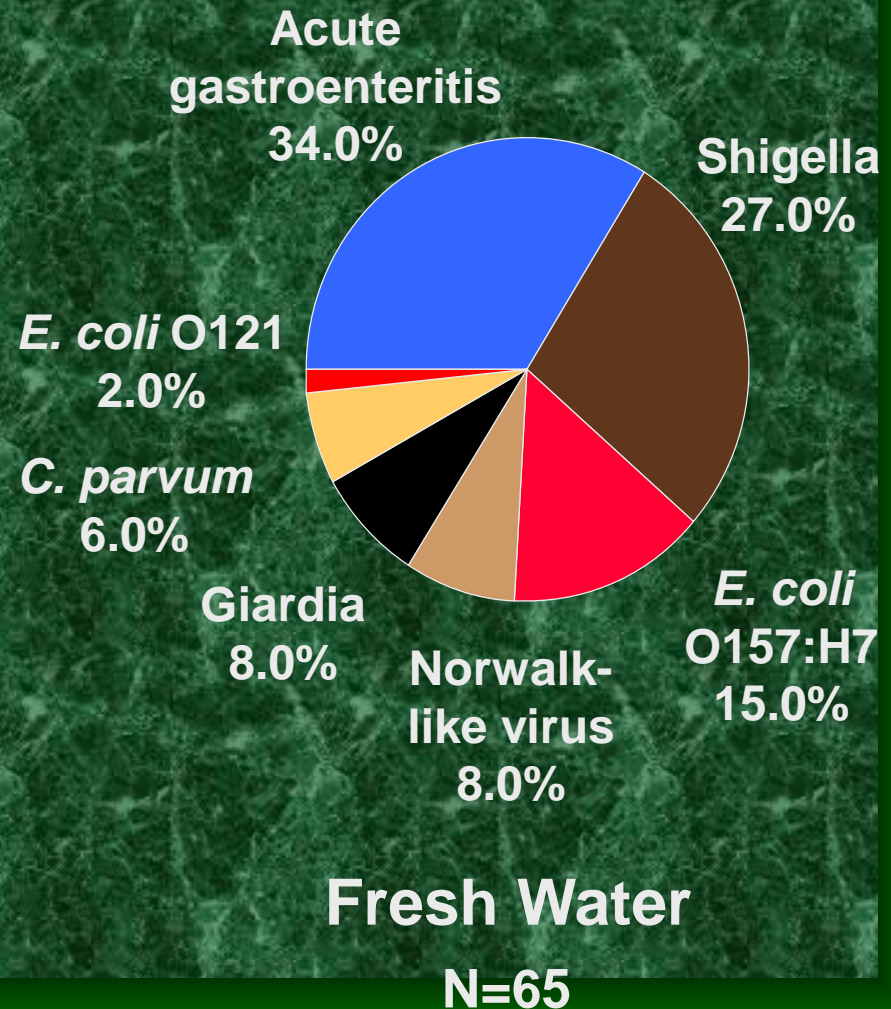
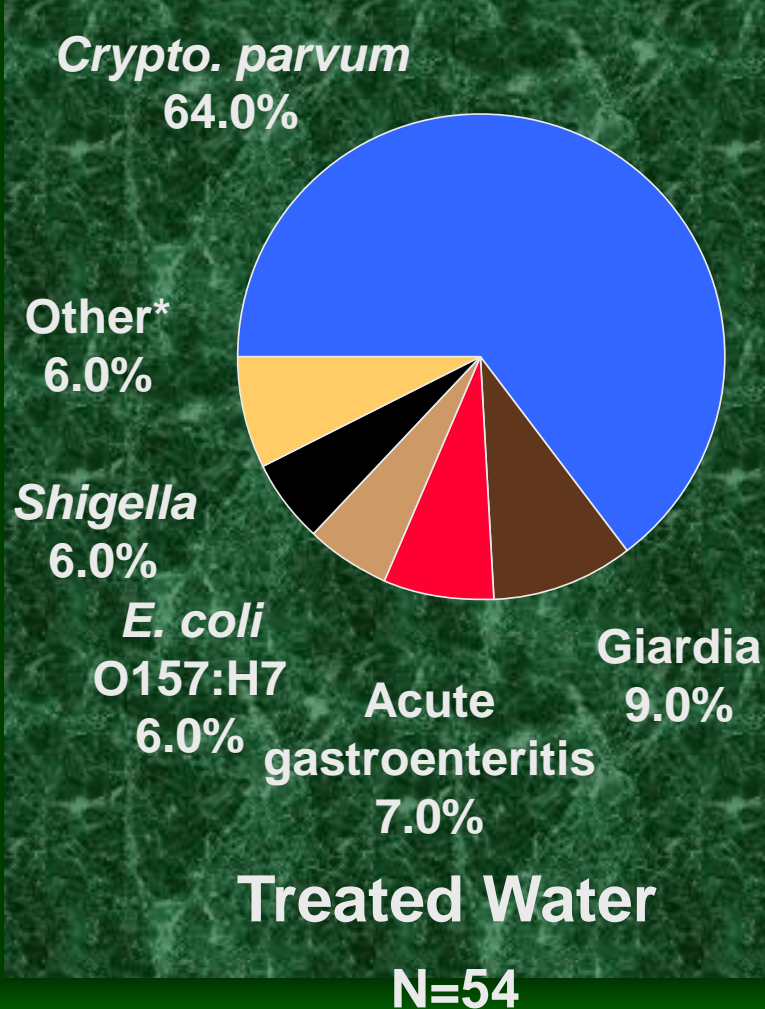


E. coli - 1x4 μ m



Giardia - 6-12 μ m

Etiologic Agents of Recreational Water Outbreaks Causing Gastrointestinal Illness, United States, 1989-2000



• **Crypto Basics**

- **Infectious Dose:**
- **<10- 30 oocysts**
- **Single bowel movement (4 oz. sample)**
- **=1 Billion oocysts**
- **1,000,000,000 oocysts per 10,000 gal. reservoir**
- **=100,000 oocysts per gallon of water**

Environmental Investigation of Splash Park

September 8, 2006



Environmental Results

- Major violation: concentration of chlorine <0.5 ppm
- Other observations
 - Non-functioning pH/ORP sensor unit
 - Paper cartridge filter (effective to 15 µm)
 - Not draining properly
 - No maintenance log
 - Bathrooms not clean
 - Algae build-up



Total Splash Park Cases

	Giardiasis Cases	Cryptosporidiosis Cases	Co-infection Cases	Total Cases
Primary Cases	38	9	2	55
Confirmed	35	7	2	44
Probable	3	2	0	5
Suspect	N/A	N/A	N/A	6
Secondary Cases	5	2	1	8

E. coli O157:H7 in a water park in Georgia, 1998

- 26 children laboratory confirmed with E. coli O157:H7
 - 7 HUS
 - 1 death
- Common exposure: water park, June 11, 12, 17, 18
- Possible contamination:
 - four fecal accidents and/or
 - two fecal accidents with high concentrations of bacteria on June 11 and 17 with residual contamination on June 12 and 18



Immediate Pool Closure

- Main Drain grate missing, damaged or loose
- Main Drain is not visible, water clarity poor
- Chlorine/Bromine too low or too high
- pH too low or too high (7.2-7.8 is OK)
- Filters or disinfection system inoperable
- Any other conditions which endangers the health, safety, or welfare of patrons