IMPROVING KNOWLEDGE AND SKILLS OF ASHAs

Using a Job Aid to Support the Management of Sick Under-Five Children

KEY FINDINGS/RECOMMENDATIONS:

- Using the job aid was associated with improved demonstration of key knowledge and skills required for the management of pneumonia, diarrhoea and the sick young infant. There was greater improvement in the management of pneumonia and the sick young infant compared to diarrhoea.
- ASHAs are commonly considered the first point of care among communities so ensuring that they are adequately trained and equipped to identify and manage sick children is critical. Their skills and knowledge can also be used to address broader health issues for newborns and young children.
- To catalyze improvement in overall child health, the ASHA program needs to be strengthened by regular focused training, supervision and incentives.
- With the focus on implementation of Home-Based Newborn Care and the introduction of the Home-Based Young Child program, there is a potential opportunity for these learnings to be implemented at scale.

Background

In 2018, 6.2 million under-five (U5) children died globally with ~18% of the deaths occurring in India. Many of these deaths are due to newborn infections, pneumonia and diarrhoea[1]. In Uttar Pradesh (UP), it is estimated that each day 97 newborns die from infections, 68 young children from diarrhoea and 80 from pneumonia[2,3].

Community health workers (CHWs) can effectively deliver key interventions to reduce mortality related to pneumonia and diarrhoea (Perry 2014). CHW programs, if scaled-up to population levels, are modelled as being highly promising in achieving child health goals for 2030 (Chou 2017).

Under the National Health Mission (NHM), Accredited Social Health Activists (ASHAs), voluntary incentive-based CHWs, have been an integral part of public health programs in India. There are more than 120,000 ASHAs in UP, distributed at a ratio of 1 ASHA per 1000 population.

Program Context

ASHAs were oriented to the approach to the major causes of childhood illnesses in December 2015 and January 2016 in a total of 15 blocks of three districts (Bareilly, Prayagraj and Gonda). The purpose of the training was to improve their ability to recognize danger signs and to classify and manage possible severe bacterial infection, pneumonia and diarrhoea at the community level.

In April 2016, an initial evaluation was conducted which included focus group discussions, case studies and knowledge assessment.

Figure 1. Orientation of ASHAs on the job aid.

Program Context (Continued)

One of the important findings was that while ASHAs had understanding of the danger signs of pneumonia and diarrhoea, they had difficulty in using the knowledge in classifying the illness and determining the treatment protocol.

Based on the experience of the program team and the post-orientation evaluation, an easy-to-use job aid was developed. All ASHAs in the 15 initial intervention blocks were re-oriented on practical skills using case vignettes in August and September 2016. Direct support by the Uttar Pradesh Technical Support Unit (UP TSU) staff to ASHAs was withdrawn by November 2016 as the government had taken up ASHA Sanginis as the ASHA supervisory cadre.

Figure 2. Supporting the ASHA to use the job aid to assess a young child.

Methodology of Evaluation

In March and April 2017, an evaluation was conducted in partnership with King George's Medical University. The study looked in more depth at the ASHA's role in the management of pneumonia, diarrhoea and the sick young infant. The three main components of the study were (i) an audit of the village health index register; (ii) pneumonia and diarrhoea case review; and (iii) assessment of knowledge and skills and stock availability.

The analysis presented was part of a larger evaluation of the management of pneumonia, diarrhoea and sick young infants by the ASHAs.

The objective of this part of the analysis was to understand the knowledge and skills of ASHAs regarding the management of childhood pneumonia and diarrhoea and the effect of using the pictorial job aid.

This evaluation used a multiple choice knowledge tool and an assessment of skills using case vignettes with supplementary video. The job aid was available for the ASHA to use during the skill assessment.

The mean knowledge scores between rounds were compared using a two-sided t-test. A Chi-squared test of association was used to compare skill scores with and without the job aid.

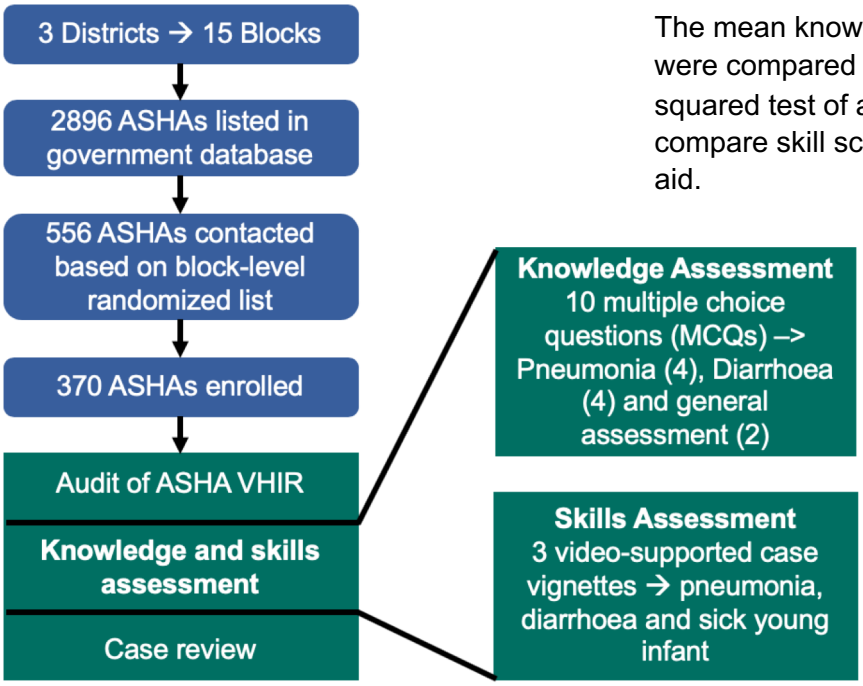

Figure 3. Flow diagram of sample selection for the study and the assessments used.

Results

Mean Knowledge and Skill Scores

The mean composite knowledge score of ASHAs regarding pneumonia and diarrhoea was 73% (see Table 1). This score was significantly higher than the mean knowledge score of 51% in the April 2016 evaluation (p <0.001). The current score represents retained knowledge as direct support to the ASHAs ceased 6 months prior to the assessment.

Interestingly, it was the diarrhoea component score that was the lowest. Only 40% of ASHAs knew the next step in assessment after diarrhoea had been identified (*assess dehydration level)* and only 48% knew the correct initial treatment for diarrhoea with some dehydration.

The mean composite skill score of ASHAs regarding pneumonia, diarrhoea and the sick young infant was 59% (see Table 2). There was no previous assessment for comparison. The skill with the lowest score was on care of the sick young infant.

Association of the Use of the Job Aid with Demonstrated Skills

Associations between the use of the job aid and demonstration of key skills are shown in Tables 3, 4 and 5 for the pneumonia, diarrhoea and sick young infant case vignettes, respectively.

Table 1. Mean knowledge scores of ASHAs.

Total knowledge score (out of 10)	7.29 (95 CI: 7.1 to 7.47)
Diarrhoea (out of 4)	2.33 (2.22 to 2.43)
Pneumonia (out of 4)	3.21 (3.11 to 3.3)
Assessment (out of 2)	1.75 (1.7 to 1.8)

Table 2. Mean skill scores of ASHAs

Total skill score (out of 15)	8.8 (95 CI: 8 to 9.07)
Diarrhoea (out of 4)	2.81 (2.7 to 2.92
Pneumonia (out of 5)	3.21 (3.11 to 3.3)
Assessment (out of 3)	1.52 (1.4 to 1.64)
Sick young infant (out of 3)	1.26 (1.2 to 1/32)

For the pneumonia case vignette, there was a statistically significant difference between the demonstrated skills of those who use the job aid compared to those who did not for 6 of the 8 items assessed. The improvements were in all stages of the case. Demonstrating the skill of initially assessing for general danger signs increased from 30% in ASHAs not using the job aid to 48% among those who did. Significantly more ASHAs using the job aid indicated that a child with fast breathing pneumonia should be referred to an Auxiliary Nurse Midwife or a health facility for confirmation of the diagnosis.

Table 3. Percentage of ASHAs who demonstrated skills in a pneumonia case vignette, by job aid use.

	% of ASHAs with correct response	
	USED Job Aid	**Did NOT USE Job Aid**
Indicated that when assessing a 4 year-old child, the first step is to look for 4 general danger signs (p<0.001)	**48.4** (109/225)	**29.5** (41/139)
After determining the child had cough, indicated the next step is to look for fast breathing (p=0.036)	**78.2** (176/225)	**68.4** (95/139)
Demonstrated the skill of counting breaths within +/- 5 of actual (p=0.368)	66.5 (149/224)	61.9 (86/139)
Indicated that a breath rate of 65 per minute in this case was fast breathing (p=0.019)	**98.2** (220/224)	**93.5** (130/139)
Indicated that isolated fast-breathing in a child with cough or difficult breathing was classified as pneumonia (p=0.069)	84.4 (190/225)	76.8 (106/138)
Indicated that the first dose of amoxicillin should be given (p=0.035)	**48.0** (108/225)	**36.7** (51/139)
Indicated that the child should be assessed by an Auxiliary Nurse Midwife (ANM) or at a health facility to confirm the diagnosis (p=0.012)	**44.9** (101/225)	**31.7** (44/139)
Indicated that the child should complete 5 days of amoxicillin (p=0.012)	**38.7** (87/225)	**25.9** (36/139)

Table 4. Percentage of ASHAs who demonstrated skills in a diarrhoea case vignette, by job aid use.

	% of ASHAs with correct response	
	USED Job Aid	Did NOT USE Job Aid
Indicated that when assessing a 2 year-old child, the first step is to look for 4 general danger signs (p=0.005)	**59.0** (144/244)	**42.9** (48/112)
After determining the child had diarrhoea, indicated the one should ask about the number of days of diarrhoea (p=0.606)	88.5 (216/244)	86.6 (97/112)
After determining the child had diarrhoea, indicated the one should ask about blood in the stool (p<0.001)	**51.6** (126/244)	**31.3** (35/112)
Based on video clips, indicated that the child had diarrhoea with some dehydration (p=0.005)	**84.8** (207/244)	**72.3** (81/112)
Indicated that Plan B (specific volume of ORS over 4 hours) should be given (p=0.202)	86.5 (211/244)	81.3 (91/112)
Indicated the correct amount of ORS to be given using Plan B for this child (p<0.001)	**84.8** (207/244)	**67.9** (76/112)

Table 5. Percentage of ASHAs who demonstrated skills in a sick young infant case vignette, by job aid use.

	% of ASHAs with correct response	
	USED Job Aid	Did NOT USE Job Aid
Indicated that when assessing a 35 day-old infant, the first step is to look for 10 general danger signs (p<0.001)	**71.9** (146/203)	**39.5** (66/167)
Based on video clips, indicated that the infant had at least one danger sign (p=0.105)	96.6 (196/203)	92.8 (155/167)
Indicated that the child is classified as possible severe bacterial infection (p<0.001)	**46.8** (95/203)	**11.5** (19/166)
Indicated that the first dose of amoxicillin should be given (p<0.001)	**51.7** (105/203)	**29.3** (49/167)
Indicated that the infant should be immediately referred to a facility (p=0.668)	91.1 (185/203)	89.8 (150/167)

For the diarrhoea case vignette, the correct classification of diarrhoea with some dehydration and indicating the correct amount of ORS to give was higher among ASHAs who used the job aid.

The demonstration of skills for the sick young infant case vignette was generally poorer than the other case vignettes. However, among those who used the job aid, there were stark improvements in key areas. Proper classification of probable severe bacterial infection was only 12% among those not using the job aid. This rose to almost 50% among those who used the job aid. There was also a significant improvement in recognition of the need for giving a first dose of amoxicillin.

Next Steps

Using the job aid significantly improved the demonstration of key skills required for the management of pneumonia, diarrhoea and a sick young infant. The job aid has now been integrated into the training of ASHAs and ASHA Sanginis in the 25 high priority districts.

With the focus on implementation of Home-Based Newborn Care and the introduction of the Home-Based Young Child program, there is a potential opportunity for these learnings to be implemented at scale. It will be important to determine if the use of case vignettes and a pictorial job aid can improve the care provided by ASHAs for sick newborns and young children across UP.

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Acknowledgements:
Communiity Medicine department of King George Medical University was responsible for data collection. The Child Health Learning Cell was responsible for the analysis and visualization. The Child Health Implementation Team has led the work summarized in this brief. Funding was provided by the Bill and Melinda Gates Foundation.