



Pseudomonas aeruginosa Infections Associated with Transrectal Ultrasound-Guided Prostate Biopsies - Georgia, 2005

The following report is reprinted from the Morbidity and Mortality Weekly Report (MMWR) (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5528a3.htm>) for your convenience. This report describes problems with infection control in one outpatient surgery setting. Clinicians who perform outpatient surgery should ensure that their infection control practices are consistent with guidelines for hospitals and with equipment manufacturing recommendations.

Transrectal ultrasound (TRUS)-guided prostate biopsies are among the most common outpatient diagnostic procedures performed in urology clinics, with an estimated 624,000 performed annually in the United States (CDC, unpublished data, 2006). The procedures generally are performed in follow-up to elevated levels of prostate-specific antigen or abnormal digital rectal examinations (1). Septicemia has been reported as a rare complication of the procedure (2). This report summarizes an investigation of four cases of *Pseudomonas aeruginosa* infection after TRUS-guided prostate biopsies in which contamination of the equipment was the likely source. The findings underscore the need to adhere to recommendations for the cleaning and disinfection of TRUS-guided prostate biopsy equipment.

On July 28, 2005, a urologist notified the Georgia Department of Human Resources, Division of Public Health (GDHP) regarding four patients who were hospitalized with *P. aeruginosa* infections within 6 days of outpatient TRUS-guided prostate biopsies performed at a clinic. All procedures were halted at the clinic pending the investigation. The four patients were white, non-Hispanic men aged 57–71 years who had undergone the biopsy procedure during July 20–26, 2005. They were the only patients who had TRUS-guided prostate biopsies at the clinic during that period. Subsequently, all four experienced fever and chills and were admitted to the hospital 1–6 days (mean: 2.5 days) after their procedures. Three patients were admitted with diagnosed septicemia and the fourth with a diagnosis of infection. *P. aeruginosa* was recovered from cultures of blood (one patient), urine (two patients), or blood and urine specimens (one patient). The patients were treated successfully with a combination of intravenous and oral antimicrobial agents during hospitalizations of 2–12 days (mean: 5.8 days).

All procedures had been performed in the clinic by the same urologist and staff members using the following technique. Immediately before each procedure, a new finger cot was fitted over the distal tip of the ultrasound probe, filled with gel to eliminate air bubbles, and secured with an O-ring. A standard condom was then fitted over the finger cot and ultrasound probe and filled with

lubricant. Next, a steel, nondisposable needle guide was fitted over the ultrasound probe, finger cot, and first condom. A second condom was fitted over these items and filled with lubricant. Once the ultrasound probe was inserted into the rectum and positioned correctly, the urologist used a spring-loaded biopsy gun to fire a sterile biopsy needle through the needle guide into the prostate, piercing the second condom, to obtain a core of tissue for pathologic analysis. The same needle was withdrawn and reinserted through the needle guide approximately eight times to obtain the needed tissue cores from each patient.

The clinic's standard practice for perioperative prophylaxis included administration of 500 mg of levofloxacin orally the night before the procedure, an enema per rectum 1 hour before the procedure, and 80 mg of gentamicin intramuscularly upon arrival at the clinic on the day of the biopsy. After the procedure, patients were instructed to take 500 mg of levofloxacin orally daily for 3 days.

After each procedure, the ultrasound probe was disinfected by wiping it with a 3.2% glutaraldehyde solution. A syringe was used to flush the steel needle guide first with soap, then with tap water, and, finally, with orthophthaldehyde (OPA), a high-level disinfectant. The needle guide was then soaked in the OPA for a minimum of 15 minutes and usually overnight. Before use, the needle guide was removed from the OPA and rinsed with tap water. A review of the manufacturer's written instructions revealed that the recommended reprocessing method for the needle guide called for first cleaning biologic material from the guide and then sterilizing the guide.

A total of 16 environmental samples were obtained from surfaces, supplies, equipment, and tap water in the clinic during August 5–10, 2005. One grew *P. aeruginosa*; this was a sample obtained from the narrow lumen of the needle guide after it was removed from OPA disinfectant. This specimen was obtained by scraping the needle guide lumen with a sterile needle and then using the needle to inoculate a sterile swab. All four patient isolates and the isolate obtained from the needle guide had similar antimicrobial susceptibility patterns and were resistant to gentamicin and levofloxacin, the agents used for perioperative prophylaxis. The needle-guide isolate and the three available patient isolates were indistinguishable by pulsed-field gel electrophoresis.

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Editorial Note

This report describes an investigation of *P. aeruginosa* infections that were likely related to contamination of TRUS prostate biopsy equipment that had not been adequately cleaned (i.e., by brushing) or properly sterilized and had been rinsed improperly with tap water after reprocessing. The association between the equipment and the infections was indicated by matching the strain of *P. aeruginosa* from the lumen of the reprocessed needle guide with those strains recovered from the three available patient isolates.

Although infectious complications of TRUS-guided prostate biopsies have been reported (2), contamination of the needle guide has not been previously implicated as the cause of infection. According to the Spaulding system for reprocessing medical devices (3), prostate biopsy needle guides are “critical devices” because the needles that pass through them penetrate sterile tissue. After adequate manual cleaning, critical devices must be sterilized before reuse. Steam sterilization is the preferred method for reprocessing heat-stable medical devices, including many prostate biopsy needle guides. The manufacturers of these guides provide recommendations for sterilization methods that are compatible with the specific devices, and users should review and follow these recommendations.

Manual cleaning to remove biologic material is a necessary first step in reprocessing any medical device; disinfection and sterilization protocols do not work effectively on visibly soiled surfaces. Because the lumens of needle guides and needle-guide support channels and assemblies are long and narrow, manual cleaning is difficult without the use of special equipment designed to clean the device. Manufacturers of reusable prostate needle guides recommend the use of special brushes to clean guides and support channels and assemblies. These brushes must be purchased separately from the needle guides, and a new brush should be used each time the guide is cleaned.

Another recent investigation demonstrates that infections due to the failure to properly clean the lumen of a prostate needle guide have not been limited to the cases described in this report. In April 2006, the Veterans Health Administration issued a Patient Safety Alert to all U.S. Department of Veterans Affairs (VA) hospitals stating that a routine environmental inspection at a urology clinic revealed that the lumen of a needle guide of a reusable, reprocessed, TRUS transducer assembly was soiled.* The ensuing investigation determined that brushes were not being used to clean the lumen of the needle guide. All VA

hospitals were instructed to review procedures for reprocessing this equipment, and other VA facilities also reported that brushes were not being used. The VA alert has prompted reviews by non-VA health-care systems. In Tennessee, facilities contacted the state health department to report that brushes were not being used to reprocess prostate biopsy needle guides. In response, the Tennessee Department of Health disseminated recommendations from the Food and Drug Administration (FDA) on reprocessing TRUS equipment to hospitals, surgical centers, and urologists.

In the cases described in this report, the practice of rinsing the needle guide in tap water after reprocessing might have contributed to its contamination. *P. aeruginosa* is well known to colonize tap water and has the ability to form biofilms on medical devices that are difficult to remove. Because tap water is not sterile, it should never be used to rinse medical equipment after reprocessing.

In June 2006, in response to the recent reports of problems with reprocessing prostate biopsy needle guides, FDA issued a Public Health Notification. This notification contains a summary of the recommendations for the proper reprocessing of reusable prostate biopsy equipment.† Health-care providers and their staffs should adhere to both the FDA recommendations and the equipment manufacturer’s cleaning instructions.

References

1. Wareing M. Transrectal ultrasound and prostate biopsy clinic. *Nurs Stand* 2004;18:33—7.
2. Crundwell MC, Cooke PW, Wallace DM. Patients’ tolerance of transrectal ultrasound-guided prostatic biopsy: an audit of 104 cases. *BJU Int* 1999;83:792—5.
3. Spaulding EH. Chemical disinfection of medical and surgical materials [Chapter 32]. In: Lawrence CA, Block SS, eds. *Disinfection, sterilization and preservation*. Philadelphia, PA: Lea & Febiger; 1968:517—31.

* Available at <http://www.va.gov/ncps/alerts/b-kmedicaltransduceralert06-011.pdf>.

† Available at <http://www.fda.gov/cdrh/safety/061906-ultrasoundtransducers.html>.

2005 Georgia Data Summary: COLORECTAL CANCER

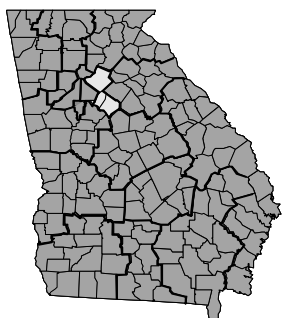


In Georgia, colorectal cancer is the third most common cancer diagnosed among males and females.

Colorectal Cancer

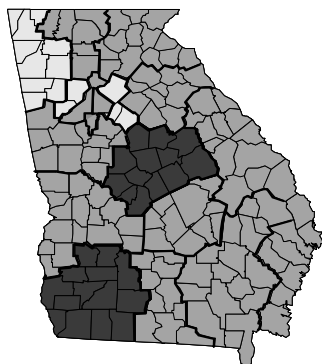
- Colorectal cancer is the third most common cancer diagnosed among Georgia males and females.
- Over 4,200 new cases of colorectal cancer will be diagnosed in 2005 in Georgia.

Age-adjusted Colorectal Cancer Incidence Rates, Females, by Health District, Georgia, 1999-2002



- Rate significantly higher than the state
- No significant difference from the state
- Rate significantly lower than the state

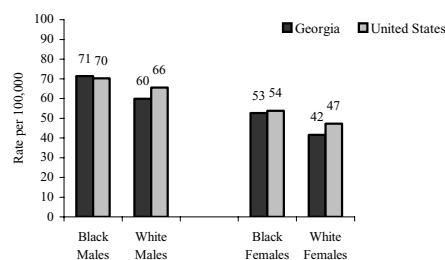
Age-adjusted Colorectal Cancer Incidence Rates, Males, by Health District, Georgia, 1999-2002



- Rate significantly higher than the state
- No significant difference from the state
- Rate significantly lower than the state

- The East Metro (3-4) Health District has a significantly lower colorectal cancer incidence rate than the state average for females.
- The Northwest (1-1), Cobb/Douglas (3-1), and East Metro (3-4) Health Districts have significantly lower colorectal cancer incidence rates than the state average for males.
- The North Central (5-2) and Southwest (8-2) Health Districts have significantly higher colorectal cancer incidence rates than the state average for males.

Age-adjusted Colorectal Cancer Incidence Rate, by Race and Sex, Georgia (1999-2002) and the United States (1998-2002)



RISK FACTORS

- Increasing age
- Personal or family history of colorectal cancer or polyps
- Smoking and alcohol consumption
- Physical inactivity
- High fat and/or low fiber diet
- Inadequate intake of fruits and vegetables
- Obesity

Prevention

Colorectal cancer can be prevented by managing modifiable risk factors such as diet and physical activity, and by screening to enable detection and removal of precancerous polyps.

Data source: Georgia Comprehensive Cancer registry (1999-2002)

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Visit <http://health.state.ga.us/programs/gccr/index.asp> for more information about cancer in Georgia.

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Reported Cases of Selected Notifiable Diseases in Georgia Profile* for April 2006

Selected Notifiable Diseases	Total Reported for April 2006	Previous 3 Months Total Ending in April			Previous 12 Months Total Ending in April		
	2006	2004	2005	2006	2004	2005	2006
Campylobacteriosis	39	116	114	133	616	583	608
<i>Chlamydia trachomatis</i>	2764	8711	8267	9129	35013	33880	34634
Cryptosporidiosis	12	30	32	42	137	173	174
<i>E. coli</i> O157:H7	1	9	3	7	31	19	32
Giardiasis	45	175	160	131	846	896	693
Gonorrhea	1172	3682	3586	3979	16844	15911	16363
<i>Haemophilus influenzae</i> (invasive)	9	38	36	33	104	124	103
Hepatitis A (acute)	6	93	22	13	713	217	110
Hepatitis B (acute)	22	119	57	51	657	400	172
Legionellosis	1	7	3	1	32	41	36
Lyme Disease	0	3	1	0	11	8	5
Meningococcal Disease (invasive)	4	2	2	8	27	16	20
Mumps	1	0	1	1	2	3	2
Pertussis	1	8	8	4	30	34	42
Rubella	0	1	0	0	1	0	0
Salmonellosis	77	191	211	198	2065	1953	1943
Shigellosis	65	148	109	197	933	593	791
Syphilis - Primary	10	40	28	20	144	110	119
Syphilis - Secondary	17	131	123	66	494	485	446
Syphilis - Early Latent	7	145	102	54	651	325	348
Syphilis - Other**	55	207	248	191	846	918	848
Syphilis - Congenital	0	2	1	0	8	5	2
Tuberculosis	37	134	115	111	529	513	492

* The cumulative numbers in the above table reflect the date the disease was first diagnosed rather than the date the report was received at the state office, and therefore are subject to change over time due to late reporting. The 3 month delay in the disease profile for a given month is designed to minimize any changes that may occur. This method of summarizing data is expected to provide a better overall measure of disease trends and patterns in Georgia.

** Other syphilis includes latent (unknown duration), late latent, late with symptomatic manifestations, and neurosyphilis.

AIDS Profile Update

Report Period	Total Cases Reported*			Percent Female	Risk Group Distribution (%)					Race Distribution (%)			
	<13yrs	>=13yrs	Total		MSM	IDU	MSM&IDU	HS	Blood	Unknown	White	Black	Other
Latest 12 Months: 08/05-07/06	4	1,699	1,703	26.5	31.7	6.8	2.0	7.1	1.1	50.4	22.1	76.1	1.8
Five Years Ago: 08/01-07/02	1	1,636	1,637	26.8	39.1	8.1	2.8	18.9	2.1	29.0	18.4	77.0	4.6
Cumulative: 07/81-07/06	228	30,175	30,403	19.7	44.8	15.5	4.9	14.1	1.8	19.0	31.5	66.1	2.3

MSM - Men having sex with men IDU - Injection drug users HS - Heterosexual

* Case totals are accumulated by date of report to the Epidemiology Section