Financing cancer care and control: Lessons from Colombia

Working Paper and Background Note Series, No.1

Global Task Force on Expanded Access to Cancer Care and Control in Developing Countries

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Financing cancer care and control: Lessons from Colombia
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First published by the Harvard Global Equity Initiative in May 2011.
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About this publication
This publication is part of the Global Task Force on Expanded Access to Cancer Care and Control in Developing Countries (GTF.CCC) Working Paper and Background Note Series. It was produced in collaboration with PROESA as a background paper for a database on innovative finance strategies on cancer care and control in low- and middle-income countries (LMICs), and particularly to document examples at the country-level.

This is a working paper and therefore represents research currently in progress that has not gone through a review process. Comments are welcomed at gtfccc@harvard.edu.

Discussion Version: May 9, 2011


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Introduction
A necessary condition for expanding access to cancer prevention and treatment is sustainable financing. This in turn requires adequate planning, resource generation and allocation mechanisms.

As health systems worldwide embrace the political and ethical imperative of achieving universal coverage, mechanisms are implemented for ensuring that the whole population has proper access to essential services. Many countries have taken a step further and established universal entitlements to certain services, which take the form of guaranteed benefits packages. The latter are a potentially powerful tool for driving improvements in access to services.

This case study focuses in the experience of Colombia, a middle-income country with 45 million inhabitants, in integrating cancer prevention, detection and care to the statutory health care system. In the early nineties this country adopted a universal social health insurance system and introduced a mandatory benefits package, which has been the main policy tool with which health care (including cancer) has been organized and financed.

The Health Care Reform
The reform of 1993 created a universal health insurance system. Workers and employers in the formal sector (public or private) contribute 12.5% of their wage earnings to a central fund. Workers and their families choose a social health insurer among many public and private options. These are known as health promotion entities (EPS, by the acronym in Spanish). EPS are more than mere insurers, as they are also involved with organizing the provision of care. The central fund then pays EPS a risk adjusted capitated rate, based on the population that chooses to enroll in each one of them.

For people in the informal sector (or unemployed) and poor there is a subsidized scheme. Municipal mayors make contributions to the social health insurance institutions (EPS) that people choose. Part of the funding comes from a solidarity contribution (of the 12.5% payroll based contributions in the formal sector, 1.5% goes to this cross subsidy).

All insurers are obliged to offer the same benefit package, know as Mandatory Health Plan (the acronym in Spanish is POS). The average capitated rate is 182 US dollars per year in the Contributory Scheme and, 105 dollars in the subsidized one (Giedion and Panopolou, 2009). Supplemental voluntary insurance is allowed.

The POS includes those services delivered to individuals, including a preventive component (e.g. child vaccination, cervical cancer screening). Services delivered at the community level are

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1 Some of them are themselves providers (vertically integrated). A law in 2007 limited the extent to which they can integrate vertically.
managed, according to the law, in a separate plan under the responsibility of municipal authorities.

The following exhibit illustrates the flow of resources in the system.

**Financial Architecture**

- Contribution is 12.5% of salary or income
  - 4% by employee
  - 8.5% by employer
- Insurers receive a capitated payment
  - Adjusted by age, geographical distribution and sex
  - Does not depend on income
- Family is the enrollment unit

Implementation of the reform has been gradual. Universal enrollment is expected to be achieved in 2011. Structural informality in the labor market has undermined the contribution base for the system, so financing universal enrollment has meant a greater than expected effort for the public budget (Guerrero 2008).
The Benefits Package

At the outset of the reform, for fiscal and political reasons, it was decided that the subsidized scheme would have a lesser benefits package, which would be gradually equalized to that of the contributory scheme. Such equalization has been delayed for fiscal reasons, which has prompted new legal and judicial mandates for achieving it. A new government installed in 2010 has promised to do so by 2014.

Up to present the package in the subsidized scheme has covered primary care and low complexity interventions and a set of high complexity services for conditions that would otherwise cause catastrophic expenditures. It has, however, a “hole” for secondary level care. Since the latter services are not assumed by insurers, people must seek them at public hospitals, which have special funding for them, although the switching of provider compromises continuity of care.

After 15 years of implementation the country has achieved greater access and utilization of health services, particularly on the poor side of population. Gaps in access among wealth quintiles have been reduced across a wide set of services (Florez and Soto 2007). Enrollment in the social health insurance scheme has been shown to protect households against catastrophic expenditures (Giedion and Villar 2009). It was expected that efficiency would improve with competition, yet that remains to be proven. There are complaints about the complexity and transaction costs brought by the multiplicity of institutions.
The judiciary has become deeply involved in the health sector. Rulings have highlighted problems in the provision of services included in the package, like delays and denials. Judges have also pressed for the expansion of coverage within the package and, beyond that, ordered the provision of services not in the package at the taxpayer’s expense. The extent to which this has happened has lead to a financial crisis.

Cancer in the context of the Health System Reform

The reform has been implemented in the context of a growing NCD and cancer epidemic. According to the National Statistics Administrative Department, while in the 60s cancer was 3.7% of all mortality causes, in 2002 it was around 15%, placing in the third place after cardiovascular disease and external causes.

Cancer Incidence and Mortality in Colombia

Prior to the reform, most services for catastrophic illnesses were directly paid from out of pocket in public and private facilities, even while the government subsidized some public hospitals to cover vulnerable population’s health needs for these kinds of conditions. According to the World Health Organization, out of pocket expenditure in Colombia was approximately 44% of total private spending in 1993, the year the reform was approved.
Cancer in the basic package (nominal coverage)

In 1994, when the content of the package was first defined, cancer was classified as a catastrophic disease along with HIV/AIDS, chronic renal failure, transplants, genetic disorders and severe trauma. The latter means that for those conditions, certain treatments have to be covered in order to avoid out of pocket payments as much as possible. In 1995 coverage for high cost diseases like cancer was also included in the basic plan for the subsidized regime.

Complementarily, a regulation adopted in 2000\(^2\), established mandatory activities for early detection and induced demand for certain illnesses, and adopted guidelines for early detection and provision of services, among other diseases, for breast, cervical, prostate and colorectal cancers.

The basic package (the POS) covers surgery, chemotherapy, radiotherapy and common drugs, such as tamoxifen, doxorubicin and paclitaxel. This set of services has been gradually expanded. The treatment with linear accelerator for teletherapy was included in the package for both regimes in 2002. Treatment with zolendronic acid for cancer with hypercalcemia due to malignancy, multiple myeloma and bone metastases management was included in the package for both regimes in 2004. In 2005 colposcopy and cervical biopsy was added to the subsidized POS, as well as 16 new drugs in both regimens. Finally, in 2006 3 kinds of bisfosfonates were included in both packages for the treatment of some kinds of cancer and metastases.

Despite of the latter, there are still some important oncologic services that are excluded from the basic packages. Mamography is not included in the benefits package of the subsidized regime. Certain high cost drugs are excluded from both packages: trastuzumab, rituximab, leuprolide acetate, bicalutamide, imatinib and ondasetron.

Coverage of the publicly financed system is not limited to the package. Patients often challenge in courts the denial of services and drugs not included in the package, and judges usually grant the services at the expense of the public purse.

Effective coverage

Cancers with higher incidences in Colombia require early detection in order to define their prognosis, such as gastric and breast cancers. Screening tests have low coverage rates, especially in the subsidized regime population.

According to the National Health and Demography Survey, 99% of Colombian women among 18 and 69 years know what a smear test is. Around 90% of them had done at least one smear test up to 2010. Even though the figure is relatively high there is not a strong relationship between coverage of screening services and mortality rate due to cervical cancer, which remains high (2154 deaths in 2008 according to Globocan fast stats). Additionally, another study made in 4 different

\(^{2}\) Resolución 412.
Colombian departments showed that 49% of the smear tests taken were false negatives, confirming this test’s low sensitivity for cervical cancer early detection. Moreover, the same study revealed that 6 months after the diagnosis is made, 27% of patients with intraepithelial lesions don’t have a definite diagnosis through further examination such as colposcopy or biopsy and, in case they have one, they don’t have the appropriate treatment to manage it. This shows that the main bottlenecks in the case of cervical cancer are quality of screening and diagnosis, treatment and follow-up.

Breast cancer is the most frequent type of cancer among Colombian women. According to Globocan in 2008 there were 6,655 new breast cancer cases in the country, which accounted for 21.5% of all types of cancer among women. This type of cancer is the second cause of cancer deaths among women in Colombia; with increasing mortality rates every year. While in 2000, 7.5 of each 100,000 women died due to breast cancer, in 2007 this number increased to 9.6 for each 100,000.

One cause of the latter is the deficiency of early diagnosis for this type of cancer given that clinical breast examination is rarely performed and coverage of screening with mammography is low. 16% of Colombian women over 40 years of age report a mammography in the past 3 years, according to the DHS survey (Guerrero, Carrasquilla et al. 2010). This explains the fact that more than 77.8% of breast cancer patients consult after the symptoms appearance, when breast cancer has developed to advanced stages (Velásquez-De Charry, Carrasquilla et al. 2009).

Mammography is available in the mandatory benefits package for women over 50 years of age, but only those who belong to contributory regime. Women from subsidized regime don’t have access to this exam since it is not covered by subsidized POS.

There are also geographical disparities in access to prevention and care within the country. Specialized care is delivered mainly in large capital cities.

**Resource Availability**

There are oncologic services provided in 22 of 32 departments. The three biggest cities (Bogotá, Medellín and Cali) account for 27% of the national population and 52.2% of registered cancer providers in Colombia. Additionally, Colombia counts with 48 institutions that offer radiotherapy treatment. However, these centers are based in large cities, leaving a great part of the population without these services.
Table 1 Availability of radiotherapy machines by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th>Hospitals</th>
<th>Machines</th>
<th>Machines per 100.000 hab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazónica</td>
<td>1,036,800</td>
<td>0</td>
<td>0</td>
<td>0,00</td>
</tr>
<tr>
<td>Andina</td>
<td>32,198,467</td>
<td>33</td>
<td>63</td>
<td>0,20</td>
</tr>
<tr>
<td>Caribe</td>
<td>9,674,097</td>
<td>13</td>
<td>18</td>
<td>0,19</td>
</tr>
<tr>
<td>Insular</td>
<td>73,320</td>
<td>0</td>
<td>0</td>
<td>0,00</td>
</tr>
<tr>
<td>Orinoquía</td>
<td>1,499,885</td>
<td>2</td>
<td>2</td>
<td>0,13</td>
</tr>
<tr>
<td>Pacífica</td>
<td>1,025,637</td>
<td>0</td>
<td>0</td>
<td>0,00</td>
</tr>
<tr>
<td>Nacional</td>
<td>45,508,206</td>
<td>48</td>
<td>83</td>
<td>0,18</td>
</tr>
</tbody>
</table>

Financing

Revenue raising
Financial resources for cancer care come from the general financing mechanisms of the health system. According to the health ministry total health expenditure averaged 8.5% of GDP between 1993 and 2003. In the same period private and out-of-pocket expenditures decreased as a share of total health spending, while public and social security health spending increased. Public and social security health spending account for 36.6% and 44.5% of total health expenditure, according to the same source. The contributory regime is counted as social security, and the subsidized one as public.

Allocation
The main expenditure item in the social security spending the per capita payment to the social health insurance institutions (EPS), which in 2009 was on average 182 US$ per year in the contributory scheme. EPS pool these resources and spend them in the different diseases, including cancer, according to health needs and demand.

EPS that make part of ACEMI, an association of EPS with 86% of the enrollees in the contributory scheme, report in 2008 49,107 cases of chemotherapy and 11,268 of radiotherapy. Reported average costs by case are US$555 and US$1,276 respectively.

If all contributory scheme EPS had the same utilization rates than the ones in this sample, the total annual number of chemotherapy cases in such scheme would be 57,101. The figure for radiotherapy would be 13,102. The corresponding total costs would be US$31.5 million and US$16.6 million respectively. Other costs related to cancer, not included in these figures, are surgery and consultations.
The resources coming from the capitated payments that EPS allocate to cancer correspond mainly to services in the benefits package. However, very often EPS are obliged directly (or indirectly) by judges to grant services and drugs not in the package. The latter drugs are reimbursed to EPS separately, through an exceptional procedure. This expenditure item has grown very much in recent years. In 2009 the Colombian system thus spent US$23 million in trastuzumab, US$36 million in rituximab, US$20.3 million in bevacizumab, and US$40.3 in imatinib. Non of these drugs are in the benefits package.

**Risk Pooling**

The Colombian health system pools all contributions centrally and, to that extend, achieves and efficient pooling of financial risk across all population groups. Yet, in health systems with competing plans, there is the potential for risk selection on the part of insurers (Ellis and Van de Ven 1999). If this happens, patients with catastrophic illnesses tend to concentrate in one or a few insurers, usually public ones, since the private counterparts have stronger incentives to select patients.

One mechanism by which this is partially controlled is by introducing risk adjustment in the capitation formulas, which Colombia does in the contributory scheme (only). Yet even in the countries with the most sophisticated risk adjustment, other ex post resource redistribution mechanisms have been implemented in order to control risk adjustment (Ellis & Van de Ven 1999).

In past decade it became increasingly clear that catastrophic patients in Colombia were disproportionately concentrated in the main public insurer (the former National Social Security Institute). The three main conditions for which this was reported to happen were chronic renal failure, cancer and HIV/AIDS. The following exhibit illustrates the extent to which patients with renal failure concentrate in the main public plan (now called “nueva EPS”).
The concentration of high risk contributed to a financial crisis in the main public plan, which was eventually liquidated in 2007 and replaced by a new institution (“nueva EPS”).

After several attempts at correcting risk selection, in 2007 the government mandated the creation of the so called high cost sub-account (HCA), which aims to pool and redistribute risk for catastrophic conditions, using the resources already allocated to insurers by the system.

The HCA is managed collectively by all insurance funds from both RC and RS, under the oversight of government. After a successful pilot launched in 2008 that started operation focused on chronic renal failure\(^3\), additional high cost diseases have been considered to be managed through the HCA: Cervical, breast, stomach, colorectal and prostate cancers, acute lymphoid leukemia, acute myeloid leukemia, Hodgkin and no Hodgkin lymphomas, epilepsy, rheumatoid arthritis and HIV/AIDS. It is expected by 2011 to start risk pooling the population living with HIV/AIDS.

**Purchasing**

The central treasury of the health system (FOSYGA) pays social health insurance plans (EPS) by means of a risk adjusted capitation. Plans, in turn, pay providers of cancer care mainly on a on a fee for service basis. There have been innovations in the contracting of bundles of services and diagnostic related groups (DRGs) for other chronic conditions like AIDS, but not so much for

\(^3\) Resolution 321 of 2007.
cancer. Hospitals purchase in-patient medication from whole sale distributor. There is no centralized purchasing. For out-patient medication EPS have purchasing arrangements (some of them form pools), but there is no system wide centralized negotiation or purchasing either.

As noted earlier, patient claim judicially drugs not included in the package and judges tend to grant them. When this happens, plan (EPS) provide the drug and files for reimbursement at the central treasury (on a fee for service basis). This introduces a fundamental difference in the way the systems pays plans. Services in the package are paid through capitation, other services by fee for service. It is well known that the latter method of payment is associated with higher utilization rates.

The number of such claims for drugs outside the package (directly or indirectly granted by judges) has grown explosively. According to “La Tutela y el Derecho a la salud, periodo 2006-2008”, oncologic services are within the top 5 of services with the greatest number of judicial cases, as shown in table 1.

Table 1. Claimed treatments by specialty, 2006-2008.

<table>
<thead>
<tr>
<th>ESPECIALIDADES EN LAS QUE SE SOLICITAN TRATAMIENTOS</th>
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<tr>
<td>PERIODO</td>
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<td></td>
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<tr>
<td>2006</td>
</tr>
<tr>
<td>Solitudes</td>
</tr>
<tr>
<td>Oncología</td>
</tr>
<tr>
<td>Neurología</td>
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<tr>
<td>Ortopedia</td>
</tr>
<tr>
<td>Cardiología</td>
</tr>
<tr>
<td>Oftalmología</td>
</tr>
</tbody>
</table>

Source: “La tutela y el derecho a la salud, periodo 2006-2008”

Not surprisingly, the cost of non-package drugs, including those for cancer, has grown explosively and has contributed to the financial crisis of the system.

Lessons

1. A guaranteed benefits package is good, but not sufficient

Establishing guaranteed benefits packages is a step forward. These entitlements drive improvement in access as people become aware of their rights. In order for these improvements to materialize the necessary financing has to be assured, with permanent revenue sources.
Despite having a benefits package that included cancer from the outset, there remain gaps in access to services in Colombia. Some are related to the geographic distribution of human resources and infrastructure. Thus, complementary policies in this regard should be in place to assure more equitable access.

2. Incentives in the delivery model

Colombia has a benefits package that, nominally has relatively complete coverage. However, effective coverage is much lower. For example, many cancer cases that could have been treated successfully if detected early are being diagnosed too late. There are also quality problems in screening, diagnosis and treatment and follow up.

Not only resources, but also training and incentives for providers need to be improved in order to achieve better outcomes. These improvements in the delivery model are not achieved automatically by the mere existence of the package. Last, but not least, patient awareness and education contributes to better detection, delivery and outcomes.

3. Innovative purchasing

There is scope for improving outcomes by innovative ways of purchasing cancer care (e.g. by bundles of services, including performance related measures). Colombia has advanced on this route for other conditions, thought not much yet in the case of cancer.

One important lesson of this country case it that payment mechanisms need to be coherent. The combination of capitation for EPS for drugs and services in the basic package, and fee for service reimbursement to EPS for other drugs and services has lead to an imbalance in provision and chronic cost inflation in the system.

4. Risk selection

If the system allows for multiple social health insurance institutions and gives citizens the possibility of choosing or changing, risk selection can become a threat for the stability of the system. Well know mechanisms for avoiding this should be implemented.

5. Evidence base for the content of the benefits package

Not being able to set limits to the list of services and drugs that are publicly funded compromises both sustainability and equity. Resources that could save more lives if allocated to early detection can be diverted to costly treatments with less health benefits. This highlights the importance of having an evidence base for deciding the content of the packages.
References


The Global Task Force – convened in November 2009 by the Harvard Global Equity Initiative, Harvard Medical School, Harvard School of Public Health, and the Dana-Farber Cancer Institute – is comprised of leaders from the global health and cancer care communities, and is dedicated to the development, implementation and evaluation of strategies to advance the agenda of Expanded Access to Cancer Care and Control in Developing Countries

The Harvard Global Equity Initiative (HGEI) is an interfaculty research program at Harvard University devoted to promoting equitable development with a particular focus on the dimension of health and serves as the Secretariat of the GTF.CCC

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