BRIEF

Save the Children

Implementing outpatient management of infections in young infants: Building the skills of union level providers

Background

Reducing neonatal mortality in Bangladesh, a priority for the government through the Health Sector Development Plan (2017 – 2022), requires scaling up life-saving interventions that either prevent or manage the major causes of newborn deaths: prematurity, intra partum complications, and infections.

In Bangladesh, serious infections including sepsis, meningitis, and pneumonia directly cause 73000 deaths in 2015 newborn deaths each year. Prevention through improved hygiene, chlorhexidine cord antisepsis on the first day, and exclusive breastfeeding can avert a substantial number of life-threatening infections. Nevertheless, serious newborn infections still occur frequently, in part because of inadequate prevention, and because of the increased vulnerability of newborns to acquire infections with dangerously pathogenic bacteria.

Early recognition of clinical signs of PSBI and timely initiation and completion of appropriate antibiotics are key to saving the lives of the approximately 7% of newborns who develop serious infections. Recommended treatment of serious newborn infections is hospitalization with injectable antibiotics – gentamicin plus either ampicillin or penicillin -- for at least 7 days. Globally, and in Bangladesh, such hospitalization is not feasible or acceptable for the majority of families due to a number of barriers including cost, transportation, separation of mother from home and other children, and cultural traditions.

Recent research from Asia (including Bangladesh) and Africa showed that outpatient treatment with injectable gentamicin and oral amoxicillin was effective in treating PSBI when hospitalization was not feasible. Task-shifting to outpatient frontline health workers was found to be feasible and effective, and also an acceptable option for families that could not accept hospitalization. As a result, WHO developed new global guidelines for outpatient management of newborn and young infant PSBI when hospitalization was not possible.

In 2015, Government of Bangladesh adopted these new guidelines, incorporating them in the Comprehensive Newborn Care Package (CNCP) as national policy to deliver evidence-base prevention and management interventions improve newborn survival.

Bangladesh MoH&FW identified union level facilities as the service delivery point for PSBI management. The rationale was the widespread availability/accessibility of union-level facilities, the presence of trained health providers whose competencies included giving injections, many (but not all) of these providers had previous IMCI training and experience such that they had some familiarity with sick child management, and communities knew about and commonly utilized selected union level services.

MoH&FW identified SACMOs as the key providers for PSBI management, requiring them to learn new skills, competencies, and especially to gain confidence providing these services routinely. New SACMO skills included the following:

- identification of clinical signs and classification of PSBI (WHO classification: clinically severe infection, isolated rapid breathing, and critical illness);
- knowledge and skill to refer cases to upazilla health centers with pre-referral antibiotics given to the sick baby;
- knowledge and skill to provide full course of outpatient treatment, including injections, when referral was not possible;
- competence to correctly and safely administer gentamicin injections to newborns; and
- maintenance of skills and confidence over time despite relatively low caseload with limited opportunities to apply and practice.

A major program challenge was that most SACMOs had no previous training or experience providing treatment for sick newborns. During the start of implementation, senior SACMO's were not confident to manage the PSBI cases with either injectable or oral antibiotics. Health providers are commonly fearful and uncomfortable caring for newborns, especially sick newborns. Thus, managers and partners implementing CNCP with SACMO outpatient management of PSBI requires clear understanding of this threat, and clear plans from the outset to address this challenge.

The purpose of this Technical Brief is to describe for Program Managers the approach and learning from the Kushtia District Learning Lab pilot demonstration of government implementation of CNCP including PSBI management.

Approaches to build and sustain SACMO's capacities

- ❖ Skill development
  - CNCP training
  - Orientation on job aids and monitoring tools
  - Use of Mini skill lab
- ❖ Skill retention
  - Refresher training
  - Quarterly review meeting
  - On-job mentoring

CNCP training for union level service providers

To achieve effective coverage of the PSBI management at union level facilities, it was important to have skilled staff available at respective service delivery points. Through the Comprehensive Newborn Care Package (CNCP) a 5 days skill-based training was conducted for union level service providers. Training of union level service providers in Kushtia was done in 9 batches involving 142 SACMOs and 58 FWVs from April to May, 2015. Doctors from Kushtia General Hospitals and Upazila Health complexes who received ToT from national level facilitated the training of union level service providers as per the CNCP training manual of union level service providers. The manual included focus on healthy and sick newborn management, including PSBI identification and management. Training included hands-on learning by incorporating video of real newborns with danger signs, role plays using case scenarios, props, and exercises in dose calculation.

Orientation on job aids and reporting forms

To ensure skill retention, especially for union-level service providers managing sick babies, on-the-job training and use of job aids & reporting forms are extremely important. With the technical support of SNL, DGHS & DGFP jointly organized a one-day orientation for SACMOs on PSBI management reporting form and on use of different job aids. Government managers facilitated the orientation with presence and technical support from Saving Newborn Lives staff. The practitioner groups also

provided important feedback or brought up issues that subsequently informed a few additional modifications and adjustments to the job aids and forms.

Job Aids for PSBI Management

Tool	User	Purpose
Sepsis management algorithm & Dosage Chart	SACMO	Management of sick newborn and young infant (0-59 days)
Injection administration & Sepsis case follow up Chart		During Sepsis case management and follow up of CSI and IFB cases

Mini skills lab

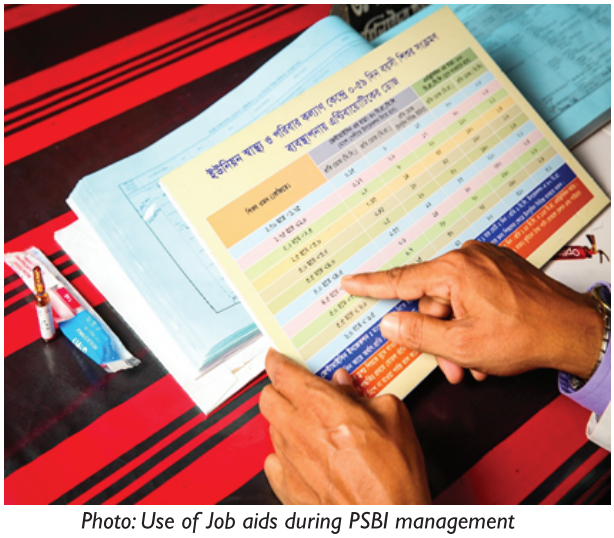

Photo: Use of Job aids during PSBI management

Decline in practical skills and knowledge after training is a major concern for service providers. Skill retention after training requires continuous practices. The skills that participants developed through a five-day CNCP training event would have to become second nature through continuous practice. The essential skills to provide service for management of PSBI cases needed to be retained through regular practice. Mini skill lab is a need-based training concept for service providers to retain skills in providing certain lifesaving services. At each upazila health complex in Kushtia, designated areas were set up with training related props and materials (mannequins, breast models, bag & mask, flip charts and manuals) to facilitate on-site practice to their skills in PSBI recognition and management.. Additionally,, an organized mock practice session/drill was conducted peither weekly or fortnightly.

Refresher training & Quarterly review meeting

At one year following initial CNCP training, a two-day CNCP refresher training was held for CHW, FWV & SACMO, SSN and doctors in

accordance with the CNCP training modules
Rather than rely on annual refresher meetings to maintain PSBI management skills, a series of quarterly sepsis review meetings were jointly organized for SACMOS by DGHS and DGFP. The PSBI management progress was reviewed quarterly by organizing a review meeting. A one day meeting included; reviewing of filled in registers and analyzed routine data. In the review meetings SACMOs reviewed each other's registers and identified recording and reporting errors. The review process was instrumental to assess knowledge level of SACMOs by revisiting their own work and identifying gaps in following the National PSBI management protocol.

On job mentoring:

On job mentoring by the upazila level managers were introduced for the service providers of union level facilities of Kushtia. The mentoring was such a process where the upazila level managers acted as a mentor or a coach and provided advice and instructions to the SACMOs during their routine facility visit for ensuring quality management of PSBI cases including follow-up.

Strengthening Supervision and Monitoring

Regular supervision and monitoring was introduced to ensure the quality of the PSBI management and as well as to improve the motivation level of service providers at union level facilities. Sub district level managers of both Health and Family Planning departments conducted facility visits, where they monitored sepsis management activity and reviewed reports and registers. For capacity development of sub-district managers, these visits were initially accompanied by SNL technical staff to ensure effective support, mentoring, data review, and reporting. Observations from these supervisory visits and progress reports were presented in routine monthly staff meeting for adequate quality control.

Supervision and Monitoring	Frequency	Activity
Routine Field Visit	8/Month (as per gov. protocol)	❖ On job mentoring for quality management of PSBI cases including follow up ❖ Checking stock status of PSBI Management drugs along with other related logistics ❖ Checking record keeping as per protocol ❖ Proper usage of Job Aids ❖ Assessment of Skill retention ❖ Review client flow
Joint Supervisory Field Visit	As Needed	

Results:

We documented SACMO performance over the course of 18 months including by direct observation by trained observer and also by case tracking with families after diagnosis and treatment of PSBI at union level facilities per CNCP. The following table demonstrates over time key knowledge and skill in assessment of ill newborns. The two data points represent two direct observations – the first post-training assessment was about 6 months after initial training and 3 months after onset of implementation; while the second assessment was about 3 months after the first. Note that the first data point reflects a period of initial experience and was during the time that SNL provided more direct support to the district government managers in supervision and quarterly sepsis meetings. The second data point reflects the period when the government managers were more directly overseeing CNCP will less support from SNL, say for mentoring and quarterly review meetings. In short, the table bellows demonstrates either no change of improvement between the two assessments, suggesting that that the PSBI skills retention efforts in Kushtia were effective and feasible for government to provide with modest/limited initial partner support.

Table: Knowledge and Skill of the SACMO in assessment of newborn illness in Kushtia

	R1 (Dec' 15 to Feb' 16)	R2 (Mar' 16 to May' 16)
Total	30	31
Skills	%	%
Assessment for Critical Illness (CI)		
checks for UNCONSCIOUSNESS or DROWSINESS	56.7	74.2
asks whether the infant had CONVULSIONS or HISTORY OF CONVULSION	60.0	61.3
asks for PERSISTANT VOMITING	56.7	61.3
looks for CENTRAL CYANOSIS	23.3	38.7
asks whether the baby is UNABLE TO FEED	56.7	61.3
looks for BULGING FONTANELLE	33.3	64.5
weighs and record the WEIGHT	36.7	48.4
Assessment for Clinical Severe Infection (CSI)		
checks for CHEST IN DRAWING	63.3	87.1
checks the TEMPERATURE	86.7	87.1
asks whether the infant is having DIFFICULTY IN FEEDING	63.3	51.6
Assessment for Isolated Fast Breathing (IFB)		
Count respiratory rate for one whole minute	43.3	96.8
Check for Local Bacterial Infection (LBI)		
looks at the umbilicus	86.7	100
looks for skin pustules	50.0	71.0

A Success story of a PSBI case management

Background:

Mother of Newborn: Munira Khatun
Name of Newborn: Ashik Hasan
Age: 58 days during the time of incident
Gender of Newborn: Male
Location: Saota, Chapra, Kumarkhali, Kushtia

Summary:

Munira is a mother of two, living in Saota village of Chapra Union in Kumarkhali with her husband, children and her mother and father in law. They are a family of six, with the youngest member being Munira's three month old son, Ashik Hasan. Her husband, Ujjal is an auto-rickshaw driver and the sole provider of their family.

Munira's days mainly consist of cooking, completing the household chores, taking care of her infant son and looking after the rest of her family members. At 58 days of age, her baby had suddenly fallen sick. She had noticed there was something wrong when the baby was unable to breastfeed properly. The next day, when the baby had gotten worse, she had taken her baby to the Saota Union Health and Family Welfare Centre (UH&FWC). SACMO Rekha Khatun examined the baby, checked the vital signs and diagnosed the case as a CSI case.

A Brief story on PSBI case management stated by Rekha Khatun, SACMO, Saota UH&FWC, Kumarkhali, Kushtia:

"Baby Ashik Hasan arrived at my UH&FWC around 12:30 in the afternoon with his mother Munira and his relative. Munira was complaining that the baby was not being able to breastfeed properly so, the first thing I did was ask her to try to feed the baby in front of me. I also observed that the baby was not feeding properly. He was feeding for a bit and then again letting go of the breast and crying. They said that he has been like this for a few days now.

Next I checked his vitals such as temperature, breathe rate, weight, etc and asked about other signs of illness such as convulsion, vomiting, reduced movement, etc. Everything seemed to be fine, except that his breathing rate was faster than normal at 62/minute and that he was not feeding well.

Then, I told them that if they want, they can take the first dose of medicines here and go to a higher facility like Kushtia General Hospital or they can get the full course of treatment here. After they chose to get treated here, I gave the baby Gentamycin injection according to his weight and also gave the Amoxicillin drop. The next day when they came for the 2nd dose of Gentamycin, the baby had already improved. I gave them the rest of the medicines and told them to come see me if anything goes wrong.

Since they lived nearby, I was frequently in contact with them and after a few days of during the time of follow up, found that the treatment had been successful and the condition of baby was completely improved. The family had been very happy with the treatment and had even told me, "In the past they had had to spend a lot of money to get treatment for her older son when he was an infant but now it was great that this service was available for her younger son."

Lessons Learned

- New skill acquisition by union level service providers specially SACMOs to manage possible serious bacterial infections (PSBI) in newborns and young infants (0-59 days) is programmatically feasible but requires a plan and commitment to maintain provider skills when there may be limited opportunity for practice given low caseloads.
- Sustained high coverage and quality of SACMO management of PSBI in newborns and young infants optimally requires integration within other CNCP interventions; implementation of focused training and skill retention plan; and enhancing and ensuring district capacities to provide ongoing training, mentoring, skill retention, and monitoring.

Key recommendations

- Ensure training and refresher training approaches that are based on the latest evidence of the efficiency and cost –effectiveness of o- site mentorship, and especially routine practice through skills labs using the concept of "how dose-high frequency" practice.
- Ensure close monitoring and supportive supervision to track changes, identify progress, and challenges, and develop local solutions related to supply, demand, and quality concerns.
- Refer to, adapt, apply, and utilized tools that are widely available under CNCP through the National Newborn Health Program.

Glossary

Clinical Severe Infection (CI): Young infants of 0-59 days old suffering from any of the following signs as documented in the Sick Newborn and Young Infant register at Union level facilities will be considered as a case of CI.

- Unconscious/ Drowsy
- Convulsion or history of convulsion
- Completely unable to feed
- Persistent vomiting
- Bulging Fontanelle
- Central Cyanosis
- Birth Weight less than 1500 gm

Critical Illness (CSI): Young infants of 0-59 days old suffering from any of the following signs as documented in the Sick Newborn and Young Infant register at Union level facilities will be considered as a case of CSI.

- Chest indrawing
- Low temperature (temperature below 35.5° C/ 95.7° F)
- High temperature or fever (temperature above 37.5° C/ 99.5°F)
- Lathergic or restricted movement
- Unable to breastfeed

Health care providers: Paramedic/Sub Assistant Community Medical Officer (SACMO) with 3 years of professional training or medical officers providing outpatient services to sick newborn and young infants (0-59 days) at union level facilities will be considered as health care providers.

Isolated Fast Berating (FB): Young infants with respiratory rate more than 59 breaths per minute as documented in the Sick Newborn and Young Infant register at Union level facilities will be considered as cases IFB

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SACMO: Sub Assistant Community Medical Officer. Union level service providers, responsible for managing sick newborn and young infant (0-59 days) according to national guideline

UH&FWC: Union Health & Family Welfare Center. Union level government health facility under the Ministry of Health and Family Welfare

Photo: PSBI management at Shelaidah UH&FWC, Kumarkhali, Kushtia

The brief is made from the experience of implementation of Comprehensive Newborn Care Package (CNCP) in Kushtia district since April 2014 as per Memorandum of Understanding among Directorate General of Health Services (DGHS), Directorate General of Family Planning (DGFP) of Ministry of Health and Family Welfare (MoH&FW) of Bangladesh and Saving Newborn Lives (SNL) Program of Save the Children.

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Brief writing team: Dr. Ziaul Ahsan, Steve Wall, Sohrab Hussain, Mirza Manbira Sultana, Dr. Rezaul Hasan

Reviewed by: Dr. Khaleda Islam, Director, PHC and Program Manager, NNHP & IMCI, DGHS and Dr. Farid Uddin Ahmed, Deputy Director, Services and Program Manager, Newborn & Child Health, DGFP

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For more information:
Dr. Md. Rezaul Hasan
Save the Children in Bangladesh
Email: rezaul.hasan@savethechildren.org

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