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Health Prioritization: The Case Of Chile

A reform initiative has established fifty-six health interventions for which coverage and treatment are guaranteed to all.

by Verónica Vargas and Sergio Poblete

ABSTRACT: This paper examines the introduction of a prioritized list of fifty-six health conditions in Chile, for which access to treatment is guaranteed. This is an important health reform issue, and the discussion of Chile’s rich and complex approach may benefit other countries. Conditions on the list were selected using multiple criteria: burden of disease, inequality, high costs, social preferences, rule of rescue, and cost-effectiveness. The dominant criteria were high burden of disease and social preferences. Cost-effectiveness was introduced after the fact to identify effective treatments at a cost that the country could afford. [Health Affairs 27, no. 3 (2008): 782–792; 10.1377/hlthaff.27.3.782]

Chile’s health system is a two-tier system. One tier is composed of public health insurance (FONASA), covering about 69 percent of the population; the other is private insurance plans, called ISAPREs, covering 17 percent of the population. The remaining population segment is affiliated with other public agencies (such as Military Health Services) or is without coverage. The Ministry of Health is the entity responsible for the design of policies and programs; it also provides public health, secondary, and tertiary services. Most primary health care is provided through the municipal system. The ISAPREs provide outpatient and inpatient services through their own clinics and hospitals or by contracting with public or private facilities. Regulation of both the private and public sectors is undertaken by the superintendent of health.

Chile scores favorably on health indicators. Life expectancy at birth is eighty years for women and seventy-three years for men, and the infant mortality rate is 8.6 per 1,000 live births. This success largely stems from good socioeconomic living conditions and strong efforts in preventive care. The epidemiological profile has changed significantly, evolving from communicable diseases to an increase in non-communicable and chronic diseases. This transition is associated with the aging of the population, urbanization, deterioration of the environment, and lifestyle factors.

In spite of good general health indicators, morbidity and mortality vary greatly

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across socioeconomic groups. This suggests that programs and policies have not been effective in benefiting Chile’s disadvantaged populations.  

**The Health Reform**

An ambitious health reform was undertaken in the early 2000s, to address, among other things, inequalities. A Health Reform Commission was convened, responsible for designing the reform and establishing its legislative agenda.  

An important part of the reform was the introduction of the plan called Explicit Guarantees and Universal Access (AUGE), which comprises interventions to treat forty-nine health conditions, plus seven other treatments considered priorities. Legislation was passed guaranteeing all citizens access to the treatments detailed in AUGE. Prior to the reform, all types of health services were provided in the public sector, but with limited access, quality, and financial protection.  

Private insurance resulted in enormous variation among health plans based on actuarial pricing. The reform established, for the first time, a guaranteed basic, uniform benefit plan, which applied equally to beneficiaries of public and private insurers, with financial protection and “fast-track” access. Coverage for the fifty-six conditions was implemented gradually during the period 2005–2007, accompanied by an increase in financial allocations within a budget ceiling.

Health conditions were selected from two main areas. First, priorities were introduced by the Ministry of Health in early 2002 with the definition of National Health Objectives for 2000–2010. The main objectives were improving health coverage, confronting the challenges resulting from aging, decreasing inequalities in health care, and respecting people’s preferences.  

Second, during 1999–2003, a Catastrophic Care Program was implemented by the public insurer (FONASA). It included about twenty health benefits that were costly, because they required highly specialized professionals and technology, negatively affected public hospitals’ financial standing, and increased patient waiting lists.

- **The algorithm of prioritization.** The departure point for the design of the prioritization plan included all interventions that were provided by the system at that time and that constituted the default health plan. An algorithm to provide analytical support to the discussion on priorities was presented. It can be summarized as follows: (1) indicators measuring the burden of disease of different conditions: incidence, prevalence, and mortality rate; (2) inequity measured by gaps in mortality across socioeconomic groups; (3) effectiveness of different treatments—health conditions were stratified into high, medium, and low treatment effectiveness, and those conditions with high or medium treatment effectiveness were preselected; (4) evaluation of the capacity of public and private systems to deliver the services—the group of conditions for which there were enough available resources was preselected; (5) estimation of cost per case and total cost per condition based on treatment protocols suggested by experts and national scientific associations; (6) high-cost conditions—identified as those with annual treatment costs greater than or
equal to the annual minimum wage (US$2,697); and (7) people’s preferences were elicited, such that reformers could use the information and prevent special-interest groups from defining the health plan. From the beginning of the reform, there was interest in emphasizing social preferences, seeking to counterbalance the power of special-interest groups. Social consensus was sought, and discussion forums among key stakeholders were held to discuss the health care reform.

The algorithm of prioritization incorporated most of the variables used in the Health Objectives definition, except cost-effectiveness and rule of rescue. It did not incorporate gender inequality, which appeared subsequently in the discussion.

Analysis of the criteria used in the prioritization. Here we evaluate the criteria that were most relevant in the selection of the health conditions and treatments. A comprehensive review and analysis of documents produced during the period 1996–2006, including background papers on the definition of Health Objectives and reform documents, was performed. The variables included in the algorithm and others presented in relevant papers were regrouped into burden of disease, socioeconomic and gender inequality, social preferences, rule of rescue, high cost, and cost-effectiveness. The discussion in the literature tends to focus on a single criterion for prioritization, but there are new arguments for using multicriteria analysis.

The fifty-six conditions were evaluated for the presence or absence of characteristics associated with above-mentioned variables (Exhibit 1). The degree of association between the variables was estimated using Spearman’s rho coefficient.

Study Results

From an institutional perspective, about forty-two of the health problems that are included in the plan were also part of the Health Objectives 2000–2010 launched in the early 2000s, and twenty-six were part of the Catastrophic Care Program implemented by FONASA during 1999–2003 (Exhibit 2). After reviewing the studies that shaped the design of the AUGE plan, we found that thirty-five of the conditions are associated with a high burden of disease; thirty-two, with gender or socioeconomic inequality, or both; thirty, with high cost; thirty-eight, with social preferences; twenty-five, with the rule of rescue; and thirty-three, with cost-effectiveness.

Burden of disease. Burden-of-disease analysis measures ill health in terms of morbidity and mortality, indicating the most important disease groups in a country. It is defined as the total years of healthy life lost as a result of premature mortality and disability and is often measured in disability-adjusted life-years (DALYs).

To evaluate whether the AUGE plan considers the health problems with the highest burden of disease, the 1993 study by the Ministry of Health was reviewed. Health conditions representing at least 1 percent of the burden were chosen as having high burden of disease. Conditions above the 1 percent cutoff point made up the top 69 percent of the total burden. Of these conditions, twenty-
one were included in the AUGE plan. These twenty-one conditions represented 50 percent of total DALYs reported by the study and included cancers, congenital diseases, cardiovascular diseases, diabetes, involuntary accidents, some mental disorders, neurological alterations, loss of sight and hearing, oral health problems, and acute respiratory infections.

However, this study was performed more than a decade ago and might not accurately reflect the current health situation. More recent information sources, such as the 2000 Quality of Life Survey (QLS) and the 2003 National Health Survey (NHS), were therefore reviewed. The QLS (N = 6,000) investigated people’s own perceptions regarding their health and confirmed the importance of chronic

EXHIBIT 1
Number Of Criteria (From 1 To 9) That Each Of The 56 Priority Diseases And Treatments Fulfills, Chile, 2005–2007

<table>
<thead>
<tr>
<th>Condition</th>
<th>No. of conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery: pain relief in labor</td>
<td>3</td>
</tr>
<tr>
<td>Newborn survival</td>
<td>7</td>
</tr>
<tr>
<td>Premature baby</td>
<td>7</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes</td>
<td>6</td>
</tr>
<tr>
<td>Type 1</td>
<td>5</td>
</tr>
<tr>
<td>Type 2</td>
<td>5</td>
</tr>
<tr>
<td>Retinopathy</td>
<td>5</td>
</tr>
<tr>
<td>Respiratory diseases</td>
<td>4</td>
</tr>
<tr>
<td>Pneumonia, elderly</td>
<td>4</td>
</tr>
<tr>
<td>Asthma</td>
<td>3</td>
</tr>
<tr>
<td>Acute infection, &gt;15 years</td>
<td>4</td>
</tr>
<tr>
<td>COPD</td>
<td>5</td>
</tr>
<tr>
<td>Oral health care</td>
<td>5</td>
</tr>
<tr>
<td>Elderly</td>
<td>3</td>
</tr>
<tr>
<td>Children &lt;6 years</td>
<td>3</td>
</tr>
<tr>
<td>Emergency</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion</th>
<th>No. of conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health objectives</td>
<td>42</td>
</tr>
<tr>
<td>2. Catastrophic program</td>
<td>26</td>
</tr>
<tr>
<td>3. Disease burden</td>
<td>35</td>
</tr>
<tr>
<td>4. Socioeconomic inequality</td>
<td>25</td>
</tr>
<tr>
<td>5. Gender inequality</td>
<td>18</td>
</tr>
</tbody>
</table>

SOURCE: Authors’ calculations based on Appendix Exhibit 1, available online at http://content.healthaffairs.org/cgi/content/full/27/3/782/DC1.

NOTES: The nine criteria are listed in Exhibit 2. COPD is chronic obstructive pulmonary disease.

EXHIBIT 2
Number Of Conditions That Fulfill Each Of Nine Criteria, Chile, 2005–2007

<table>
<thead>
<tr>
<th>Criterion</th>
<th>No. of conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health objectives</td>
<td>6</td>
</tr>
<tr>
<td>2. Catastrophic program</td>
<td>7</td>
</tr>
<tr>
<td>3. Disease burden</td>
<td>5</td>
</tr>
<tr>
<td>4. Socioeconomic inequality</td>
<td>1</td>
</tr>
<tr>
<td>5. Gender inequality</td>
<td>8</td>
</tr>
</tbody>
</table>

SOURCE: Authors’ calculations based on Appendix Exhibit 1, available online at http://content.healthaffairs.org/cgi/content/full/27/3/782/DC1.
diseases and diseases associated with unhealthy lifestyles, such as cardiovascular conditions and diabetes. Vision loss, astigmatism, and nearsightedness represented the second most frequent chronic disease at the national level after hypertension. Since no estimation of the burden of disease exists for vision problems, its inclusion in the AUGE plan was justified by its high declared prevalence. The NHS included a voluntary health exam performed on a sample of 3,619 people age seventeen and older. Results confirmed the priority of cardiovascular diseases. More than half of Chile's adult population had high risk for cardiovascular disease, accompanied by high rates of hypertension, overweight/obesity, hyperlipidemia, and nicotine dependency. Other diseases with high prevalence rates were depression, kidney disease, and chronic respiratory diseases, each affecting one in five adults. Thus, approximately thirty-five (63 percent) of the conditions selected in the AUGE plan presented high burden of disease or high prevalence, or both.

Inequality. Average improvement in health status is one indicator of a well-functioning health system; another is the distribution of health improvements among social groups. Health inequality refers to increased morbidity and mortality among those with lower educational or socioeconomic levels. It also includes sex inequalities (the differences between men and women that are primarily biological in nature) as well as gender inequalities (the differences that are primarily social or associated to culture, religious beliefs, and norms regarding the sexes).

Health indicators by socioeconomic, sex, and gender groups showed much variability, which suggests that health achievements have not benefited the disadvantaged. For that reason, the designers of the AUGE plan introduced the equity criterion. Twenty-five health conditions that presented greater mortality and prevalence gaps between socioeconomic groups were selected, along with seven other conditions associated with gender and sex inequalities.

Regarding socioeconomic inequalities, many studies show that people of low socioeconomic status, whether measured in terms of income, educational level, or occupational status, have higher prevalence of many “killer” conditions and higher premature mortality. For example, the infant mortality rate for respiratory infections is 14.3 times greater in children of mothers with basic education compared with those who have a high school or university education. Cancer mortality rates are higher in low socioeconomic groups; this is the case for leukemia and for cervical, gastric, lymphoma, gall bladder, and prostate cancers. According to the NHS, the prevalence of hypertension and diabetes is higher among those with less education. Finally, there was inequality in providing analgesia during delivery. In the public sector, only 25–30 percent of women received epidural analgesia, in sharp contrast to the private sector.

Oral health also presents socioeconomic inequalities. According to the NHS, adults from high and low socioeconomic groups have 49 percent and 18 percent of their teeth, respectively. There is also evidence that the following present mortality or prevalence gaps between the socioeconomic groups: alcohol and drug de-
pendency, cranium-brain trauma, nonrefractory epilepsy, hearing impairment in the elderly, chronic renal insufficiency, and cardiovascular diseases (cerebral vascular accident, congenital heart disease, arterial hypertension, and acute myocardial infarction).24

Concerning gender inequality, burden of disease associated with biological differences is distinguished from burden of disease predominantly resulting from sociocultural factors. Severe dental problems are more prevalent among women because of limited access to services. A total of 7.2 percent of women were toothless, while the same condition in men reached 3.2 percent. Chronic diseases affect women to a greater degree because of women’s greater longevity. According to the QLS, hypertension was twice as prevalent in women, arthritis was three times as prevalent, and degenerative osteoarthritis was four times as prevalent. Also, prevalence of cataracts and refractive errors was higher in women. In addition, depression affected women to a greater degree, where both sex and gender play a role.25

In the interaction of biological and sociocultural variables, men have a higher prevalence for many “killer” conditions. Men ages 35–59 have eleven times greater mortality by HIV/AIDS than women. Acute myocardial infarction also generates greater mortality in men, and there is a significant negative relation between income level and mortality rate as a result of violence and trauma.26

According to this evidence, 45 percent of the conditions selected in the AUGE plan presented socioeconomic inequalities, and 32 percent could be associated with gender and sex inequalities.

Social preferences and the rule of rescue. In the process of designing the AUGE plan, a perspective that gained importance was the introduction of social preferences, using qualitative and quantitative methods. Two studies were designed to elicit people’s preferences. First, as a background study for developing the Health Objectives, a qualitative study using focus-group interviews was carried out in 1996. A second survey was performed in May 2001. The objective of both was to determine the health problems that people deemed most relevant and the age groups that provoked greater support.27

According to the qualitative study, the rule of rescue was a significant criterion. This refers to the urgency of saving the life of an identifiable individual, who is at risk of death, without considering factors such as success or costs involved.28 Subsequently, the 2001 survey identified the three most important problems that should be part of the AUGE plan: cancers and palliative care for terminal cases, HIV/AIDS, and diabetes. On the other hand, according to the same survey, childhood and, to a lesser extent, old age were considered the stages of life during which there is greater need for social protection and health care. Consistent with these findings, the AUGE plan includes ten types of cancers, both Type 1 and Type 2 diabetes, and the condition of diabetic retinopathy, specifically. Approximately eleven health conditions explicitly favor children and the elderly.

In summary, thirty-eight (68 percent) health conditions were explicitly de-
clared in the qualitative study or surveys, or both, or implicitly through the priority given to childhood and elderly adult illnesses. Out this group, twenty-five (45 percent) conditions also satisfy the rule of rescue.

- **High cost.** Another criterion used in the selection of conditions for the AUGE plan was high cost. High-cost treatments lead to catastrophic expenses if households have to pay a percentage of their cost, an amount that may be a large proportion of households' disposable income. There is no consensus in defining the proportion of household expenses that is considered catastrophic—it varies from 10 percent to 50 percent of net income, minus food expenses. In Chile, high medical expenditures were the second most frequent cause of shock to household income.

In the process of designing and implementing the AUGE plan, various studies on cost per patient and total cost per condition were performed. These were done to reflect the refining of protocols and treatments being developed, as well as the revision of total cases as better data from the NHS become available. The algorithm that selected high-cost conditions defined them as having annual treatment costs of US$2,697 or more, but the cutoff point used was lower, about US$1,900. According to the data from the most recent cost study, thirty interventions (54 percent) exceed the benchmark, including treatment for cancers, accidents, and cardiovascular diseases. The most expensive condition, bone marrow transplants for children with leukemia, cost US$36,622 per case. It is necessary to highlight that twenty conditions in the high-cost group were also part of the Catastrophic Care Program administered by FONASA.

- **Effectiveness and cost-effectiveness.** Most conditions selected have a highly or moderately effective treatment available. Guidelines and treatment protocols were defined by experts and national scientific associations. The use of cost-effectiveness analysis, or the notion that effective interventions should also have the greatest impact by unit of investment, was not part of the prioritization algorithm because it is a property associated with treatments, which represented works in progress. However, cost-effectiveness was part of the background studies of the Health Objectives. The cost-effectiveness study completed in 1999 considers twenty-one treatments, associated with eleven health problems. All treatments deemed cost-effective in that study became part of the AUGE plan, with the exception of tuberculosis, which was excluded because a successful public health program addressing this condition already existed. Other health problems were excluded because, despite having high burden of disease, there were no cost-effective (such as glaucoma) or effective (Alzheimer's disease, cirrhosis of the liver, and lung cancer) interventions available.

An ex post analysis using cost-effectiveness study results reported in the literature was performed, to validate the selection. Results revealed that in 59 percent (thirty-three) of the conditions, cost-effectiveness interventions were selected. For the remaining condition treatments, no cost-effectiveness studies were found.

- **The association between variables.** Of the fifty-six health conditions and
treatments in the AUGE plan, more than half fulfill the criteria of having a high burden of disease or preference of the public, or belong to the high-cost group. Ten conditions satisfy these three criteria and are also associated with a cost-effective treatment, therefore having the highest legitimacy. Spearman’s rho correlation coefficient was used to identify the key variables and analyze the relationship between the variables (Exhibit 3).

It is possible to identify two distinct institutional perspectives that provide the framework for the prioritization process: the Health Objectives 2000–2010 from the Ministry of Health, and the Catastrophic Care Program from FONASA, with a negative nonsignificant coefficient ($rs = -0.041$).

The prioritized conditions of the Health Objectives are positively and significantly associated to conditions with high burden of disease ($rs = 0.405$, $p < 0.01$), and to diseases linked with low socioeconomic status ($rs = 0.270$, $p < 0.05$). Burden of disease is strongly correlated with inequality on health status ($rs = 0.473$, $p < 0.01$) and the criterion of cost-effectiveness ($rs = 0.403$, $p < 0.01$). Using burden of disease can capture some of the importance that was given to inequality because of the positive and significant association between the two. The same applies for cost-effectiveness. However, there may be a risk of not addressing inequality appropriately if only burden of disease is used. Regarding gender inequality, the variable is not associated with any other. Therefore, gender inequality should be explicitly included if it is a key objective.

The group of prioritized health conditions that originated with FONASA is strongly associated with the rule of rescue ($rs = 0.532$, $p < 0.01$), high-cost conditions ($rs = 0.436$, $p < 0.01$), and social preferences ($rs = 0.334$, $p < 0.05$). The association of social preferences and the rule of rescue reached a maximum of $rs = 0.618$, 

### EXHIBIT 3
**Spearman’s Rho Coefficients Between Variables Used In The Prioritization Process, Chile, 2005–2007**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health objectives (1)</td>
<td>1</td>
<td>-0.041</td>
<td>0.405b</td>
<td>0.270c</td>
<td>0.221</td>
<td>0.221</td>
<td>0.187</td>
<td>0.041</td>
<td>0.189</td>
</tr>
<tr>
<td>Catastrophic program (2)</td>
<td>1</td>
<td>-0.166</td>
<td>-0.188</td>
<td>-0.104</td>
<td>0.334b</td>
<td>0.532b</td>
<td>0.436b</td>
<td>0.049</td>
<td></td>
</tr>
<tr>
<td>Burden of disease (3)</td>
<td>1</td>
<td>0.473b</td>
<td>0.217</td>
<td>0.020</td>
<td>0.028</td>
<td>-0.203</td>
<td>0.403b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socioeconomic inequality (4)</td>
<td>1</td>
<td>0.228</td>
<td>0.157</td>
<td>0.133</td>
<td>-0.172</td>
<td>0.166</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender inequality (5)</td>
<td>1</td>
<td>-0.263</td>
<td>-0.003</td>
<td>-0.023</td>
<td>0.186</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social preference (6)</td>
<td>1</td>
<td>0.618b</td>
<td>0.203</td>
<td>-0.031</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of rescue (7)</td>
<td>1</td>
<td>0.476b</td>
<td>0.093</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High cost (8)</td>
<td>1</td>
<td>0.023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost-effectiveness (9)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOURCE:** Coefficients based on data from Appendix Exhibit 1, available online at http://content.healthaffairs.org/cgi/content/full/27/3/782/DC1.

*See left-hand column for key to numbers.

$^b$Correlation is significant at the 0.01 level (2-tailed).

$^c$Correlation is significant at the 0.05 level (2-tailed).
where social preference captures all conditions that fulfill the rule of rescue. In contrast, social preferences and high cost have a positive but not significant association ($rs = 0.203$). The results suggest that it is not necessary to use all four conditions to prioritize, but merely one or two according to the objectives. From a policy perspective, introducing variables that are highly associated with one another limits the number of conditions to be selected.

Sensitivity analysis to test changes when using few criteria was performed. Burden of diseases captures 63 percent of all conditions; adding social preferences raised this to 88 percent; high cost, to 96 percent; and, finally, inequality completed the fifty-six conditions. Alternatively, adding inequality first raised this to 91 percent, while high cost completed the set of fifty-six conditions.

### Conclusions

Few countries have conducted a prioritization process as thorough as Chile’s, and there is very little empirical evidence documenting such cases. Our findings raise important issues for policymakers. First, selection of the conditions was a multicriterion decision-making process that included apparently contradictory criteria: burden of disease and social preferences, cost-effectiveness and high costs, and rule of rescue. Contradictions were apparent because the coefficients were around zero and not significant. From a policy perspective, it was necessary to explicitly include all of the proposed criteria, to make the prioritization exercise socially acceptable.

Second, not all criteria were equally important. Two dominant criteria capture 88 percent of the selected conditions and are highly and positive associated with the others: high burden of disease and social preferences. The findings suggest that the prioritization process could be simplified and might begin with only two distinct lines of criteria, one related to burden of disease (mortality, morbidity, and socioeconomic inequality) and the other to social preferences (including high cost and the rule of rescue).

Third, if reducing inequality through prioritization is a main policy goal, the results suggest the need to include the criteria explicitly, since burden of disease and social preferences cannot capture very well socioeconomic inequality and to an even lesser extent, gender inequality.

Fourth, in contrast to recommendations found in the literature, the criterion of cost-effectiveness was introduced to a limited number of conditions in a first phase, as part of defining health objectives, and at the last stage when identifying an effective treatment for the selected conditions within the limits of the national health budget.

The results highlight the importance of introducing the criterion of social preference in the prioritization process, in addition to the widely used burden of disease, and the use a posteriori of the cost-effectiveness criterion when selecting alternative treatments.
An earlier version of this paper was presented at the International Health Economics Association (IHEA) meeting in Copenhagen, Denmark, July 2007. The authors are grateful to Philip Musgrove, who provided comments on an earlier draft; to two anonymous reviewers who provided important insights; and to Marisol Concha and Rafael Urriola. The views expressed in this paper are the authors’ own and do not represent an official opinion.

NOTES
1. Public health is financed through the contributions of affiliates, 7 percent of taxable income, and with resources originating from general taxes.
10. Regarding system capacity, FONASA postulated that the health problems with limited services were depression, schizophrenia, severe burns, degenerative osteoarthritis, diabetic retinopathy, multiple traumas, strabismus, rheumatoid arthritis, benign prostatic hyperplasia, ocular trauma, alcohol and drug dependency, retinal detachment, lumbar disc hernia, and accidents that require emergency care.
15. M. Concha et al., La Carga de Enfermedad en Chile, March 1996, http://epi.minsal.cl/epi/html/sedesalud/carga/Inflin-carga-enf.pdf (accessed 4 October 2007). Some health conditions with high prevalence were excluded because of lack of information: dermatological diseases, lumbago, appendicitis, and vascular diseases. Obesity was excluded because, as a risk factor, it should be addressed with a public health intervention. Finally, involuntary accidents with a high burden of disease were excluded.
20. R. Hollstein et al., “Desigualdades Sociales y Salud: Nivel Socioeconómico y Mortalidad Infantil en Chile:


27. C. Ferreccio and I. Agurto, Estudio Priorización de Inversiones en Salud (Santiago: Ministerio de Salud, 1996) and Feedback Consultores, Resultados Encuesta en Salud (Santiago: Feedback Consultores, May 2001). The sample included men and women older than age twenty-five, representing ±75 percent of the population, including urban/rural areas (N = 5,600). A third survey conducted in 2005 was excluded from this study because it was restricted to AUGE conditions to be prioritized in its implementation.

28. J. Richardson and J. Mackie, “Rule of Rescue,” Social Science 56, no. 12 (2003): 2407–2412. The rule of rescue can also be applied to patients who cannot avoid death. In this case, the objective would be to avoid pain and suffering.


31. On 29 November 2006, the exchange rate was 559.77 Chilean pesos for one U.S. dollar. The annual minimum wage was the benchmark for defining financial protection: beneficiaries of the public system earning less than the minimum wage were exempt from copayments; for beneficiaries earning between the minimum wage and 1.46 times its value (US$223.30–US$303.69), the copayment was limited to 12.3 percent of their annual salary; for beneficiaries with a monthly salary greater than US$303.70, the limit was 16.9 percent, and for private insurance beneficiaries, 23 percent. These ranges are located at the lower boundary of what the literature defines as catastrophic expenditures.

32. Costs estimates are from R. Bitrán et al., “Verificación del Costo Esperado por Beneficiario del Conjunto Priorizado de Problemas de Salud con Garantías Explicitas” (Santiago: Ministerio de Salud, 2006).

33. The Program for Catastrophic Health Care of public insurance covered conditions whose costs varied between US$85.74 (pain relief) and US$36,622.18 (childhood cancer). Liver transplant is the only health condition from the program not included in the AUGE plan.


38. L. Hernández, “Costo-Efectividad de los Tratamientos con Garantías Explicitas: Revisión Bibliográfica” (Unpublished manuscript, Alberto Hurtado University, 2006).