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Lessons from the Chilean Earthquake: How a Human Rights Framework Facilitates Disaster Response

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Abstract

The earthquake of 2010 in Chile holds important lessons about how a rights-based public health system can guide disaster response to protect vulnerable populations. This article tells the story of Chile Grows With You (Chile Crece Contigo), an intersectoral system created three years before the earthquake for protection of child rights and development, and its role in the disaster response. The creation of Chile Grows With You with an explicit rights-oriented mandate established intersectoral mechanisms, relationships, and common understanding between governmental groups at the national and local levels. After the earthquake, Chile Grows With You organized its activities according to its founding principles: it provided universal access and support for all Chilean children, with special attention and services for those at greatest risk. This tiered approach involved public health and education materials for all children and families; epidemiologic data for local planners about children in their municipalities at-risk before the earthquake; and an instrument developed to assist in the assessment and intervention of children put at risk by the earthquake. This disaster response illustrates how a rights-based framework defined and operationalized in times of stability facilitated organization, prioritization, and sustained action to protect and support children and families in the acute aftermath of the earthquake, despite a change in government from a left-wing to a right-wing president, and into the early recovery period.

Introduction

The earthquake that shook Chile on February 27, 2010 occurred only 46 days after the quake in Haiti, and was 500 times more powerful.[1] Why then were the damage and loss of life in Haiti so much worse? Chile's government proved more resilient not only in its physical infrastructure but also because of preexisting programs to operationalize a commitment to human rights. This commitment had instituted policies to ensure health, housing, and other basic needs, informing and facilitating the government's disaster response.

This article tells the story of Chile Grows with You (Chile Crece Contigo, hereafter referred to as ChCC), the country's intersectoral, interdisciplinary early childhood development system, which was designed to protect child rights, support child development, and promote equity.[2] Amid destruction, displacement, and unrest, ChCC responded with a rights-based approach focused on the health and well-being of all children, with priority on the most vulnerable children, including populations at-risk before the earthquake as well as those children most affected by the earthquake. It illustrates how a rights-based framework defined and operationalized in times of stability facilitated organization, prioritization, and sustained action intended to protect and support children and families in the acute aftermath of the disaster, despite a change in government from a left-wing to a right-wing president, and into the early recovery period.

I. Background

When Chile joined the Organization for Economic Co-operation and Development in 2009, it was the culmination of a 40-year national journey from poverty to relative affluence.[3] Between 1970 and 2000, the gross domestic product (GDP) quadrupled, maternal mortality fell from 17.2 to 2.9 deaths per 10,000 women, infant mortality declined from 82.2 to 8.9 deaths per 1,000 live births, and life expectancy at birth extended from 61.5 to 77 years.[4] As the economy grew, however, inequality increased more in Chile than in any other Latin American country. Forty percent of the population now controls less than 10% of the GDP, and the strongest predictor of socioeconomic status for Chilean adults is their socioeconomic status at birth.[5] Poor Chilean children have lower preschool enrollment rates and smaller vocabularies than their Latin American peers.[6] In 2003, Chile ranked 14th in the world for inequality, as measured by Gini index.[7] In brief, even in the setting of impressive economic performance and public commitment to improving equity, poor Chilean children were at significant disadvantage before the fifth-most-powerful earthquake in history shook six of Chile's 15 regions.

The earthquake on February 27

On February 27, 2010 at 3:34 a.m., an earthquake measuring 8.8 on the Richter scale and lasting 90 seconds struck Chile. Its epicenter was about 100 km from Concepción, the capital of Region IX, and the impact was felt across 630 km. Geologists reported that the earthquake was so strong that it moved the Earth on its axis, shortening the day by 1.26 microseconds.[8]

While the earthquake caused significant damage, the ensuing tsunami accounts for most of the lives lost. Less than 20 minutes after the earthquake, waves up to 12 meters high inundated a number of coastal towns.[9] The early warning system was plagued by communication problems, with the first alert at 3:55 am arriving 21 minutes after the first wave. Some towns reported that they never received a warning.[10] According to experts, the warning should have been issued within 10 minutes of the initial quake.

President Michelle Bachelet immediately declared a national emergency, and the following day she declared a state of catastrophe in two provinces. She did not accept offers of international aid for two days, citing Chile's relatively strong domestic resources and human capacity and a reluctance to siphon international resources from Haiti.[11] After an

outbreak of looting, President Bachelet dispatched 10,000 troops to the affected zones to restore order and deliver basic supplies. She implemented a military curfew for the first time since the end of the country's 17-year military dictatorship in 1990.[12] The magnitude of the disaster soon became apparent. More than 370,000 homes were damaged and 81,444 were completely destroyed.[13] Strict building codes helped to limit fatalities to 521, but more than 12,000 people were injured, 800,000 displaced, and two million affected.[14] Medical facilities were ravaged: 71% (133) of the country's hospitals were damaged, with 17 classified as completely inoperable and 62 as seriously damaged.[15] More than 20% of the regions' hospital beds were lost.[16] As need for medical services rose, damage to roads complicated and compromised delivery of medical supplies.

The government, local, and international non-government organizations built more than 4,500 makeshift homes in 107 internally displaced person (IDP) camps.[17] The government created the Village Program (Programa Aldeas) and charged the Ministry of Planning (MIDEPLAN) with construction of temporary housing, camp oversight and administration, including hygiene and sanitation, citizen participation, access to healthcare, and security and safe spaces for children and senior citizens.[18]

Responding to the disaster

The General Health Care Plan in Emergencies and Disasters (Plan General de Atención Sanitaria en Emergencias y Desastres), developed after the eruption of volcano Chaitén in 2008, focused the disaster response by the Ministry of Health (Ministerio de Salud, hereafter referred to as MINSAL) on patient care and public health. To ensure patient care, teams evaluated the healthcare infrastructure and human resources. To provide for public health, MINSAL developed the Public Health Plan to Confront the Disaster Situation in the first week after the earthquake, which prioritized potable water, sanitation, and epidemiological monitoring in the initial response period.

The plan also anticipated a transition to early recovery: "[A]fter sudden-impact disasters like the earthquake and tsunami…the pattern of health care needs in the population changes rapidly, from relief and wound care, acute care patients and patients with exacerbated chronic conditions to the maintenance of maternal and pediatric care."[19] Such a transition was natural for Chile in 2010: over the preceding three years, officials had built the landmark early childhood development system ChCC, and along with it, intersectoral relationships, infrastructure, and a network linking the institutions that provide services for children — including early education (Junta Nacional de Jardines Infantiles, JUNJI, and Fundacion INTEGRA of the Ministry of Education, MINEDUC), social protection (MIDEPLAN), and health (MINSAL). Over the same time period, MINSAL had increased attention to mental health. ChCC participated in the interministerial National Committee for Mental Health in Emergencies and Disasters (Comité Nacional de Salud Mental en Emergencias y Desastres), which was activated by the earthquake, and helped the group to conceptualize the populations' needs and to devise a strategy to fulfill them.

Building on its national intersectoral network, its rights-based orientation, and MINSAL's focus on mental health, ChCC developed a tiered response to the disaster, incorporating population-wide education messages, informational materials for caregivers and mental health volunteers, epidemiologic data to help target services, and a child assessment tool. All of this was possible because of ChCC's history.

II. ChCC: A rights-based system for protecting early childhood development

As the United Nations emphasizes, a human rights-based approach to policymaking goes well beyond programs which may incidentally contribute to the realization of human rights. [18a] The approach calls for programs that have mechanisms for assessing people's human rights claims; for evaluating their ability to

claim those rights; for reviewing the corresponding obligations of the state; and for analyzing the "immediate, underlying, and structural causes when rights are not realized." Programs should monitor and evaluate the effect of their activity on human rights standards and principles. Finally, they should design their programming according to the recommendations of international human rights bodies and mechanisms."[19a]

On taking office in 2006, President Michelle Bachelet—a trained pediatrician—issued Supreme Decree No. 072, requiring the presiding government to "implement a system of child protection, to equalize opportunities for development of Chilean children from pregnancy and until the end of the first cycle of basic education regardless of their social origin, gender, household composition, or any other potential source of inequity."[20] This mandate echoed language from the United Nations Convention on the Rights of the Child (CRC), which Chile ratified in 1990. The CRC guaranteed access to universal support systems, such as healthcare and early care and education, an appropriate family environment, and equality of opportunity regardless of socioeconomic background.[21] Article 24 details the child's right to health care: "State Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. State Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services."[22] Article 28 recognizes the right of the child to education and the importance of realizing this right progressively with an emphasis on equal opportunity for all children.[23] According to Article 29, education should be directed toward "development of the child's personality, talents and mental and physical abilities to their fullest potential."[24]

To operationalize the mandate set forth in Supreme Decree No. 072, President Bachelet created a Presidential Advisory Council, which conducted public consultation, national hearings, and deliberation with experts. The resulting report, The Presidential Advisory Council's Proposals for Reform of Childhood Policy (Propuestas del Consejo Asesor Presidencial para la Reforma de las Políticas de Infancia), cite the CRC and use the language of rights to argue for an Integrated System for the Protection of Early Childhood. Consequently, ChCC was created.

ChCC, which began offering services in 2007, has several noteworthy strengths: it is multidimensional, intersectoral, and universal. The system promotes each child's biological, mental, psychological, and social development. To do so, it coordinates participation across the Ministries of Health, Education, Labor, and Justice through the Ministry of Planning, at the national, regional, and local levels of government. Every child in Chile is eligible for ChCC services and benefits.

Recognizing that socioeconomic status at birth is Chile's strongest predictor of socioeconomic status at adulthood, ChCC guarantees universal access to education, maternal care, and health services for all children and offers additional specialized services to the 40% most "vulnerable" families. Vulnerability is identified via a Social Protection Index score, a composite of number, age, and disability of family members, family income, drug or alcohol use, living conditions, and other risk factors.[25]

In practice, families access ChCC services through neighborhood public health clinics, which guarantee free care to all. Approximately 75% of Chileans receive their care through the public system.[26] In public clinics, ChCC automatically enrolls every pregnant woman at the time of her first prenatal visit. All enrolled families receive regular screenings monitoring all aspects of child development and relevant parent risk, including psychosocial risk, attachment, depression, neurosensory and psychomotor development. ChCC professionals develop treatment plans and deliver a strong educational component, focused on prenatal care and parenting skills and supported by home visits.

From 2007-2010, ChCC developed the national and local networks and infrastructure necessary to identify at-risk families and provide benefits. In the aftermath of the earthquake, the ChCC's mandate grew: it had to continue to support its enrolled families who were high risk prior to the quake, and it had to protect the rights and respond to the needs of children made vulnerable by the disaster.

Protecting the rights of the child in times of crisis: The emergency response period

Immediately after the seism, members of the ChCC team began to assess the condition of the health centers and their abilities to provide local services to infant population and pregnant women provided by the health teams in the affected regions. National staff called each of the eighteen Health Services (Servicios de Salud) offices in the affected regions to inquire after the well-being of the ChCC staff, the structural conditions of each health center, the provision of ChCC services, and the condition of the affected population. In many health centers, medical teams had temporarily halted routine services and were only providing emergency care. Some essential ChCC services were suspended, including prenatal visits, well-child visits, home visits, and parenting workshops. Health centers that had suffered serious damage had transferred their maternal and pediatric patients to nearby centers.[27]

According to the founding principles of ChCC, the service suspension was not merely an inconvenience, but also a violation of their commitment to provide the highest standard of health. In addition, these principles guided continuity of public policies protecting child rights even as the government changed hands. Twelve days after the earthquake, Sebastian Piñera took power as the country's first democratically elected right-wing president in 40 years. His government continued the policies and support of ChCC, and the national ChCC team began developing a plan to resume the halted services, adjust them to the post-disaster context, and ensure the protection of child rights.

While ChCC found it relatively straightforward to solicit information on the damage to infrastructure and ChCC services, they had more difficulty evaluating the well-being of the children and mothers in the catastrophe zones. Based on data collected before the earthquake, ChCC leadership estimated there were 30,000 pregnant women and 400,000 children under the age of six living in the earthquake and tsunami-affected areas.[28] Seventy-five percent of these children received routine medical care through the public system. ChCC staff knew that these children were newly vulnerable after the earthquake, and they knew that with its national, intersectoral network of providers, ChCC had great potential to respond to their needs. However, ChCC post-disaster protocols had yet to be developed.

As the patient care branch of the MINSAL focused on treating the injured and ill, ChCC developed a tiered response to the disaster which maintained the rights-based structure at its core. First, they developed population-wide education messages apprising people of their rights, which they delivered online and on the radio. Then they wrote materials on psychological support to help caregivers and to train mental health volunteers. Next, they provided epidemiologic profiles to regional health officers, to help them identify vulnerable populations and target services. Finally, they adapted an individual-level child assessment instrument designed to recognize urgent child needs across developmental domains and link them with appropriate, timely services.

Population-wide educational messages were the first step. As local providers cleaned and sutured wounds, the national ChCC staff examined resources on child protection in the early phases of disaster to ensure that they were adopting the most updated recommendations. Using materials from the National Child Traumatic Stress Network and Louisiana State University Health Sciences Center, ChCC adapted succinct messages for adults in contact with young children.[29] On March 4, five days after the earth-

quake, ChCC posted its first messages on its website and emailed all registered users the first information about how to discuss the earthquake and its effects with young children. The following day, ChCC sent a second message with tips on providing children with adequate nutrition and on discussing the death of a loved one. Starting on March 8 and continuing through April, ChCC transmitted short radio announcements in the six affected regions, educating adults about behaviors they might expect from children who had witnessed frightening events or lost loved ones in the disaster, and describing activities and messages that might help children feel safe.

As the initial emergency response organized mechanisms for providing basic needs, ChCC focused on the potential risks to children's mental and emotional health. Immediately after a disaster, most children express emotional and behavioral reactions which diminish over time as their sense of normalcy and security returns. A small percentage of children experience more severe or persistent mental health symptoms.[30] All children need support and comfort from their caregivers. Therefore, in accordance with the World Health Organization's post-disaster recovery guidelines, ChCC created a booklet to support parents and caregivers: Psychological Support in Crisis Situations for Families with Children Between 0 and 5 Years (Apoyo Psicológico en Situaciones de Crisis Para Familias con Niños y Niñas de 0 a 5 Años), hereafter referred to as Psychological Support.[31] It offered more complete information than the short bulletins and radio messages, providing parents and health and childcare professionals with advice on how to talk to children, interpret their behavior, and support them. The National Committee for Mental Health in Emergencies and Disasters adopted the booklet as a training material for Chilean mental health volunteers.

To help regional health officers identify areas where psychological support was needed, ChCC tried to predict where the psychological and emotional impacts of the earthquake might be most severe. Crises often exacerbate pre-existing vulnerabilities.[32] Therefore, ChCC created epidemiologic profiles using data from 2009 that provided incidence rates of public health indicators for the ChCC beneficiary population at the municipal level. The profiles included information on the number of families with psychosocial risk before the earthquake, the number of premature and low-birth weight babies, the nutritional state of the children, and other statistics. ChCC collected, processed, and presented this data for 117 earthquake-affected municipalities. Regional and local health authorities could use the information to direct resources and interventions to the towns that needed them most.

III. Creation of the child well-being scale

Designing an instrument

In addition to population-wide education, psychological support, and planning, ChCC staff were concerned about children at the individual level — both children who were in vulnerable situations prior to the earthquake and those who were affected by the earthquake. The final tier of ChCC's disaster response was to help local teams assess individual children, prioritize needs, link children to services through its network of intersectoral relationships, and monitor the children over time. At the time of the earthquake, there was no instrument for such a task, so the national ChCC team created one.

In keeping with the technical review plank of human-rights based approaches to policymaking, ChCC staff reviewed several child assessment tools that have been used in complex humanitarian emergencies, such as Sphere, the SAFE model, and the Brief Impairment Scale.[33] They decided to model their tool on the Child Status Index (CSI), an instrument created by USAID Measure Evaluation with support from the President's Emergency Plan for AIDS Relief for use with orphans and vulnerable children.[34] ChCC chose the CSI because of its simplicity and comprehensiveness. The CSI allows almost anyone, regardless of expertise in monitoring or evaluation, to assess the well-being of

vulnerable children.

ChCC staff translated and adapted the instrument and renamed it the Child Well-being Scale in Emergency Situations (Escala Bienestar Infantil en Situación de Emergencia, hereafter referred to as the EBI). The EBI, like the CSI, asks evaluators to assess children across six domains: shelter, nutrition, health, caregivers, pre-school or home learning environment, and psychosocial situation.

The EBI provides five response categories in each domain, ranging from "Very Good" (Level 1) to "Urgent" (Level 5) . For each below-average rating, the instrument recommends interventions and specific timeframes within which they should be carried out. For example, a child rated "Urgent" for food insecurity should receive immediate food and water or milk, as well as a medical and nutritional evaluation. The child should be re-evaluated again within two or three days. If a child is rated "At Risk" for the same category, his caregivers should receive information on existing services that provide food to children in need, as well as information on the safe preparation of food. The child must then be re-evaluated within a month. Children rated below average in any category are followed in this manner until their risk is reduced or well-being improved to "Very Good" or "Good" in every category. The child is then monitored monthly.

Bringing the EBI to life

By the end of April, the ChCC team was satisfied with the simplicity, utility, and quality of the adapted EBI. They presented the instrument to an interdepartmental committee within MINSAL for approval. Some MINSAL colleagues expressed concerns: the local health teams were already overworked, and the EBI represented more paperwork; it would be too stressful to introduce a new tool during a crisis; precisely measuring risk is not important during a crisis and could detract time and energy from other activities. ChCC staff used the committee's comments to improve the tool and their presentation. They created a summary document of the EBI which allowed providers to conceptualize the tool as a whole instead of as six separate domains. They edited the training material to better explain the purpose of the EBI in a practical setting. They presented the revised tool to the committee and it was approved.

Next, ChCC planned to roll out the EBI to local nurses, pediatricians, psychiatrists, nutritionists, midwives, social workers, and pre-school teachers caring for the children in earthquake-affected zones. Teams would assess children in three main venues: 1) within the health clinics when young children presented with symptoms or reactions to the disaster, 2) in routine visits by the health teams to children living in IDP camps, or 3) in home visits to children considered at risk before the earthquake. ChCC decided to introduce the EBI with hands-on training and as part of a larger package they called "The Kit: Confronting the Emergency" ("Kit: Enfrentando la Emergencia"). It consisted of the EBI and its instruction manual, the *Psychological Support* booklet, a chest of toys, and copies of *General Recommendations for Parents and Caregivers*.

ChCC worked with local health officers to prioritize the earliest trainings for the municipalities with the most extensive and most severe damage. Trainings lasted three hours and were limited to 30 attendees. Each training consisted of an introduction, a presentation of the materials in the kit, a workshop where participants applied the EBI to a real case, and a verbal evaluation of the training by the participants. First, they presented the epidemiological profile and explained how local health teams could use the information to guide resource allocation. Then, they introduced *Psychological Support*. They taught providers how to discuss the earthquake with children and their caregivers and how to use the chest of toys to facilitate discussion. Finally, they presented and practiced the EBI. They described how the EBI would allow providers to assess a child, use recommended actions to link that child to indicated services, and

monitor his status over time. In some trainings, ChCC staff modeled an EBI-guided interview with a participant's patient. In others, ChCC presented sample cases to the group. Participants then scored the child on each domain of the EBI and discussed the scoring in small groups.

Overall, the training participants were very enthusiastic about the EBI and the kit. For local professionals, the case study and subsequent discussion clarified which services were available in their municipality. By bringing together health professionals, civil servants, pre-school teachers, and community leaders, the trainings involved all of the adults who had contact with young children and reinforced intersectoral relationships through which they could access services for children. Local professionals voiced one major criticism: they wished they'd had the EBI earlier. Before the earthquake, local ChCC practitioners had a tool for assessing risk in pregnant women, but they did not have an analogous instrument for assessing young children. Local providers liked the EBI and thought they could use it to evaluate any child, independent of the earthquake.

For the national ChCC team, watching different groups of professionals apply the EBI to the same test case and produce consistent results reassured them that they had created a clear, reliable tool. The eagerness with which local practitioners embraced the EBI encouraged them. "We never had a single response of resistance like we had at the national level," said one national ChCC team member. Another reported, "The reception of the EBI was very good, not only on the part of the health teams, but also on the part of educational teams. There was a daycare provider who was very enthusiastic and was going to apply the EBI to all of the children in her daycare."

Throughout the training process, the ChCC team updated and revised the trainings. They obtained permission to videotape the training sessions and then reviewed the videotapes to identify moments of confusion and clarify those points in later presentations. For example, one group expressed doubts about how to rate a child who seemed to fall between two categories of urgency. ChCC trainers oriented local staff to choose the category that would best guarantee the protection of the child. Subsequently, this advice was incorporated as a standard element into the training.

In total, ChCC trained more than 500 providers in 60 different municipalities in the three regions of the country most affected by the earthquake.

IV. Next steps

In November 2010, ChCC set out to evaluate their efforts, beginning with families living in IDP camps. They designed and distributed a survey of ChCC providers throughout the disaster-affected regions to evaluate the use of the EBI and the availability of other kit resources, such as the chest of toys and *General Recommendations*. They developed a digital platform for collecting survey responses, and they are collecting copies of completed EBI forms. They hope to analyze this data to determine how many children have been evaluated using the EBI, how many of the children determined to be at-risk received corresponding interventions, and how well they were monitored over time.

Even as ChCC evaluates the efficacy of their work, local ChCC practitioners in the northern regions of the country — those not affected by this earthquake — have requested training on the EBI and the kit. They learned about the tools through the ChCC network and colleagues who received training in the South, and they want to be prepared for the next earthquake.

If the survey results indicate little or no use of these resources, ChCC will have to determine why these interventions failed to reach their target population, how to fulfill its unmet obligations to protect the rights of the child, and what changes must be made

to improve its disaster response. MINSAL named emergency preparedness one of its 2010-2011 health goals. As ChCC analyzes the met and unmet needs of the children and families affected by the February 2010 earthquake, it must use what it learns to better prepare for a future disaster.

V. Conclusion

ChCC's process illustrates important lessons about protecting child rights after disasters.

(1) There are concrete benefits to ratifying the CRC and operationalizing the commitment to child rights in times of safety and security. The importance of protecting human rights often comes to the fore in times of crisis, when circumstances are especially ill-suited for developing practical policies and programs for protecting basic human rights. ChCC, created three years before the earthquake, established intersectoral mechanisms, relationships and common understanding between governmental groups at the national and local levels which made its disaster response possible. Had this network not been in place before the earthquake, it is unlikely that the groups, each overwhelmed by its own responsibilities in the wake of the disaster, would have been able to coordinate the dissemination of information and interventions so fluidly. The exchange of information between the groups allowed all parties to have a more complete picture of the state of child wellness. Early care and education providers could assess the health of children who did not visit a health center immediately after the earthquake. Conversely, information on children's access to educational services could be evaluated by health providers and shared with care providers. The EBI's assessment of multiple domains mapped onto ChCC's intersectoral, multidimensional, and rights-based approach exceptionally well, and on a practical level, helped to target care and avoid duplication of services.

(2) In some cases, "humanitarian emergencies have become the consequence of failures in the political and diplomatic arenas."[35] In this case, policies recommended by the Presidential Advisory Council — whose members could not have anticipated the catastrophe that would shake the country three years later — created the infrastructure, intersectoral collaboration, and the rights-based orientation ingrained in the ChCC system. The importance of this orientation became particularly clear after the earthquake. ChCC's duties went beyond ensuring the physical survival of the children. As a rights-oriented system, ChCC defined its response by its commitment to inalienable rights of all children, and the need to protect the most vulnerable. Moreover, the rights-based approach allowed for continuity in policies for child protection even as government administration changed 12 days after the disaster.

Not all children have a rights-based program to help protect their well-being in times of disaster. "The fact remains that in complex emergencies, in which resources are commonly limited and in which logistical and security constraints place severe limitations on what can be achieved, difficult choices will always have to be made."[36] In Chile as well, difficult choices are being made every day as the country rebuilds from the fifth-largest earthquake in recorded history. Nonetheless, its pre-existing politics, policies, and programs — including ChCC — safeguarded against a worse humanitarian crisis.

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