

Opportunity cost of not preventing heart failure: case study of a public hospital in Ecuador

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BACKGROUND:

Ecuador is a South American middle-income country, where public health services are a right guaranteed by the Constitution. The National Health Care System is based on a public health network and complemented by private hospitals. According to the Constitution, all public health care services should be granted and covered by the respective public social insurance or by the Ministry of Public Health. This means that the budget of the public hospitals must cover all the needs of the patients, thus efficiency is a must when managing these resources. As most LMIC countries, Ecuador deals with a double burden of disease, where NCDs have increased in prevalence and incidence year after year. Thus, this means that specialized public hospitals have an increase demand of services. Unfortunately, a large number of patients enter the health care system in deteriorated and uncontrolled health conditions. One important health condition that has rapidly increase in demand is heart failure. To estimate the economic burden, this research takes the case of the biggest public hospital in Quito, to understand the budget impact of this health condition.

OBJECTIVE:

Estimate the budget impact analysis of treating heart failure in a public hospital in Ecuador and compare it with the use of a preventive technology in this hospital

METHODS:

To estimate the BIA, a protocol developed by the hospital was used. However, this was adjusted according to defined clinical criteria. by technical experts in the medical field within which the parameters for the scheme of management, treatment and follow-up of the evaluated health condition were defined. On the other hand, in order to standardize the procedure fee collection model, the 2014 National Health System Fee Schedule was used as the primary source, as well as the drug prices defined by Secretaria de Fijacion de Precios de Medicamentos. All values were adjusted according to PPP

RESULTS:

The representativeness of the cost of the diagnosis, treatment and follow-up phases (and complementary hospitalization in patients who require it), whether the gateway was an emergency or an outpatient consultation, would be 11.5% of the budget assigned to the public hospital in 2022. Similar to the treatment schedule of similar conditions, the biggest financial burden comes from the drugs that patients have to take indefinitely. Considering no change in the way patients are starting their treatment in the hospital, the budget impact increases every year, as the number of projected patients increases based on the hospital’s database. For 2025, almost 15% of the budget will need to be invested in patients with heart failure. Considering the same population, if these patients would have been screened using a technology such as NT-PRO BNP, the budget impact is 0.05% for 2022.

Year	Total cost for estimated number of patients	Hospital budget projection	Hospital budget impact
2022	\$9.252.766,95	\$80.168.712,00	11,5%
2023	\$10.761.496,82	\$86.025.456,00	12,5%
2024	\$11.843.603,39	\$88.814.112,00	13,3%
2025	\$12.962.038,92	\$91.602.776,00	14,2%

CONCLUSIONS:

The hospital, as all the public health institutions in the country, need to guarantee the sustainability of the systems that finance it, for which the population growth of patients with the analyzed health condition was identified, according to the information provided by the requesting area, where it is estimated that from 700 patients estimated in 2018, the year 2022 would close on average with a total of 1080 patients and, maintaining a constant growth rate using econometric methods of population projection, this number would rise to 1433 cases in the year 2,025, which are classified among the 1,232 admitted through an outpatient clinic and the remaining 200 through the emergency service.

Prevention has been proven to be the most cost efficient strategy specially when related to NCDs. In LMICs such as Ecuador, the need of financial resources increases overtime. Thus, the implementation of technologies that can prevent or efficiently provide a diagnosis, is the best option for all hospitals. In the case of this hospital, the amount of resources devoted to heart failure has an important opportunity cost.

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