Rapid Analysis of the Consumption of Medicines and Medical Supplies as an Academic Requirement for a 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 assistance from the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, financed by the US Agency for International Development. 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 "Problem Identification and Strategies for Improving Medicine Use" module, the students used the ABC classification method[5] to conduct a rapid analysis of the consumption of medicines and supplies at the health facilities in which they completed their on-the-job training.

Methodology

The students were provided with written materials and received theoretical and practical training in a classroom session. With their newly acquired skills, they used the ABC method to analyze the consumption of medicines and medical supplies. Their on-the-job training was conducted at three general hospitals, two specialized pediatric hospitals, a hospital specializing in neoplastic diseases, a hospital specializing in dialysis treatment, and two Regional Health Services (Servicios Regionales de Salud, SRSs) coordinating service delivery at primary (level one) health care centers.

The students collected consumption data for the 12 months prior to their on-the-job training period. They used the ABC method to analyze the data and discussed their findings in a classroom session. In this manner, they identified the products accounting for the largest share of spending, discussed possible causes, and identified the medicines whose use did not appear to be in keeping with the pathologies treated at the facilities in question. These products would be subjected to medicine use studies in the following course module.

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[5] The products consumed within a specified period of time are ranked in decreasing order according to their consumption value (number of units × unit price). The next step is to establish each product's share of the overall value. Last, the products accounting for 80% of facility's spending are classified in Category A, those accounting for the next 15% of spending are classified in Category B, and those accounting for the remaining 5% are classified in Category C.

Findings

Sixteen percent of the medicines and medical supplies consumed at the hospitals during the 12-month period before the on-the-job training program accounted for 81% of the budget. On average, 21% of the medicines with the highest consumption value (in Category A) are not included in the Basic List of Essential Medicines (Cuadro Básico de Medicamentos Esenciales, or CBME). Such medicines accounted for 15% of the hospitals' budget during the study period (DOP 22,351,766, equivalent to USD 486,352). This group includes monoclonal antibodies, last-resort antibiotics in nonapproved concentrations, isopropyl alcohol, injectable levetiracetam, and iron sucrose. The comparative study of the findings from the ABC analysis at hospitals with similar treatment capacity was used as the basis for making judgments on consumption patterns warranting a more in-depth study of prescribing practices and adherence to therapeutic protocols. For example, human albumin accounted for 8% of the budget at Moscoso Puello hospital, but there was no record of any human albumin use whatsoever at Juan Pablo Pina and Dr. Angel Mendoza hospitals.

Thirty-five percent of the medicines and medical supplies consumed at the primary health care centers operated by the two SRSs during the 12-month period before the on-the-job training program accounted for 80% of the budget. On average, 33% of the medicines with the highest consumption value (in Category A) are not included in the CBME. Such medicines accounted for 26% of the budget of the SRSs during the study period (DOP 18,334,784, equivalent to USD 398,946). This group includes, but is not limited to, multivitamins, pediatric broncholytic agents, and combination antihypertensive drugs. The comparative analysis of the findings from the ABC analysis at the SRSs was used as the basis for making judgments on consumption patterns warranting a more in-depth study of prescribing practices and adherence to therapeutic protocols. For example, Bromhexine syrup 4mg/5ml accounted for 2.1% of the budget of SRS III, compared with 1.5% of the budget of SRS VI.

Analysis and Discussion

The knowledge and skills acquired by the students in the certificate course on rational medicine use helped them identify high-impact medicines and supplies for the facility budget, and of those, the ones that could be replaced with lower-cost alternative therapies. The data collection and analysis process and the discussion of findings allowed the students to devise alternative solutions for improving medicine use while at the same time optimizing the limited funds available for their procurement.

The comparative analysis of consumption value at facilities with similar treatment capacity was used by the students as the basis for establishing the existence of seemingly irregular consumption patterns. This exercise helped pinpoint medicines to be subjected to *prescription/ indication* medicine use studies in the following course module.

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