

REFERRAL PRACTICES FOR SICK NEWBORNS WITH POSSIBLE SERIOUS BACTERIAL INFECTION IN ETHIOPIA: LESSONS FOR PROGRAM IMPROVEMENT

BACKGROUND

Ethiopia's Community-Based Newborn Care (CBNC) program seeks to reduce newborn mortality and serve most vulnerable populations by bringing health services closer to communities. Core elements of CBNC include early identification and timely, appropriate management of young infants with possible serious bacterial infection (PSBI). According to the national CBNC implementation guidelines, all PSBI cases must be referred, but can be managed at health post (HP) level when referral is not accepted and/or possible (Box 1).

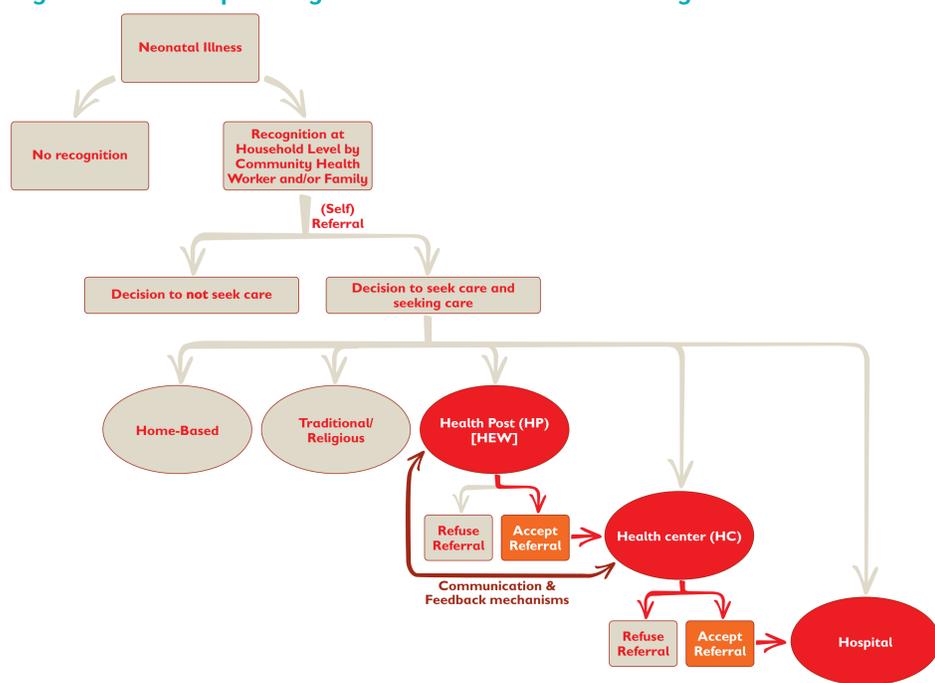
The referral pathway for neonates with suspected PSBI includes identification at household level and care at HP, health center (HC), and hospital levels (Figure 1). A well-functioning and responsive referral system is required across the continuum of care, coupled with referral adherence by caretakers.

In 2016, Save the Children's Saving Newborn Lives (SNL) Project undertook a study to assess:

1. The referral adherence¹ of caretakers of sick young infants,
2. The barriers and facilitators to adherence, and
3. The quality of care received at referring and referral facilities.

¹ Referral adherence: after getting advice to go to a higher facility, having sought care from any qualified, facility-based provider. Whether the referral was completed was based on self-report and/or facility records.

Figure 1: Referral pathway from case identification through treatment



Box 1: PSBI treatment according to National CBNC implementation guidelines

- HP: PSBI cases given 1st dose of gentamicin & amoxicillin, then referred to HC
- HC: PSBI cases given gentamicin & amoxicillin or ampicillin (if pre-referral dose not given) then referred to hospital
- If referral not possible or not accepted (HP or HC): outpatient treatment with antibiotics at current facility

METHODS

- Geographic area: 18 woredas across five zones in two regions
- Cross-sectional, mixed methods (details in Table 1)
- Sampling:
 - Purposefully selected 33 HC, 46 HPs, and 20 Woreda Health Offices (WrHOs)
 - Household survey sample size (n=145) calculated using single population proportion formula, taking into account assumptions (details in handout)
 - Purposefully selected 46 HEWs, 33 HWs and 12 caretakers for qualitative interviews
- Study subjects:
 - Cases from HPs in study woredas
 - Sick young infants (0-2 months) classified as PSBI who sought care at HP in 12 months preceding study
 - Caretakers of cases identified (household survey)
 - Subset of cases in previous 3 months (interviews)
 - Health care providers at HPs and HCs in study woredas (interviews)
- Analysis:
 - Quantitative—descriptive, binary, multivariate analyses (SPSS version 21)
 - Qualitative—manual thematic coding by multiple team members, then summarized

Table 1: Summary of data sources and data collected

	Data source	Data collected
Quantitative	HP register Integrated community case Management (ICCM) register	<ul style="list-style-type: none"> • Number of PSBI cases (children 0-2 mos.) seen and referred • Referral information • Pre-referral treatment
	HC Registers Integrated Management of Newborn and Childhood Illness (IMNCI) register (0-2 mos)	<ul style="list-style-type: none"> • Referral from HP • Referral to higher facility • Quality of care for PSBI cases (six most recent cases)
	Household survey	<ul style="list-style-type: none"> • Referral, pre-referral treatment provided at HP • Action taken following referral • Treatment provided, treatment adherence • Newborn status after treatment
Qualitative (In-depth)	Caretakers of PSBI cases	<ul style="list-style-type: none"> • Health-seeking behavior • Referral adherence and influencing factors
	Health care providers • HP (HEW) • HC	<ul style="list-style-type: none"> • Institutional capacity • Training relating to CBNC • Provider attitudes & practices towards referral • Perceived treatment adherence • Perceived enablers & barriers to referral and treatment adherence

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RESULTS

Proportion of Patients Referred and Location of Referral (see Figure 2):

- 778 PSBI cases seen at HPs in study reference period
 - 27% documented in HP registers as referred to a higher health facility (HC or hospital)
 - Referrals from HP most commonly to government HCs (71%) or hospitals (18%)
 - Caseload & referral rates varied by zone (caseload range 28 – 415, referral range 10% – 78%)
- 38% of PSBI cases seen at HC were referred to public hospitals, the rest treated at HC

Referral adherence:

- Discrepancy in data on HP onward referral adherence: 88% (caretakers' report) versus 23% (HC registers)
- Of caretakers reporting adherence to referral, 70% report going to facility specified by HEW, remainder to another higher level health facility or private clinic

Referral systems and practices:

- 64% of cases referred from HP were given pre-referral antibiotics; 23% of referred cases did not get pre-referral antibiotics; data missing for 13% of cases in HP registers
- Of cases referred from HPs,
 - One-half of caretakers reported receiving referral slip
 - One-third reported supportive action by a HEW in the referral process (e.g. transport arranged, accompaniment)
- 19% of HEWs received feedback from destination health facilities about referred PSBI cases
- In-depth interviews revealed informal means of communication for referrals (cell phone calls), more common than formal channels (referral slips, written feedback notes)

Care gaps at health facilities:

- Approximately half of cases (HPs: 47%; HCs: 57%) were not treated with recommended regimens
- Most PSBI cases referred not registered in HC registers because of
 - Lack of revised registers
 - Absence of trained staff
 - Caregivers not possessing referral slip
- Incompleteness and inconsistencies in demographic & clinical data evident in health facilities
 - Data quality especially poor for birth weight, gestational age, referral history

Table 2 summarizes what emerged from both the qualitative and quantitative data on factors that influence adherence to referrals.

Figure 2: Number of PSBI cases seen and referred at health post level, by zone (HP register data)

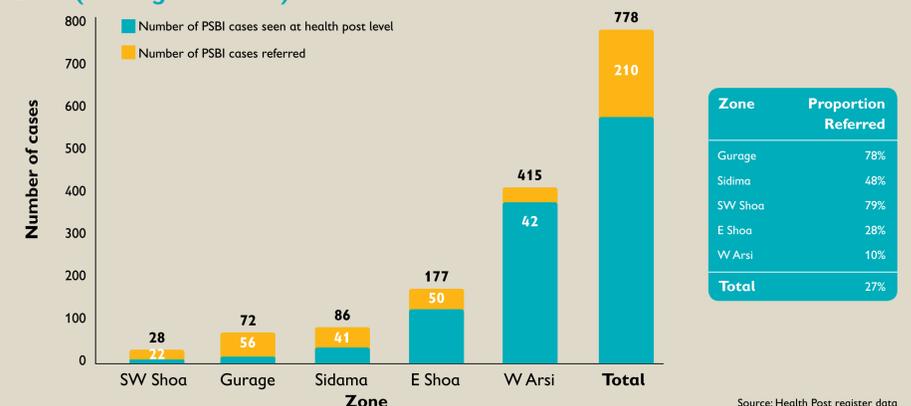


Table 2: Summary of findings on what affects referral adherence

	Facilitators	Barriers
Caretaker-related	<ul style="list-style-type: none"> • Illness: Perceived seriousness/severity of illness • Caretaker: mother's education, age (older), support from caretaker's spouse, prior positive experience of referral, spouse occupation • Perception of referral facility: higher level facilities, easy geographic access 	<ul style="list-style-type: none"> • Illness: Perceived mild symptom of illness • Caretaker: Positive attitude toward HEW's competence in treating diseases • Perception of referral facility: Perceived availability of drugs and supplies at health posts, fear of service cost (transport and medical care), fear of unfriendly situation or long waiting time at higher facilities
System/provider-related	<ul style="list-style-type: none"> • Communication with families: Provision of information about the seriousness of illness and superior quality of care at referral facility, provision of referral slip • Communication between facilities: regular communication between the various levels of facilities • Practice of health provider: Psychosocial and physical support to mothers, adherence to the national protocol, immediate and subsequent follow-up visit to ensure adherence 	<ul style="list-style-type: none"> • Communication between facilities: Irregular meetings between facilities, lack of communication about PSBI cases, lack of referral slips or revised registers • Practice of health provider: Self-confidence and perceived competence of HEWs to manage PSBI at HP, different treatment guidelines of PSBI cases at HPs and HCs, workload constraints • Referral facility: Medical care cost (medication and admission) at destination facility

Data sources: HC and HP registers, household survey, and IDIs

“HEWs are not sending referral slip, but at times make phone call[s], and the register does not have a column to enter referral cases. We also do not have the trend of sending written feedback to HPs.”

– Health worker at health centre

CONCLUSIONS

- Strong functional referral systems are an essential part of the CBNC program.
- Referral practices needing attention include universal referral offer, use of referral slips, pre-referral treatment according to national guidelines, improved inter-facility communication and proper record keeping.
- Additional institutional capacity strengthening of the HPs to manage PSBI cases is necessary to optimize CBNC.