

QIDS

Quality Improvement Demonstration Study

A DOH-PhilHealth-UCSF-UPecon Partnership

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QIDS Round 2 Data Collection: Lessons from a National Health Policy Experiment

QIDS achieved a milestone in September 2007 when we completed the second round of data collection. On that date, QIDS field staff concluded field work on patient exit surveys, household surveys, physician surveys, vignettes, and facility surveys in our 30 district hospital sites located across the Visayas and Northern Mindanao. This data collection along with the first round collection, which we completed in November 2004, bracketed 2 years of QIDS and PhilHealth co-sponsored interventions put in place to improve the quality of care for children in the Philippines. Unique to Round 2 was the inclusion of so called “panel children” – these are a select group of children who were first surveyed in Round 1 and then resurveyed again 2 years later.

Both Rounds 1 and 2 assessments were very detailed and included collection of important biomarkers such as C-reactive protein (CRP), folate, hemoglobin, blood lead; self reported health assessments; and formal age appropriate cognitive testing. The effort to collect these data was extensive. We did this by assembling a large, dedicated team consisting of 30 medical technologists (also called MTs), 23 trained psychologists, 9 field supervisors and three area-wide coordinators. The data collectors were supervised by the central leadership team’s pathologist and psychologist.

These efforts were all coordinated by a central leadership team consisting of two administrative persons who monitored the flow of questionnaires, blood specimens, and results; an accountant who tracked the needed financial support for the field and the required data gathering materials (e.g. folate and lead reagents, survey instruments), two data analysts/editors who checked the accuracy of data, and a survey leader who monitored the field targets on a weekly basis. The required management effort is due to the coupling of ubiquitous budget limitations with high data accuracy required by the experiment. For instance, the Central Office team had to be careful in sending reagents since they are quite expensive, too little amount sent to a site might mean missed opportunities for data collection, while

too much might result in wastage.

The amount of data is prodigious. Counting just Round 1 and 2 patient exit surveys we now have 1.5 million individual pieces of data that are linked, cleaned, recorded, tabulated, and available to policy makers at PhilHealth, QIDS researchers, and any qualified applicants. In Round 2 alone, the QIDS team collected 3,053 Patient Exit Surveys; 1,785 Follow-Home Surveys; and 1,481 Panel Home Surveys. They have conducted a further 150 abbreviated and full facility surveys, 4800 patient satisfaction and exit surveys and 1701 physician vignettes and surveys since Round 1.

Over the course of completing these two rounds, QIDS has learned a lot about collecting data and designing interventions to improve care. Below we summarize some of these findings so that they might motivate others to carry out their own study.

QIDS Field Staff: Fit to a “T”

Preparation for the start of data collection needs to start early— in Round 2, preparations kicked-off eight months (January 06) before the official start of the data collection. During survey preparation, the QIDS leadership team’s objective was to recruit and develop the best field staff possible and match them to the study tasks. We recruited field supervisors and interviewers from qualified medical doctors, medical technologists and trained psychologists. They had to be able to work in the local language, Filipino and English to be eligible to be in the QIDS team.

For a project of this size and scope, hard work, skill and patience were required of the survey team and our partners, the PhilHealth Central Office. In each of our districts (30 in all) we typically had to coordinate the collection of 60 screened-in plus follow-home surveys, 40 screened-out surveys and 50 panel surveys. We trained them by reviewing each line of the survey instruments with them using a line-by-line manual for each instrument, teaching them appropriate consenting techniques, approaches for drawing blood or enlisting cooperation from a young child, and setting a series of very clearly defined output targets. The QIDS Round 2 field team, a multidisciplinary team at its core, eventually was comprised of 69 individuals: 30 MTs, 23 psychologists, 9 supervisors, 3 program regional managers, and 1 survey leader. The intensive training course itself was spread out over 3 weeks and, for Round 2 this lasted from July 26 to August 25, 2006.

During the training, we spent a considerable amount of time training the interviewers to properly explain the QIDS project to a child's guardian, particularly for the need to conduct blood test during the exit and follow-home survey. The interviewer not only had to be able to interact well with the guardian and the household members to understand their concerns and respond appropriately but also had the primary responsibility to obtain accurate and reliable data that could be analyzed and used to guide future policy. In the follow-home and panel surveys, where the psychologist participated, rapport with the index child was particularly critical in order to properly motivate children as young as 6 months to optimally perform a series of cognitive tests.

Meeting the Quantity Targets, Beating the Clock...

Data collection, by specification at the beginning of the study had to be finished in 20 months to be considered reliable. Using experience from the first round, the QIDS leadership team formulated an internal schedule of monthly targets of questionnaires for the districts to get the job done. Similarly, the leadership team's survey experience helped identify early on potential problem areas (e.g. those with low number of screened-out patients or districts where plane flights were infrequent). These districts were given particular attention and experienced survey leaders were tasked to handle these areas.

Aside from collecting data from so many children, timing and logistic issues were also crucial considerations. The blood samples and cognitive tests, for example, had to be collected blood samples to measure health status at the same time for every child. Biomarkers were the most sensitive of the health measures. We chose to do certain blood tests, such as that for hemoglobin, on-site, immediately at the time of collection. A typical child was also tested for lead and folate, which has a shelf life of just four days but only if properly frozen and immediately transported to the Central Office laboratory for processing. Given this, our interviewers were faced with various logistical concerns like availability of plane flights to Manila, securing the cold chain, and local shipping of blood specimens.

Perhaps the most challenging issue in study of this size is to ensure that data was of high quality. We developed a system of regional program managers who were ultimately charged with overseeing data quality and working with the teams in each of the 30 districts. The regional managers, all MDs, were tapped to handle the difficult blood-drawing cases, oversee team functions at the provincial level and to be senior representatives with hospital management and provincial leadership. They also helped the field supervisors talk with households about concerns they had regarding on blood and cognitive tests. Ultimately they were asked to review data that did not meet pre-specified quality criteria and develop a plan with supervisors to ameliorate any problematic data in real time. Regular visits

and supervision from a pathologist and a professional psychologist complimented these efforts to ensure that technical blood drawing and cognitive tests were of the highest quality and were done in a timely and professional manner.

We used payment and other incentives to foster high quality timely collection of data to ensure success. The QIDS leadership group devised a block-salary scheme that we found to successfully encourage teams to meet and exceed monthly productivity targets. A higher fee per questionnaire was paid if the team surpassed the pre-determined monthly target. To ensure data quality, a bonus to be computed after field data collection was part of the incentive. Smaller bonuses were also given for accomplishments related to basic teamwork and staff development.

Checks on Consistency, Data Encoding, and Analysis in Real-Time: A Huge Impact on Data Quality

Linking the survey data from over 6200 subjects each with at least 2 blood tests and a two hundred item cognitive assessment was enormously complex. This task was organized by QIDS leadership team in the QIDS Central Office, where they received the blood specimens, the cognitive assays, and the multiple survey forms. The blood specimens were the first to arrive. The Central Office would go to the airport twice a day to accommodate all of the samples coming from the various QIDS sites and the varying plane schedules. Once received, the team properly account for each specimen prior to completing any blood assay. For example, basic information (i.e., name, identification number, date of the test) was carefully recorded and counter-checked with the forthcoming questionnaires.

Surveys received from the field had to be accounted and edited within 8 days. Survey forms were thus directly inspected by editors and checked for consistency and accuracy upon receipt. The editors followed a line-by-line manual (the same manual that was used for the training of the field staff) to do this. With the performance incentives of the field staff contingent on the pace and quality of the surveys, this was administratively important as well. Editors became skilled survey experts and could immediately spot errors and inaccurate entries in the surveys. We felt that it was particularly helpful that the editors were the eventual users and analysts of the data and thus had a strong incentive to ensure that all the data quality questions were quickly provided back to the survey leader regional managers and supervisors.

As soon as the survey questionnaires were checked for consistency, a huge task was to ensure that that the data was processed immediately. The timing was for more than data consistency—it was also necessary to identify improperly conducted tests and abnormal values that needed direct follow-up with the patient. QIDS developed a data handling and encoding system that could respond immediately to

whatever inputs were available, in other words a real time data encoding system. As soon as data were encoded, they were subjected to consistency checks, and the leadership team directed necessary corrections or clarifications to the field or even asking staff to go back to households for resurveying or blood re-draws.

As part of our commitment of high quality data, encoding of the questionnaires was also done in real time. We did this in a blinded fashion and double entered the data to prevent any encoding errors. We developed proprietary encoding software consistent with the line-by-line manuals used by the interviewers and the editors. Two different encoders were tasked to key in a particular questionnaire. The software prompted the encoding team to provide immediate resolution if the entry keyed in by the second encoder was not consistent with the entry made by the first encoder. The head of the encoding team conducted the reconciliation by reviewing the questionnaire with the encoders. Questionnaires were given to the encoding team within one week of editing.

Real-time data entry was a crucial element for the QIDS interventions. For example, patient satisfaction scores from the exit surveys were used to establish quality criteria for bonus payments in one arm of the study. The real time editing and encoding also made possible quick comparisons with the Round 1 results so that trends could be identified. For instance, as early as three months after the commencement of the Round 2 data collection, comparison of second round and Round 1 blood results were already possible.

Time is Ticking: Finding the Panel Children

The essence of being a panel child in QIDS is that they could be followed up two years after their initial evaluation and see how they had fared. However we knew from other studies, that finding these children would be problematic. Thus, prior to the actual Round 2 data collection, the QIDS Central Office team conducted a review of all of the Round 1 screened-in and follow-home data—these were the panel children that needed to be found. We created a roster of these children that contained a wide range of useful tracking information: names, ages, addresses of course, and also contact persons their addresses, cell numbers where available and even GPS coordinates we had recorded earlier. To monitor the panel survey we pre-encoded the tracking information and created a special schedule so that these children could be found in the general sequence in which they were originally surveyed 2 years earlier.

Once we moved to the field, the biggest challenge for the panel children was finding 95 households that had moved between the first and second rounds of the survey. This was not a surprise, of course but surveys are often judged on how well they recapture subjects between rounds and we wanted QIDS to have the highest standards. What made the problem of the 95 missing children particularly challenging

was that they had to be found at the soonest possible time. Substantial delays in finding the missing children could have adverse effects on our analyses. Losing one child would also mean losing “a degree of freedom” or statistical power when we conduct our analysis. Long delays could also reduce the comparability of children in our sample. More importantly, we felt responsible for following up on the health status of children, particularly those who were found to be at health risks such as elevated blood levels (we of course had notified them earlier).

More than half of the 95 children that had moved could be found from the names of relatives, neighbors and friends listed on the Round 1 tracking sheets. The remaining panel children, however, posed a problem. To address this, we put in place a specialized team to find the ‘missing QIDS children’. The special task team reviewed all of the tracking information and, upon failing to ‘crack the case’, they solicited assistance from barangay officers, social workers, and health workers to help us locate the households. At the end of the Round 2, only two of the 95 households who changed addresses were not located—a figure we are naturally very proud to report. In others surveys dealing with cohorts, attrition of cohorts due to inability to locate ranges from 5 to 10% of total interviewed, which in a survey of this size would be between 75 and a 150 children we might never know what happened to.

Finding Isaiah

*Isaiah** was a screened-in follow-home child at Round 1 in Leyte. However, when the QIDS team visited him again at the address listed during the Round 1 survey, the team found that the child’s family had moved-out. The team eventually discovered that Isaiah had moved to Northern Luzon, an area outside of the QIDS study. The specialized team, assembled by the QIDS Central Office to find the 95 missing panel children, traveled to the family’s new address and administer Isaiah’s follow-up panel assessment. His parents were pleased we took the time to come and evaluate him again and provided us with new tracking information when we collect Round 3 data in the future.

Lito’s sad story

*Lito** was a screened-in follow-home child during the Round 1 survey from Siquijor. The team located the family, still living at their original address and learned that the child had died late in 2005. The team also discovered that the family sought care from a health facility for the illness that caused the child’s death. To adequately capture the circumstances surrounding Lito’s death, the team administered a specially modified survey instrument which was included in the final second round data.

* real names withheld

Tapping Community Support and Capabilities

Round 1 taught QIDS a good deal about team building and networking with partners at the local government and district hospitals. Launching the project facilitated early gave us opportunities to meet and orient and sometimes re-orient new mayors and hospital administrators on the QIDS project and PhilHealth.

Similarly, within the two year intervention period, we used these relationships to meet with and discuss the QIDS/PhilHealth findings and discuss basic opportunities around health care status, access to health care and the quality of the services provided. Before the conduct of Round 2, the involvement of the PhilHealth's Regional Offices on data collection and QIDS intervention established the presence of QIDS in the communities. With the help of the PhilHealth offices, the QIDS project was introduced to mayors, governors, and other community leaders. In Round 2, the 10 teams working in the 30 hospitals found it easier to achieve the target number of interviews and high quality of data in the hospitals as recognition of QIDS and trust in the relationships grew.

Completing the Rounds, Questions to be answered...

Round 2 activities complete the second cycle of data collection for QIDS. Round 1 activities gave a picture of the communities prior to the introduction of health reforms. The quarterly monitoring activities of the PhilHealth provided insights on the impacts of improving quality of care and expanding.

With Round 2 data, there is an exciting opportunity to measure the impacts of health reforms on the physical and cognitive health outcomes of children. We are studying many exciting policy questions which include the following analysis by the QIDS investigators and a host of researchers from the Philippines and other parts of the world:

- *Does health care serve as a social intervention that ameliorates the effects of morbidity and malnutrition on cognitive development in early childhood?*
- *How effective are government policies at creating incentives to improve the quality of clinical practice?*
- *Do financial and organizational policies actually lead to better health and developmental outcomes?*
- *How do private practitioners respond to (compete with) improving quality from public practitioners?*
- *Are hospitalized patients treated differently if doctors own nearby pharmacies?*

Our initial answers suggest that policies designed to expand access and improve quality can be effective and are capable of making real changes both at the individual and community levels *in a short period of time*. This means that

children can become healthier and perhaps, smarter. Doctors and the rest of the hospital, with appropriate incentives, are the key to improvements in the quality of care *even when resources are limited*. Local government officials can monitor health status improvements and as such, ask health leaders and providers to be more responsive to the health needs of their constituents. PhilHealth is an important vehicle in improving health. Indeed, QIDS and PhilHealth have showcased a successful model of policy reforms through an effective institutional partnership which brought together resources, technical expertise, and experience towards the goal of improving children's health.

The Quality Improvement Demonstration Study (QIDS), which is jointly being undertaken by the Department of Health (DOH), Philippine Health Insurance Corporation (PhilHealth), University of California San Francisco (UCSF), and the UPecon Foundation, attempts to evaluate policy interventions implemented under the DOH Health Sector Reform Agenda. QIDS is funded by the US National Institutes for Health and PhilHealth.

Specifically, QIDS evaluates the impacts of three policy interventions of interest to PhilHealth: expanding access to PhilHealth benefits for the most vulnerable populations (Intervention A); targeting bonuses for high quality care that leads to better health outcomes (Intervention B); and the current benefit program. In the QIDS project, these three interventions were randomly assigned to 30 district hospitals in the Visayas and Camiguin. To determine which intervention results in the greatest health benefits, QIDS is carrying out evaluations at baseline, every quarter and at the end-of-project. There are surveys of hospitals, physicians, exiting patients, patient follow home and random households.

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