A conversation with Results for Development, April 27, 2017

Participants

- Cammie Lee – Program Director, Results for Development (R4D)
- Kanika Bahl – Chief Executive Officer, Evidence Action; Former Managing Director, R4D
- Elie Hassenfeld – Co-Founder and Co-Executive Director, GiveWell
- Natalie Crispin – Senior Research Analyst, GiveWell

Note: These notes were compiled by GiveWell and give an overview of the major points made by Ms. Lee and Ms. Bahl.

Summary

GiveWell spoke with Ms. Lee and Ms. Bahl to get an update on our 2016 Incubation Grant to R4D. The call focused on updates on (a) measured increases in amoxicillin availability and (b) progress on assessing the accuracy of pneumonia diagnosis.

Amoxicillin availability

R4D plans to conduct three rounds of data collection this year on the availability of amoxicillin dispersible tablets (Amox-DT) at Tanzanian health facilities, observing the same sample of health facilities in each round.

R4D recently completed round 1 and is in the process of analyzing the data. It sees some preliminarily signs that there has been improvement in donated Amox-DT reaching health facilities. For instance, 56% of facilities in the group scheduled to start receiving medicine delivery prior to R4D's data collection had Amox-DT available on the day of the survey, though the survey ended before all health facilities received medicine delivery. This is compared to 35% of facilities in the group where Amox-DT arrived after medicine deliveries had already been planned. About 54% of all public health facilities are in the first group; 46% were not.

Round 2 is scheduled to start in June, and round 3 is planned for the end of the year.

Schedule of medicine delivery

Health facilities in Tanzania are split into three groups that each receive medicine deliveries at different times, based on a quarterly government distribution schedule (such that, e.g., one group of facilities receives medicine in February, one in March, and one in April, and then the cycle restarts). Amox-DT distributions follow this overall government schedule, and so the timing of Amox-DT delivery is not influenced by the timing of Amox-DT donations.

The government distribution network has ten zonal stores throughout the country that each distribute by the schedule of the three groups mentioned above. R4D did not observe any geographic clustering of the three different scheduling groups. All tiers of health facilities in Tanzania – hospitals, health centers, and public dispensaries – are also covered across the three groups.

Other medicines

R4D also looked at the availability of other commodities. For instance, it found that 14% of health facilities in the group scheduled to receive medicine delivery had amoxicillin powder for oral suspension (Amox-OS) available, vs. 30% of facilities not scheduled for delivery.

Assessing pneumonia diagnosis accuracy

R4D thinks that facilities' medical records are unlikely to be a reliable source for determining whether children with pneumonia are actually receiving treatment. R4D and its evaluation partner, IDinsight, have been exploring potential ways to assess the misdiagnosis rate and thereby get a better picture of the overall treatment rate.

There are two main ways that pneumonia misdiagnosis can occur:

1. Providers fail to complete the Integrated Management of Childhood Illness (IMCI) checklist for clinical diagnosis, or fail to complete it correctly.
2. The IMCI checklist is completed correctly, but misdiagnosis occurs anyway simply because the clinical diagnosis procedure is not very robust. Clinical diagnosis is known to produce a high rate of false positives (false negatives are less common).

R4D plans to do a study that combines a) direct observation of providers to check whether they complete all the steps in the IMCI checklist with b) lung ultrasound examinations, in order to assess the rate of misdiagnosis of pneumonia for patients that come to health facilities on their own. R4D plans for both the ultrasound technicians and the patients to be blinded to providers' clinical diagnostic results, and for the ultrasound diagnosis to be disclosed to providers only after all the ultrasounds are complete.

R4D and IDinsight expect the lung ultrasounds to give a more accurate picture of patients' true clinical condition and thereby help it determine what percent of misdiagnosed cases involve the provider not completing the IMCI checklist vs. misdiagnosis occurring despite the checklist being completed. R4D also expects comparing the ultrasound results to the clinical diagnoses to help it extrapolate the likely overall proportion of treated people that actually have pneumonia. (Lung ultrasounds have a much lower false positive rate than the clinical diagnosis procedure.)

If R4D observes low compliance with the IMCI procedure, it might try to implement more mentoring of providers. If it observes compliance with the IMCI procedure but still finds significant rates of misdiagnosis, it may try to introduce other diagnostic options, e.g., by testing the operational feasibility of using lung ultrasounds in more facilities.

R4D plans to conduct this research from October through the end of the year and hopes to have results early next year.

Comparison of lung ultrasound and chest x-ray

In the developed world, chest x-rays are considered the gold standard for pneumonia diagnosis. R4D and IDinsight decided to use lung ultrasound for this study, rather than a chest x-ray, because the ultrasound is more portable, easier to train providers to administer and interpret, and better fits the space constraints in many clinics.

Relative to chest x-rays, studies have shown that lung ultrasound has a sensitivity (i.e. rate of positives correctly identified) of roughly 73% and a specificity (i.e. rate of negatives correctly identified) of roughly 95%.

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