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## RESEARCH ARTICLE

# Quality of care for children with upper respiratory infections at Mexican family medicine clinics



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### KEYWORDS

Quality of care;  
Upper respiratory  
infections;  
Indicators;  
Children

### Abstract

**Background:** Upper respiratory infections are the principal cause of morbidity in children <5 years of age. The objectives of this study were (i) to develop quality-of-care indicators for evaluation of care for children with upper respiratory infections (URI) at the primary care level using data from the electronic health records and (ii) to evaluate the quality of URI care offered to children <5 years of age at family medicine clinics (FMCs).

**Methods:** Development of indicators following the RAND-UCLA method was used. A cross-sectional analysis of quality of care provided for children with URI in four FMCs in Mexico City where 10,677 children <5 years of age with URI participated. The source of information was data from 2009 electronic health records. Quality of care was evaluated using six indicators developed in the first stage of this study.

**Results:** The quality of care evaluation identified that only 15% of children had registries of intentional search of respiratory distress signs and 27% received information on warning signs. More than 61% of children diagnosed with uncomplicated and nonstreptococcal URI received antibiotic prescription during the first visit. In the case of children diagnosed with streptococcal pharyngitis or tonsillitis, 57.5% received the appropriate antibiotic. On average, the percentage of recommended care received was 47.2%.

**Conclusions:** It is reasonable to promote the use of electronic health records to routinely evaluate the quality of URI care. It is necessary to consider quality flaws that were found in order

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**PALABRAS CLAVE**

Calidad en la atención;  
Infecciones respiratorias superiores;  
Indicadores;  
Niños

to endorse strategies aimed at strengthening the technical capacity of health personnel to exercise evidence-based clinical practice.

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## Calidad de la atención en niños con infecciones respiratorias superiores en las clínicas mexicanas de medicina familiar

### Resumen

**Introducción:** Las infecciones respiratorias superiores son la principal causa de morbilidad en niños menores de cinco años. Los objetivos de este estudio fueron los siguientes: (i) desarrollar indicadores para medir la calidad de atención a niños con infecciones respiratorias superiores (IRS) en atención primaria; (ii) evaluar la calidad de la atención para IRS que los menores de cinco años reciben en clínicas de medicina familiar.

**Métodos:** Se desarrollaron indicadores siguiendo el método RAND-UCLA. Estudio transversal de la calidad de atención en cuatro clínicas de medicina familiar en la Ciudad de México. Participaron 10,677 niños menores de cinco años con IRS. La fuente de la información fueron los registros médicos electrónicos de 2009. La calidad de la atención se determinó a través de 6 indicadores.

**Resultados:** La evaluación de la calidad de la atención identificó que el 15% de los niños tenía registros de búsqueda intencionada de signos de dificultad respiratoria; 27% recibió información sobre las señales de alarma. Más del 61% de los niños diagnosticados con IRS no estreptocócica recibió prescripción de antibióticos durante la primera consulta. En los niños con diagnóstico de faringitis estreptocócica o amigdalitis, el 57,5% recibió el antibiótico apropiado. En promedio, el 47.2% recibió la atención recomendada.

**Conclusiones:** Es recomendable promover el uso de los datos del expediente clínico electrónico para evaluar sistemáticamente la calidad de la atención en IRS. Es necesario considerar los problemas de calidad para diseñar las estrategias encaminadas a fortalecer la capacidad técnica del personal de salud para ejercer la práctica clínica basada en la evidencia para la atención de IRS.

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## 1. Introduction

Upper respiratory infections (URI) are the leading cause of morbidity among children <5 years of age. Most URI are of viral origin and resolve spontaneously; however, these conditions require providing high quality care to avoid potential complications and increase the chance of improving health outcomes<sup>1</sup>. Key points for treatment include educating the primary caretaker to provide proper homecare and seek healthcare when needed<sup>2-4</sup>. Healthcare personnel should also have clinical skills for correct diagnosis and appropriate treatment<sup>2-7</sup>.

International and national clinical guidelines for the diagnosis and treatment of URI are available to support the clinical decisions; nonetheless, the gap between actual care and the best scientifically proven care still exists. In developing countries this gap is wide due to scarcity of resources, inadequately trained health personnel and lack of standards and indicators<sup>8</sup>. Treatment for URI is far from appropriate; up to 70% of antibiotic prescriptions for URI are still unjustified<sup>5-7</sup>. The existing abuse in the prescribing of antibiotics contributes to the development of antimicrobial resistance, favors elimination of normal intestinal flora,

causes adverse drug reactions and increases the costs of healthcare<sup>9,10</sup>. Evidence documenting the negative consequences of unjustified antibiotic prescription is increasing; however, the total consumption of antibiotics in Europe and Latin America is on the rise<sup>11,12</sup>.

Information about the quality of care for children with URI is not scarce; however, few studies have taken advantage of the clinical information stored in the electronic health record (EHR). The availability of the EHR has increased the possibility to better use the clinical information for a wide variety of purposes in addition to routine clinical care such as management of health services and quality of care evaluation<sup>13,14</sup>.

The Mexican Social Security Institute (IMSS) covers ~47 million persons and reports that URIs are among the top reasons for visits to FMCs<sup>15</sup>. Furthermore, IMSS has evidence-based clinical guidelines and uses the EHR for routine care. All clinical records are electronically stored. Nonetheless, evaluation of the quality of care for URI is not routinely performed. These circumstances prompted carrying out a study with two objectives: (i) to develop quality-of-care indicators (QCI) for evaluation of care for children with URI at the primary care level using data from the electronic health

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