

ing considerable institutional effort and major personnel resources. The demonstration by REA of identity between the patient isolate and the hospital isolate pattern strengthened the epidemiological association and supported the adoption of new control measures, including enhanced environmental surveillance, control of water temperatures in outlets during the superheating periods, and continuous hyperchlorination of the hot water system to maintain free chlorine levels  $>2$  ppm.

This case demonstrates the usefulness of molecular typing methods<sup>4-7</sup> in resolving epidemiological problems and the importance of careful documentation of previous nosocomial isolates.

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## REFERENCES

1. Redd SC, Cohen ML. Legionella in water: what should be done? *JAMA* 1987; 257:1221-1222.
2. Stout JE, Yu VL, Best MG. Ecology of *Legionella pneumophila* within water distribution systems. *Appl Environ Microbiol* 1985;49:221-228.
3. Van Ketel RJ, Schegget JS, Zanan HC. Molecular epidemiology of *Legionella pneumophila* serogroup 1. *J Clin Microbiol* 1984;20:362-364.
4. Pedro-Botet ML, Sabrià-Leal M, Espinosa LI, Condom MJ, Carrasco I, Foz M. Utilidad de los marcadores epidemiológicos moleculares en el estudio de un brote epidémico de enfermedad del legionario de origen nosocomial. *Med Clin (Barc)* 1992;99:761-765.
5. Pfaller MA. Typing methods for epidemiologic investigation. In: Ballows, ed. *Manual of Clinical Microbiology*. Washington, DC: American Society for Microbiology; 1991:171-182.
6. Pfaller M, Hollis R, Johnson R, et al. The application of molecular and immunologic techniques to study the epidemiology of *Legionella pneumophila* serogroup 1. *Diagn Microbiol Infect Dis* 1989;12:295-302.
7. Addis D, Davis J, Laventure M, Hutchinson M, McKinney R. Community-acquired Legionnaires disease associated with a cooling tower: evidence for longer distance transport of *L. pneumophila*. *Am J Epidemiol*. 1989;130:557-558.

## Nosocomial Infection Control in Latin America

### To the Editor:

In 1984, my mentor, Samuel Ponce de León, MD, wrote an editorial for this journal entitled, "Nosocomial Infection Control in Latin America: We Have to Start Now."<sup>1</sup> The article briefly summarized the prevailing situation in most public hospitals in Latin America: deficient sanitary systems, inadequate hospital-bed distribution, hospital personnel ignorance on infection control measures, and limited economic resources that resulted in a scarcity of medical equipment and supplies.

Almost ten years later, Mexico has shown notable progress in two areas. First, the number of medical articles on nosocomial infections has multiplied considerably. To cite an example, *the Boletín Médico del Hospital Infantil de México*, the leading journal on pediatrics, published five articles on the subject during the last two years,<sup>2-6</sup> compared with only one article from 1989 through 1990.<sup>7</sup> Second, there has been increasing concern by both national and state health authorities with the problem. In 1986, surveillance of nosocomial infections was declared mandatory by law,<sup>8</sup> and in recent years, pressure has been exerted on hospitals throughout the country to comply with norms on monthly meetings for infection control committees and periodic notification of nosocomial infection rates to the National Ministry of Health.

Although information on the epidemiology of nosocomial infections and interest by health authorities are two essential conditions for achieving effective infection control, it is clear that these two alone are insufficient.

Dr. Ponce de León's editorial predicted that "We are not only facing a problem today but one that will be increasing in upcoming years." In the last decade, budget cuts for public hospitals in Mexico

have been severe in every area, including staff, equipment, and hospital maintenance. During this period, only 0.37% of the GNP was invested in the public hospitals pertaining to the Secretaría de Salud, which covers approximately 40% of the Mexican population.<sup>9</sup>

The result is a frustrating situation in which one may know the particular risk factors for a certain infection, but not have the resources to eliminate or reduce them.

In the case of my hospital in Mérida, Yucatán, how can we expect to reduce our infection rate when we use large feeding tubes as intravenous catheters, when only open urinary drainage systems are available, when we disinfect surgical instruments and endotracheal tubes with benzalkonium chloride, and have a constant shortage of soap and paper towels? How can we strive for infection control when faced with gross understaffing, with a nurse-to-patient ratio that reaches 1:40 on weekends and night shifts? In the middle of endemic rates surpassing 35% and constant epidemics, I ask, "Is it possible to start effective infection control now?" The answer, I'm afraid, is no, with many more infections -- and deaths -- awaiting us.

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## REFERENCES

1. Ponce de León-Rosales S. Nosocomial infection control in Latin America: we have to start now. *Infect Control* 1984;5:511-512.
2. Zaidi-Jacobson M, Ponce de León-Rosales S, Vazquez-Narvaez G, Chable-Mendoza C. Estudio prospectivo de infecciones nosocomiales en una unidad de pediatría. *Bol Med Hosp Infant Mex* 1991;48:538-543.
3. Ibarra-Colado JE, Mendez-Hernandez S, Cortés-Castillo LF. Infecciones hospitalarias en niños en un hospital general. *Bol Med Hosp Infant Mex* 1991;48:820-825.
4. Larracilla-Alegre JL, Camarillo-Valencia M, Robles-Martínez T, Aguilar A. Infecciones intrahospitalarias en un servicio de recién nacidos. *Bol Med Hosp*

- Infant Mex* 1992;49:241-249.
5. Barroso-Aguirre J, Fernandez-Carrocer LA, Martinez-Sanchez C, Arredondo-Garcia JL, Karschmer S. Infección nosocomial en la etapa neonatal en un centro de tercer nivel de atención. *Bol Med Hosp Infant Mex* 1992;49:666-670.
  6. Mas-Muñoz RL, Udaeta-Mora E, Rivera-Rueda A, Morales-Suarez M. Infección nosocomial en recién nacidos con ventilación mecánica. *Bol Med Hosp Infant Mex* 1992;49:839-844.
  7. Navarrete-Navarro S, Avila-Figueroa C, Ruiz-Gutierrez E, et al. Sarampión nosocomial: propuestas para su control en hospitales. *Bol Med Hosp Infant Mex* 1990;47:495-499.
  8. Norma técnica número 23 para la vigilancia epidemiológica de las enfermedades transmisibles. *Diario Oficial de la Federación*. Mexico, DE July 7, 1986:77-83.
  9. *El ingreso y gusto público en México*. Mexico, DF: Instituto Nacional de Estadística, Geografía e Informática; 1992;9:96-97.