

Rapid Analysis of Medicine Effectiveness, Safety, and Cost as an Academic Requirement for a Certificate Course on Rational Medicine Use



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Background

The Universidad Central del Este de República Dominicana (Central University of the Eastern Dominican Republic) conducted a certificate course on rational medicine use in 2016 with the assistance of the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, financed by the US Agency for International Development (USAID). Its blended training method allowed 32 students to reinforce their theoretical knowledge with operational research in the workplace and classroom discussions of their findings and options for addressing problems detected.

As part of the “Introduction to Rational Medicine Use” module, the students conducted a rapid analysis of the effectiveness, safety, and cost of medicines not included in the Basic List of Essential Medicines (Cuadro Básico de Medicamentos Esenciales, or CBME) at the health facilities in which they completed their on-the-job training.

Methodology

The students reviewed the CBME and the theories and methods used as the basis for its updating and publication in 2015.⁵ Through individual reading and classroom discussions, they acquired the tools and skills needed to analyze the effectiveness, safety, and cost of different medicines. They were assigned to 10 facilities for on-the-job training: eight hospitals and two Regional Health Services (Servicios Regionales de Salud, or SRSs); the latter are responsible for coordinating service delivery at primary (level one) health care centers.

At each facility, the students identified medicines purchased in 2015 that were not included in the CBME and established the consumption (in units) and cost of these products (number of units consumed multiplied by unit cost). They analyzed the effectiveness and safety of the five medicines accounting for the largest share of spending at each facility (a total of 50 medicines) and the availability of therapeutic equivalents in the CBME. Spending on medicines with equivalents in the CBME was compared with the theoretical cost of medicines included in the CBME.

The work teams reported on and discussed the appropriateness of the use of medicines not included in the CBME, the availability of therapeutic equivalents in the CBME, and the difference

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in the prices of both medicines at classroom sessions. Their findings and analyses were reviewed and adjusted to reflect comments made by their instructors and other students.

Findings

On average, 17% of the medicines in use were not included in the CBME (between 15 and 76 medicines per facility). The effectiveness, safety, and cost analysis conducted at each facility was limited to the five medicines accounting for the largest share of facility spending. Six of the medicines were used in common by all the facilities, which brought the total number of different products studied down to 38. The medicines not in the CBME purchased most frequently by the 10 facilities were iron sucrose solution for injection, ambroxol ampoules or syrup, and citicoline ampoules.

A review of the literature revealed that administration of 11% of these medicines (4 of the 38 products studied) was not recommended either because of their limited or questionable effectiveness or because of problems with their safety. Eighty-two percent of the medicines with well-documented effectiveness and safety (28 of 34 products) had similar products or equivalents in the CBME, all of which except 3 had lower prices. Had the 10 facilities taking part in the study purchased these 28 equivalent medicines included in the CBME, they would have saved DOP 4.7 million (USD 104,336) in 2015.

Analysis and Discussion

The exercises conducted as part of their on-the-job training helped familiarize the students in the certificate course on rational medicine use with the CBME development process and the implications of purchasing medicines not included in the CBME for patient health and health facility budgets. The 10 rapid analyses conducted by the students revealed the use of medicines with questionable therapeutic value and high levels of financial waste from the use of products for which, though effective and safe, lower-cost therapeutic equivalents were available in the CBME.

The data produced by these studies were promptly used in decision-making processes, since the students were regular staff members at the facilities in which the studies were conducted, and their findings were shared and discussed with the pharmacy and therapeutics committee.

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