

- to cold-recombinant influenza A and inactivated trivalent influenza virus vaccines in older adults with chronic diseases. *J Clin Microbiol* 1986;24:336-342.
67. Treanor J, Dumyati G, O'Brien D, Riley MA, Riley G, Erb S, et al. Evaluation of cold-adapted, reassortant influenza B virus vaccines in elderly and chronically ill adults. *J Infect Dis* 1994;169:402-407.
  68. Budnick LD, Stricof RL, Ellis F. An outbreak of influenza A in a nursing home. *NY State J Med* 1984;84:235-238.
  69. Houck P, Hemphill M, LaCroix S, Hirsh D, Cox N. Amantadine-resistant influenza A in nursing homes—identification of a resistant virus prior to drug use. *Arch Intern Med* 1995;155:533-537.
  70. Stange KC, Little DW, Blatnik B. Adverse reactions to amantadine prophylaxis of influenza in a retirement home. *J Am Geriatr Soc* 1991;39:700-705.
  71. Delagau J, Somani S, Cooper SL, Irvine PW. Occurrence of adverse effects and high amantadine concentrations with influenza prophylaxis in a nursing home. *J Am Geriatr Soc* 1990;38:428-432.
  72. Patriarca PA, Arden NH, Koplan JP, Goodman RA. Prevention and control of type A influenza infections in nursing homes. *Ann Intern Med* 1987;107:732-740.
  73. Tamblyn SE. Amantadine use in influenza outbreaks in long-term care facilities. *Can Med Assoc J* 1997;157:1573-1574.
  74. Patriarca PA, Kater NA, Kendal AP, Bregman DJ, Smith JD, Sikes K. Safety of prolonged administration of rimantadine hydrochloride in the prophylaxis of influenza A virus infections in nursing homes. *Antimicrob Agents Chemother* 1984;26:101-103.
  75. Schilling M, Povinelli L, Krause P, Gravenstein M, Ambrozaitis A, Jones HH, et al. Efficacy of zanamivir for chemoprophylaxis of nursing home influenza outbreaks. *Vaccine* 1998;16:1771-1774.
  76. Gubareva LV, Matrosovich MN, Brenner MK, Bethell RC, Webster RG. Evidence for zanamivir resistance in an immunocompromised child infected with influenza B virus. *J Infect Dis* 1998;178:1257-1262.
  77. Betts RF. Influenza virus. In: Mandell GL, Bennet JE, Dolin R, eds. *Principles and Practice of Infectious Diseases*. 4th ed. New York, NY: Churchill Livingstone; 1995:1546-1567.
  78. Cate TR. Clinical manifestations and consequences of influenza. *Am J Med* 1987;82(6a):15-19.
  79. Wald TG, Miller BA, Shult P, Drinka P, Langer L, Gravenstein S. Can respiratory syncytial virus and influenza A be distinguished clinically in institutionalized older persons? *J Am Geriatr Soc* 1995;43:170-174.
  80. Falsey A, Treanor JJ, Betts RF, Walsh EE. Viral respiratory infections in the institutionalized elderly: clinical and epidemiological findings. *J Am Geriatr Soc* 1992;40:115-119.
  81. Janssens J-P, Gauthier L, Herrmann F, Tkatch, Michel JP. Community-acquired pneumonia in older patients. *J Am Geriatrics Soc* 1996;44:539-544.
  82. Falsey A. Noninfluenza respiratory virus infection in long-term care facilities. *Infect Control Hosp Epidemiol* 1991;12:602-608.
  83. Troy CJ, Peeling RW, Ellis AG, Hockin JC, Bennett DA, Murphy MR, et al. *Chlamydia pneumoniae* as a new source of infectious outbreaks in nursing homes. *JAMA* 1997;277:1214-1218.
  84. Mathur U, Bentley DW, Hall CB. Concurrent respiratory syncytial virus and influenza A infections in the institutionalized elderly and chronically ill. *Ann Intern Med* 1980;93(S1):49-52.
  85. Falsey AR, Walsh EE, Betts RF. Serologic evidence of respiratory syncytial virus infection in nursing home patients. *J Infect Dis* 1990;162:568-569.
  86. McGeer A, Campbell B, Emori TG, Hierholzer WJ, Jackson MM, Nicolle LE, et al. Definitions of infections for surveillance in long-term care facilities. *Am J Infect Control* 1991;19:1-7.
  87. Gomolin IH, Leib HB, Arden NH, Sherman FT. Control of influenza outbreaks in the nursing home: guidelines for diagnosis and management. *J Am Geriatr Soc* 1995;43:71-74.
  88. Gravenstein S, Miller BA, Ershler WB, Brown CS, Mast E, Circo R, et al. Low sensitivity of CDC case definition for H3N2 influenza in elderly nursing home subjects. *Clinical Research* 1990;38:547A.
  89. Simor AE, Augustin A, Staynor K, Clark BA, Petric M, Kasupski G, et al. Influenza A in elderly nursing home residents: evaluation of vaccine efficacy and case definitions of influenza-like illness. Presented at the 33rd Interscience Conference on Antimicrobial Agents and Chemotherapy meeting; October 17-20, 1993; New Orleans, LA. Abstract 1383.
  90. Waner JL, Todd SJ, Shalaby H, Murphy P, Wall LV. Comparison of Directigen FLU-A with viral isolation and direct immunofluorescence for the rapid detection and identification of influenza A virus. *J Clin Microbiol* 1991;29:479-482.
  91. Johnston SLG, Bloy H. Evaluation of a rapid enzyme immunoassay for detection of influenza A virus. *J Clin Microbiol* 1993;31:142-143.
  92. Leonardi GP, Leib H, Birkhead GS, Smith C, Costello P, Conron W. Comparison of rapid detection methods for influenza A virus and their value in health-care management of institutionalized geriatric patients. *J Clin Microbiol* 1994;32:70-74.
  93. Morens DM, Rash VM. Lessons from a nursing home outbreak of influenza A. *Infect Control Hosp Epidemiol* 1995;16:275-280.
  94. Gravenstein S, Miller BA, Drinka P. Prevention and control of influenza A outbreaks in long-term care facilities. *Infect Control Hosp Epidemiol* 1992;13:49-54.
  95. Hall WN, Goodman RA, Noble GR, Kendal AP, Steece RS. An outbreak of influenza B in an elderly population. *J Infect Dis* 1981;144:297-302.
  96. Drinka PJ, Gravenstein S, Schilling M, Krause P, Miller BA. Duration of antiviral prophylaxis during nursing home outbreaks of influenza A. A comparison of 2 protocols. *Arch Intern Med* 1998;158:2155-2159.
  97. Garner JS, Hospital Infection Control Practices Advisory Committee. Guideline for isolation precautions in hospitals. *Infect Control Hosp Epidemiol* 1996;17:53-80.
  98. Tablan O, Anderson LJ, Arden NH, Breiman RF, Butler JC, McNeil MM, et al. Guidelines for prevention of nosocomial pneumonia. *Infect Control Hosp Epidemiol* 1994;15:587-627.
  99. Gravenstein S. Strategies to limit influenza in a nursing home. *Geriatric Focus* 1992;2:1-11.
  100. AIDS/TB Committee of the Society for Healthcare Epidemiology of America. Management of healthcare workers infected with hepatitis B virus, hepatitis C virus, human immunodeficiency virus, or other blood-borne pathogens. *Infect Control Hosp Epidemiol* 1997;18:349-363.

## Dissemination of VRE From Interfacility Transfer of Colonized Patients

Gina Pugliese, RN, MS  
Martin S. Favero, PhD

During early 1997, the Siouxland District Health Department ([SDHD] Sioux City, IA) reported an increased incidence of vancomycin-resistant enterococcal (VRE) isolates at area healthcare facilities. Trick and co-investigators from the CDC's Hospital Infections Program conducted a prevalence survey and case-control study to determine the prevalence and risk factors for colonization with

VRE strains at 32 healthcare facilities in the SDHD region. Of 2,266 patients and residents, 1,934 (85%) participated, and 40 (2.1%) were positive for (gastrointestinal) VRE colonization. The prevalence of VRE isolates was significantly higher in acute-care facilities (ACFs) than in long-term-care facilities (LTCFs; 10/152 [6.6%] vs 30/1,782 [1.7%]). LTCF case patients were significantly more likely than controls to have been inpatients at any ACF (19/30 vs 12/66). Of 40 VRE isolates, 34 (85%) were a related strain. The predominant strain was

present in all 12 LTCFs that had at least 1 case-patient in each facility.

Soon after the introduction of VRE isolates into this region, dissemination to multiple LTCFs resulted from resident transfer from ACFs to LTCFs.

FROM: Trick WE, Kuehnert MJ, Quirk SB, Arduino MJ, Agüero SM, Carson LA, et al. Regional dissemination of vancomycin-resistant enterococci resulting from interfacility transfer of colonized patients. *J Infect Dis* 1999;180:391-396.