Impact of Action-Oriented Training and/or Mailed Print Material on Retailer Practices: Safe Dispensing, Correct Advice, and Appropriate Referral for Diarrhoea, ARI, and Pregnancy

Submitted by

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Executive Summary

Study Objective and Method

A study was conducted with the overall objective to determine whether focused, small-group, face-to-face training (combined with reinforcement materials) and/or audit-feedback could improve the quality of dispensing practices, home-care advice, and referral advice given to parents for diarrhoeal disease and acute respiratory infection, and pregnant woman by drug retailers in Nepal.

The study was a four-way design and the four groups consisted of small group training, small group training followed by audit feedback, mailed printed materials followed by audit-feedback, and control. The study was conducted in three regions of western Nepal and the sample included randomly selected two hill and two terai (plains) districts from each region. The sample included 342 drug retailers in the baseline. The study exercised "surrogate" customers and retailer interviews techniques. "Surrogate" customers and interviews were used for baseline data collection and in the second follow-up assessment. Only “Surrogate” customers were used for data collection in the first follow-up assessment. The first and second follow-up assessments were carried out two and five months after intervention respectively. For validity testing, one exit interview on ordinary patient was carried out in every district during base line for each problem.

Acute Childhood Diarrhoea

Retailer knowledge of the features of mild dehydration was improved significantly up to five months with training combined with audit feedback. This intervention was also effective in significant improvement in referral knowledge up to five months.

None of the intervention was effective to improve ORS knowledge significantly.
The training alone was effective in significantly improving fluid/feeding advice giving practice up to two months. Similarly, training combined with audit feedback was effective significantly in improving fluid/feeding advice giving practice up to two months. The training alone was also effective significantly in decreasing antimicrobial dispensing practice up to two months.

None of the intervention was effective in significant improvement in ORS dispensing, history taking and referral practices.

There were some important associations between knowledge and practices.

The retailers’ practices were similar to their practices with ordinary patients.

**Acute Respiratory Infection in a Child**

Retailer knowledge of features of severe pneumonia was improved significantly up to five months with training alone. None of the intervention was effective to significantly improve the knowledge of referral features.

The training alone was effective in significantly improving fluid/feeding advice giving practice as well as use of antibacterials in pneumonia up to five months. The training alone also improved significantly the use of cotrimoxazole and decreased significantly the use of cold preparations alone in pneumonia up to two months.

Similarly, the training combined with audit feedback was effective in significantly improving fluid/feeding advice giving practice but up to two months only. However, the intervention was effective in significantly improving use of antibacterials in pneumonia up to five months.

None of the intervention was effective in significant improvement in history taking and referral practices in pneumonia.

There was no significant association between knowledge and practices in severe ARI.

The retailers’ practice for antibacterials was similar to their practice with ordinary patients.
Anaemia in Pregnancy

Retailers knowledge of referral features in pregnancy was improved significantly up to five months with training alone and training combined with audit feed-back.

The training alone was effective in significantly improving eating advice giving practice as well as use of iron preparations up to two months.

None of the intervention was effective in significant improvement in history taking, not dispensing drug and referral practices.

A significant association between knowledge on harmful effects of drugs in pregnancy and use of iron was observed.
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I. INTRODUCTION

Sale of modern medicines by untrained peddlers, general merchants, and other drug sellers is common throughout the developing world. Community-based studies from Africa, Asia, and Latin America have found that up to 70% of illness episodes are self-treated with modern pharmaceuticals [Haak, 1988; Ferguson, 1981; Kroeger, 1983; Abosede, 1983; Nyazema, 1983]. Drug sellers operating in the "informal sector" are often the first source of health care outside the home.

Public acceptance and appreciation of the private drug seller's role has been clearly recognized [Igun, 1987; Van der Geest, 1988]. Reasons given by consumers for using retailers include expediency (little time is spent waiting for service), convenience (drug sellers are nearby), efficacy (their drugs work), dependability of supply, and reasonable cost [Igun, 1987].

It is of concern, however, that private drug sellers generally have little formal education or professional training [Ferguson, 1981; Wolffers, 1987]. Problems with self-medication and with non-therapeutic retailer practices are well documented [Lansang, 1990; Tomson, 1986; Cunningham, 1970; Van der Geest, 1988b]. Regulatory approaches to controlling such sales, widely endorsed on paper through national legislation, require a cadre of professional regulatory staff and enforcement mechanisms which are too often economically and politically unfeasible.

WHO developed guidelines for improving the diarrhoea treatment practices of drug sellers through persuasive educational methods [WHO, 1993]. Controlled trials in Kenya and Indonesia have demonstrated the effectiveness of these guidelines in increasing dispensing of ORS, reducing dispensing of antidiarrhoeals, and improving history-taking.

Can similar approaches be effective in other environments? Can the focus of such labour-intensive interventions be broadened to include other priority health problems? Can the content be broadened to include correct advice and appropriate referral, as well as safe dispensing?
Building on a formative field study conducted in 1993 with WHO/CDD support, this study seeks to answer these questions in Nepal—one of the poorest, least urbanized countries in the world.

In June and July of 1993 a study was conducted in three regions of western Nepal to investigate the current knowledge and practices of drug retailers with regard to three common conditions which are responsible for substantial morbidity and mortality in the country -- diarrhoeal disease, acute respiratory infection, and iron-deficiency anaemia in pregnancy. The study exercised three different techniques: undetected "surrogate" customers asking for advice in treating family members with the condition, in-depth interviews with retailers, and focus group discussions with retailers. In this way, the researchers were able to find out both retailers stated impressions of their own practice, their actual practice when they are not being openly observed, and numerous details about their background, present understanding, influences, motivations, and attitudes. The sample included 112 retail shops equally distributed in the three regions (West, Mid West, and Far West) and in both hill and terai areas.

Because of the many infant and child deaths which are preventable through early, appropriate treatment; because of the key role drug sellers play as many families' first illness-related contact outside the home; because of the many retail outlets distributed throughout the country; and because of the demonstrated capacity of the MOH Department of Drug Administration to conduct retailer training, it seems worthwhile to determine whether a focused drug retailer refresher course can teach safe dispensing, correct advice, and appropriate referral practices which are healthy -- perhaps even lifesaving -- while still being profitable. This approach would benefit from the recent HMG policy change allowing drug retailers to recommend cotrimoxazole for ARI.

The report covers baseline and details of interventions as well as first and second follow-up assessments at two and five months.
2. PURPOSE AND SIGNIFICANCE

2.1. Study Objectives

The overall objective of the study was to determine whether 1) focused, small-group, face-to-face training (combined with reinforcement materials) and/or 2) audit-feedback can improve the quality of dispensing practices, home-care advice, and referral advice given to parents and pregnant women by drug retailers in Nepal. Interventions concentrated on diarrhoeal disease, acute respiratory infection, and iron-vitamin supplementation during pregnancy to:

- promote safe dispensing, correct advice, and appropriate referral for acute diarrhoea in children by encouraging use of ORS, discouraging use of antibiotics and antidiarrhoeals, and teaching appropriate referral guidelines for seriously ill children.

- promote safe dispensing, correct advice, and appropriate referral for acute respiratory infections in children by encouraging use of simple, safe, symptomatic products, discouraging use of antibiotics other than cotrimoxazole, and teaching appropriate referral guidelines for seriously ill children.

- promote safe dispensing, correct advice, and appropriate referral for pregnancy by teaching retailers which locally available vitamin-mineral combinations are most appropriate during pregnancy and which products should always be avoided during pregnancy.
2.2 Hypotheses

The study hypotheses were:

- Improving the knowledge and skills of retailers for drug recommendation, advice, and referral for diarrhoea, ARI, and pregnancy will motivate retailers to provide better service, advice and referral.

- Changes in the behaviour of retailers in regard to these problems will improve primary health care.

- Training materials and findings from this study can be used in designing an on-going training course for retailers which focuses on these three problems.

2.3 Significance of Study

In most Asian countries the vast majority of pharmaceutical expenditures are made through the private sector; private sector drug outlets far exceed government health facilities in number; and drug retailers are frequently a family's first point of contact with modern health care. Despite these realities, little effort has been made to find positive ways of involving private retailers in child survival and safe motherhood activities.

Positive approaches toward drug retailers have generally been in the form of "social marketing" efforts promoting single products such as contraceptives or ORS. Few programmes have provided focused, action-oriented teaching for drug retailers on safe dispensing and appropriate advice for a small selection of health conditions such as diarrhoea, ARI, and pregnancy-related iron-vitamin deficiency.
In countries with limited resources, training focused on only one problem such as diarrhoea and training focused only on dispensing (to the exclusion of advice-giving and referral of serious cases) may be seen as too narrow to warrant national implementation.

Though drug retailers are clearly motivated by economic self-interest, there is no benefit to them in pursuing unhealthy practices if they can be shown how to find profit in healthy dispensing and referral practices. Preventable customer deaths are bad for business. By contrast, sale of oral rehydration products, safe cough and cold preparations, and appropriate vitamin-mineral products can be profitable. In addition, referral of serious cases of diarrhoea, ARI, and pregnancy complications should be infrequent enough not to adversely affect profits.

If retailers can be taught to find profit in safe dispensing and appropriate referral for selected primary care problems, then an important new cadre of frontline health care workers will be added to child survival and safe motherhood efforts, with the only added cost being the initial training program and/or cost of audit-feedback.

3. STUDY DESIGN

3.1 Overall Approach and Design

The study was a pre-post comparison of two interventions randomly allocated to four different drug retailer study groups. The interventions were action-oriented, small-group, face-to-face training (combined with reinforcement materials), and (2) audit-feedback via registered mail using retailer-specific surrogate customer data.
The four study groups consisted of:

(a) No intervention
(b) Mailed Printed materials, followed by Audit-feedback
(c) Small-group training only
(d) Small-group training, followed by audit-feedback

The study included 352 randomly selected retailers from 12 districts, stratified and randomized within terai (southern jungle and plains) and hill areas and within three administrative regions. Within these strata, districts were randomized to receive or not receive training. Separate training were given in each district. Audit-feedback was allocated randomly to half the retailers in each district. The intervention allocation is presented graphically on the following page.

Outcomes were measured by surrogate customer visits and retailer interviews before intervention (S&I-1) and second follow-up assessment. In the first follow-up assessment only surrogate customer visits were used. In addition, a cost assessment to carry out the research, one-time development, and recurrent implementation costs of both interventions was also done.

3.2 Structure of Interventions

Although there are a number of options for training activities to achieve changes in knowledge and practices, interventions used by the team for this study were as follows:
• **Small Group face-to-face** -- A small group (10-15) of drug sellers within a district were invited to a meeting for a presentation and discussion of treatment recommendation. The training was divided into three sessions spread over 2-3 days depending on retailer’s convenience, each session not exceeding three hours. Each session included group works as well as interactive discussion by all members of the group. Experienced action-oriented trainer and senior most available health worker in the public sector health facilities facilitated the training.

• **Printed Materials by Post** -- It included educational materials used in the training. It was sent by registered mail.

• **Audit-Feedback** -- Individual drug seller behaviour was examined and evaluated, then the findings were presented to the seller, compared with the general behaviours found among his or her peers and the ideal behaviour. It was also sent by registered mail.
SUMMARY OF INTERVENTIONS

1. **SMALL-GROUP TRAINING**

   **Training Programme**
   - Small in size (15 or fewer)
   - Facilitated by experienced action-oriented trainer
   - Co-facilitated by senior-most available local health provider in the health facility
   - Two to three days
   - Limited content, but repeated in different ways
   - Active learning methods: role play, case study, interactive discussion.

   **Reinforcement Materials**
   - Well-indexed course reference manual
   - Flip chart (key elements of history-taking, dispensing, advice, referral, and key messages aimed at customers)
   - Posters with the key messages from WHO and UNICEF on harmful effects of using drugs in diarrhoea, and proper management of diarrhoea.
   - With the credibility of the Institute of Medicine and INRUD

2. **AUDIT-FEEDBACK** (Annex C)

   - Using retailer-specific data from surrogate customer encounters
   - Feedback sent by registered mail
   - Individual feedback comparing retailers' own practice with colleagues and expected good practice
   - Feedback presented in clear format

3. **MAILED PRINT MATERIALS**

   - Educational Materials used in the training programme (photocopy of course reference manual, flip chart and posters)
4 DETAILED METHODOLOGY

4.1 Design

The study was a four-way design with a total study sample (n) of 352 in the baseline. A baseline study was conducted, collecting a limited number of measurable knowledge and practice data for which changes were deemed achievable. The baseline data were used to measure changes, which follow the interventions. After the baseline study, interventions were implemented in the sequence below.

Timing and Sequence of Data Collection and Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline</th>
<th>Small-group</th>
<th>Mailed</th>
<th>Audit</th>
<th>First follow</th>
<th>Second follow</th>
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<tbody>
<tr>
<td>Development</td>
<td>1-4</td>
<td>5</td>
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<td>Study month</td>
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(a) No intervention: S&I-1 - - - S-2 S&I-3

(b) Mailed Print Materials+Audit feedback: S&I-1 - INT-2 INT-3 S-2 S&I-3

(c) Small-Group Training only: S&I-1 INT-1 - - S-2 S&I-3

(d) Small-Group Training+ Audit-feedback: S&I-1 INT-1 - INT-3 S-2 S&I-3

NOTES:

S&I = Surrogate customer and retailer interview
S  = Surrogate customer
INT = Intervention (1= Small-Group Training, 2= Mailed Print Materials
3  = Audit-Feedback)
There were 12 districts divided among three regions (West, Midwest, and Far West). Within each region, there were two hill and two terai districts. Small group training were allocated randomly over the pair of districts in each region's terai or hill area. In other words, there was training in one hill district and one terai district in each region, and no training in the remaining two districts. In districts, which did receive the training intervention, retailers were trained in small group of 10-15 retailers. Thus, there were two to three group training in each district.

The audit-feedback intervention was randomly allocated to half of the retailers in each of the 6 training districts. In the remaining 6 districts, half of the retailers were randomly allocated to mailed print materials followed by audit-feedback. The other halves served as control.

Identical survey instruments (surrogate customer and retailer interview) were used for baseline data collection and in the second follow-up assessment at 5 months after intervention. In the first follow-up assessment at 2 months after intervention only surrogate customer visits were used.

Retailers who did not attend the course were tried to be provided with the course manual and reinforcement materials, since they could not be traced out, they were all dropped from the study.

4.2. Sample Selection

The study was conducted in 12 districts, stratified and randomised within terai and hill areas of the Western, Mid Western and Far Western regions of Nepal. Nepal has five regions. Only the three regions west of Kathmandu were studied. The sample covered 6 districts each from terai and hills areas.

In selecting study areas, any district with fewer than 20 retailers was excluded. Within the district, retailers were stratified by their distribution in bazaars. A minimum of six retailers
were randomly selected from each bazaar, so that at least 20 retailers were sampled from each hill district and 40 retailers from each terai district. For logistical reasons, any hill bazaar located more than one day's walk from the district headquarters was excluded.

The sample included the following hill districts (number of retailers sampled: Gulmi (18), Baglung (20), Baitadi (20), Achham (20), Dang (20), and Salyan (14). Terai districts were Nawalparasi (40), Rupandehi (40), Kailali (40), Kanchanpur (40), Bardia (40), and Banke (40). The total number of retailers randomly selected for the study were 352 in the baseline. However, 10 retailers who did not attend the training course and could not be traced out for providing course manual and reinforcement materials were dropped from the study. Thus, the study sample was 342. During the first follow-up assessment 17 retailers were closed, some of them permanently. In the second follow-up assessment 28 retailers were closed, some of them permanently. Thus, the sample was 314 retailers.

The training district were Baglung, Achham, Dang, Nawalparasi, Kanchanpur and Bardia.

The baseline study was conducted during November 1996. The small group training was conducted in December 1996. The mailed print materials were also sent in December 1996. The audit feedback was sent in January 1997 and the first follow-up assessment was carried out in March 1997. The second follow-up was done in June 1997.

### Number of Retailers

<table>
<thead>
<tr>
<th>Baseline (n)</th>
<th>First follow-up</th>
<th>Second follow-up</th>
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<td>352</td>
<td>325</td>
<td>314</td>
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4.3. **Survey Instruments**

Retailers' dispensing and advice-giving practices were assessed through the surrogate customer method. Retailer knowledge of each health condition, acceptable treatments, and referral criteria for each condition were assessed through individual interviews conducted shortly after the surrogate visits in baseline and in second follow-up assessment.

**Surrogate Customer** Measurement of retailer practices was done entirely through surrogate customer encounters. These encounters were used to assess history-taking, dispensing practices, advice-giving, and referral. Recruitment and training of surrogates is described later in the section on implementation.

One surrogate each for diarrhoea, ARI, and pregnancy visited every retailer during each round of assessment. Visits were spaced at least two hours apart to minimize retailer suspicions.

Scenarios for the surrogates were as follows:

**Parent of a Child with Diarrhoea** -- The case was a child with simple diarrhoea, requiring only ORS and home fluids:

"My youngest daughter has had watery diarrhoea since yesterday -- 5-6 motions yesterday, no better today."

If asked, the child is three years old, no vomiting, no fever, no blood, no mucous, eating a little less than usual, playing a little but not normally, maybe a little weak, wants to drink, no medicine used.

**Parent of Child with Cough** -- The case was a child with very severe pneumonia, requiring at least antibiotics and preferably referral.
"My five-year-old son has had a cough and cold for the last three days."
If asked, he has a runny nose, fever, indrawing, difficulty breathing, very rapid breathing, very lethargic, not taking fluid well, cyanosis, home cough mixture used.

**Husband of a Pregnant Woman** -- The case was a pregnant woman who should receive an iron-folate preparation, but who also has indications for referral.

"My pregnant wife is pale-looking and feeling weak."
If asked, she is seven months pregnant with her second child, no vomiting; no medicine; history of unspecified difficulties with her first pregnancy; has considerable swelling of feet, hands, and face; appetite poor.

Also during the formative study, surrogate scenarios and dress were varied to provide for different child sex and implied socioeconomic status, no significant differences were noted in retailer response to these different groups of surrogates. Therefore, all surrogates were dressed to give a common impression of socio-economic status and surrogate child sexes were standardised, as in the above scenarios. The surrogate debriefing form developed and used by the investigators in the formative study were revised after field testing and used (Kafle et.al, 1994).

**Retailer Interviews** -- Short retailer interview questionnaires were used to assess changes in knowledge about each of the three target conditions, about treatment alternatives, and about referral criteria. These knowledge portions of the interview were the same for baseline and second follow-up assessment.

The baseline questionnaire included added questions on educational level, languages spoken, and other relevant socio-economic indicators.
A few open-ended questions were included, in the second follow-up assessment to find out whether flip chart and poster were present and also to find out the source of these materials.
**Exit Interview**: For validity testing, one exit interview on ordinary patient was carried out in every district during baseline for each problem.

### 4.4 Recruitment, Training, and Supervision of Survey Team

The survey was carried out by three teams. Three supervisors and six surrogates were recruited in Kathmandu two weeks before the field visit. All three supervisors were Master in Public Health students with previous experience in field research and five or six years experience as prescribers in government health institutions. The six surrogates, four with high school qualifications and the other two with more than that, came from different regions of Nepal but were living in the capital. Three additional surrogates, one for each of the three teams, were recruited and trained locally in the field by investigators/supervisors and they were always used as diarrhoea surrogates. Thus, each team had two surrogates recruited in Kathmandu, one supervisor, and one investigator.

Supervisors as well as surrogates recruited in Kathmandu were trained to carry out their assigned work and all were involved in field testing of the instruments before leaving Kathmandu. All the data collected by each team was collected during a single trip westward. It took up to a month for each team to complete its work, at a rate of one bazaar every one or two days.

### 4.5 Development of Course Contents and Training Materials, and Training of Trainers

A course contents for the training programme developed by the Investigators was discussed and finalised by a group comprised of Director General of Health Services; Director General of Department of Drug Administration; Directors of Logistic Management Division, Child Health Division and National Health Training Division; Head of the Obstetric and Gynaecology Department, Institute of Medicine; Secretary General of Nepal Chemist and Druggist Association.
A flip chart and posters developed based on course contents were revised several times in discussion with members of Nepal Chemist and Druggist Association before field-testing. It was then field tested in one of the district not included in the study and finalised.

A training manual and trainers guide were developed. The trainers were Medical graduates from the Institute of Medicine with experience in conducting action oriented training. They were trained and practised for two days on course contents and methodology to be applied in the training.

4.6 Data Analysis

The data were entered in Excel and were analysed using SPSS (6.1) package. Analysis of the impact of intervention was based on control-intervention, pre-post comparison using individual retail shop as the unit analysis. The group t-test was used to compare the changes between the control and interventions.

To find out correlation between knowledge and practice, the change in pre-post knowledge and pre-post practices were compared within the group.

4.7 Secondary Coding

Diarrhoea

Retailer knowledge of mild dehydration was considered “excellent” if during the interview they could identify three features of mildly dehydrated child; less urine, increased thirst and unwell/restless. Retailers were assessed as “good” if they could identify any two of above, “fair” if they could identify less urine, and “poor” if unable to identify any of the features.
Retailer knowledge of severe dehydration was considered "excellent" if during the interview they could identify three of four features of a severely dehydrated child: sunken eyes, sunken fontanelle, no urine for six hours, and not taking liquids. Retailers were assessed as "good" if they could identify any two of the four, "fair" if sunken eyes or no urine for 6 hours, and "poor" if unable to identify any of the features.

ORS knowledge was defined as "excellent" if retailers believed ORS to be effective for a child with diarrhoea, and if they could state unprompted that ORS both treats dehydration and prevents dehydration. "Good" knowledge meant knowing ORS was effective and either prevented or treated dehydration. "Fair" if they could identify either ORS to be effective or prevents or corrects dehydration. "Poor" knowledge of ORS meant the retailers did not recognise ORS as effective.

Adequacy of knowledge for referral was assessed by counting the number of key features requiring referral identified by the retailers during the interview. A total of four features were possible: sunken eyes, sunken fontanelle, lack of urine, and not taking liquids.

"History-taking adequacy" was defined in terms of three essential questions about a child with diarrhoea: urination, taking of fluids or ORS, and presence of blood in the stool. Retailers were graded “excellent” if they asked the surrogate about all three, “good” for any two, “fair” for asking about either urination or fluid-taking, and “poor” for all others.

ARI

Retailer knowledge about mild ARI was graded according to their ability to identify in interview two key features: mild fever and running nose. A "good" rating went to those identifying both features, "fair" for any one, and "poor" for zero or none.
Retailer knowledge about very severe ARI (pneumonia) was graded according to their ability to identify in interview two key features: indrawing of the chest, and inability to take fluids. A "good" rating went to those identifying both features, "fair" for any one, and "poor" for zero or none.

Adequacy of knowledge for referral was assessed by counting the number of key features requiring referral identified by the retailers during the interview. They were: indrawing chest, rapid breathing, noisy breathing, and extreme sleepiness.

The "adequacy of history-taking" variable focused on two key features: indrawing chest and ability to take fluids. History-taking was considered “good” if they asked surrogate about both, “fair” if they asked about either, and “poor” if they asked about neither one.

**Pregnancy**

Adequacy of knowledge for referral was assessed by counting the number of key features requiring referral identified by the retailers during the interview. These were: bleeding, leaking of fluid, excessive vomiting, problems with last pregnancy, and severe abdominal pain.

The quality of history-taking from surrogate "husbands" of pregnant women was determined by how many out of five key questions the drug sellers asked. The questions the researchers were interested in were about the duration of the pregnancy, gravida, vomiting, swelling of extremities, and any medications taken. An "excellent" rating meant asking four or five of these, "good" meant two or three, "fair" just one, and "poor" none at all.
RESULTS

5 DIARRHOEAL DISEASES (Tables I-IV)

5.1 PRACTICES

5.1.1. History-taking

There was no significant difference in history taking practice in any intervention group compared to control in the first and second follow-up assessments.

5.1.2. Advice-giving

There was a significant increase in fluid/feeding advice giving practice with training compared to control in the first follow-up assessment (p = 0.038).

There was a significant increase in fluid/feeding advice giving practice with training + audit feedback compared to control in the first follow-up assessment (p = 0.013).

In the second follow-up assessment, no significant differences were observed in advice giving practices including fluid/feeding practice in any intervention group compared to control.

5.1.3. Referral

There was no significant difference in referral practice in any intervention group compared to control in the first and second follow-up assessments (except with audit feedback in the second follow-up assessment).
5.1.4. **Dispensing Practices**

There was no significant difference in ORS dispensing practice in any intervention group compared to control in the first and second follow-up assessments.

There was a significant decrease in anti-microbial dispensing practice with training compared to control in the first follow-up assessment (p = 0.043).

5.2 **KNOWLEDGE**

5.2.1. **Knowledge of dehydration**

There was a significant increase in "excellent" or "good" knowledge of mild dehydration with training + audit feedback compared to control in the second follow-up assessment (p= 0.004). And there was a significant decrease in "poor" knowledge of mild dehydration in this group compared to control in the second follow-up assessment (p= 0.008).

There was no significant difference in knowledge of severe dehydration in any intervention group compared to control in the second follow-up assessment.

5.2.2. **Knowledge of ORS**

There was no significant difference in knowledge of ORS in any intervention group compared to control in the second follow-up assessment.

5.2.3. **Referral knowledge**

There was a significant increase in "1 referral feature" knowledge with training + audit feedback compared to control in the second follow-up assessment (p= 0.012). And there was significant decrease in "zero referral feature" knowledge in this group compared to control in the second follow-up assessment(p= 0.043).
5.3 Knowledge versus practices

There was a significant association between the "poor" knowledge of mild dehydration and poor history taking with training + audit feedback.

There was a significant association between “excellent or good” knowledge of mild dehydration and dispensing of ORS with training + audit feedback. Similarly, there was a significant association between “fair” and “poor” knowledge of mild dehydration and giving specific advice on fluid/feeding, in this group.

There was a significant negative association between "excellent or good" knowledge of ORS and dispensing of ORS with audit feedback.

There was a significant association between "excellent or good" knowledge of ORS and fluid/feeding advice practice with audit feedback.

5.4 Findings from exit interview

The findings of retailers’ practices for 12 ordinary patients of diarrhoea in children were similar to surrogates. The history taking practice was all “poor” and ORS alone dispensing was none (100% “poor” history taking with ordinary patients versus 93.8% with surrogates and 0% ORS alone dispensing to ordinary patient versus 2.3% to surrogates). However, the fluid/feeding advice giving practice was higher to ordinary patients compared to “surrogates” (16.6% for ordinary patients versus 9.8% for surrogates).
# Table I: History Taking, Advice-giving, and Referral for Diarrhoea

First and Second Follow-up Assessments

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training</th>
<th>Control Vs Training + Audit feedback</th>
<th>Control Vs Audit Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre (n=84)</td>
<td>Post 1 (n=80)</td>
<td>Post 2 (n=74)</td>
<td>Pre (n=86)</td>
<td>Post 1 (n=83)</td>
<td>Post 2 (n=80)</td>
<td>Pre (n=86)</td>
</tr>
<tr>
<td>1</td>
<td><strong>ADEQUACY OF HISTORY TAKING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent or Good (%)</td>
<td>1.2</td>
<td>2.5</td>
<td>0.0</td>
<td>5.8</td>
<td>3.6</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>Fair (%)</td>
<td>1.2</td>
<td>0.0</td>
<td>1.4</td>
<td>5.8</td>
<td>1.2</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Poor (%)</td>
<td>97.6</td>
<td>97.5</td>
<td>98.6</td>
<td>88.4</td>
<td>95.2</td>
<td>97.4</td>
</tr>
<tr>
<td>2</td>
<td><strong>ADVICE GIVING PRACTICES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes (% Total)</td>
<td>15.5</td>
<td>27.5</td>
<td>27.0</td>
<td>22.1</td>
<td>34.9</td>
<td>31.3</td>
</tr>
<tr>
<td></td>
<td>Fluid /feeding (% yes)</td>
<td>4.8</td>
<td>11.3</td>
<td>18.9</td>
<td>10.5</td>
<td>15.0</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td>Drug effects information (% yes)</td>
<td>0.0</td>
<td>13.8</td>
<td>0.0</td>
<td>0.0</td>
<td>14.5</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Re-consultation (% yes)</td>
<td>6.0</td>
<td>5.0</td>
<td>5.4</td>
<td>12.8</td>
<td>3.6</td>
<td>3.8</td>
</tr>
<tr>
<td>3</td>
<td><strong>REFERRAL PRACTICES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refer (%)</td>
<td>2.4</td>
<td>8.8</td>
<td>5.5</td>
<td>5.9</td>
<td>8.4</td>
<td>11.3</td>
</tr>
</tbody>
</table>

s = significant \( p = 0.038 \)
ns = not significant \( p = 0.013 \)
s1 \( p = 0.034 \)
Table II: Dispensing Practices for Diarrhoea  
First and Second Follow-up Assessments

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training + Audit feedback</th>
<th>Control Vs Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post I</td>
<td>Post II</td>
<td>Pre</td>
<td>Post I</td>
<td>Post II</td>
</tr>
<tr>
<td>1 Number of drugs per customer (mean)</td>
<td>1.6</td>
<td>1.3</td>
<td>1.5</td>
<td>1.6</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>2 ORS dispensed (% yes)</td>
<td>40.5</td>
<td>37.6</td>
<td>39.2</td>
<td>37.1</td>
<td>41.0</td>
<td>36.0</td>
</tr>
<tr>
<td>3 Antimicrobial product dispensed (%)</td>
<td>58.3</td>
<td>51.3</td>
<td>39.2</td>
<td>55.8</td>
<td>47.0</td>
<td>45.0</td>
</tr>
<tr>
<td>Single antimicrobial</td>
<td>51.2</td>
<td>47.5</td>
<td>43.2</td>
<td>45.3</td>
<td>45.0</td>
<td>54.0</td>
</tr>
<tr>
<td>Multiple antimicrobials</td>
<td>7.1</td>
<td>3.8</td>
<td>2.7</td>
<td>10.5</td>
<td>2.4</td>
<td>3.8</td>
</tr>
<tr>
<td>4 Antidiarrhoeal product dispensed (%)</td>
<td>39.3</td>
<td>36.3</td>
<td>44.6</td>
<td>45.3</td>
<td>45.0</td>
<td>33.0</td>
</tr>
<tr>
<td>5 Pattern of drug dispensing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. No drug dispensed (%)</td>
<td>3.6</td>
<td>6.3</td>
<td>4.1</td>
<td>4.7</td>
<td>6.0</td>
<td>10.0</td>
</tr>
<tr>
<td>b ORS only (%)</td>
<td>2.4</td>
<td>11.3</td>
<td>4.1</td>
<td>2.3</td>
<td>9.6</td>
<td>7.5</td>
</tr>
</tbody>
</table>

a. Antimicrobials single ingredient or combination products, no antidiarrhoeals products
b. Antidiarrhoeal products may have antimicrobial components.

s = significant  
s (p = 0.043)
ns = not significant

22
Table III: Retailer Knowledge, Dehydration, ORS and Referral for Diarrhoea
Second Follow-up Assessment

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control Vs Training</th>
<th>Control Vs Training + Audit feedback</th>
<th>Control Vs Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>MILD DEHYDRATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent or Good (%)</td>
<td>8.3 19.1</td>
<td>5.8 38.4</td>
<td>21.0 20.9</td>
<td>15.1 21.0</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Fair (%)</td>
<td>3.6 0.0</td>
<td>0.0 1.2</td>
<td>1.2 1.2</td>
<td>0.0 0.0</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Poor (%)</td>
<td>79.8 70.2</td>
<td>87.2 53.5</td>
<td>73.3 68.6</td>
<td>73.3 65.1</td>
<td>ns</td>
</tr>
<tr>
<td>2</td>
<td>SEVERE DEHYDRATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent or Good (%)</td>
<td>17.9 26.2</td>
<td>19.7 24.5</td>
<td>21.0 29.1</td>
<td>11.6 20.9</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Fair (%)</td>
<td>27.4 39.3</td>
<td>36.0 45.3</td>
<td>31.4 30.2</td>
<td>31.4 38.4</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Poor (%)</td>
<td>44.0 25.0</td>
<td>43.0 23.3</td>
<td>38.4 26.7</td>
<td>44.2 27.9</td>
<td>ns</td>
</tr>
<tr>
<td>3</td>
<td>ORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent or Good (%)</td>
<td>10.7 4.8</td>
<td>9.3 4.7</td>
<td>15.1 5.9</td>
<td>8.1 4.7</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Fair (%)</td>
<td>75.0 81.0</td>
<td>83.7 86.0</td>
<td>74.4 82.6</td>
<td>81.4 87.2</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Poor (%)</td>
<td>9.5 4.8</td>
<td>4.7 2.3</td>
<td>7.0 3.5</td>
<td>8.1 1.2</td>
<td>ns</td>
</tr>
<tr>
<td>4</td>
<td>REFERRAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two or more features</td>
<td>4.8 14.3</td>
<td>7.0 7.0</td>
<td>14.0 8.2</td>
<td>8.2 10.5</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>One feature</td>
<td>20.2 47.6</td>
<td>16.3 57.0</td>
<td>12.8 39.5</td>
<td>16.3 34.9</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Zero feature</td>
<td>75.0 38.1</td>
<td>76.7 36.0</td>
<td>73.3 52.3</td>
<td>75.6 54.7</td>
<td>ns</td>
</tr>
</tbody>
</table>

s = significant  ns = not significant

s1 (p = 0.004)
s2 (p = 0.008)
s3 (p = 0.012)
s4 (p = 0.043)
### Table IV: Mild Dehydration and ORS Knowledge versus History taking, Dispensing ORS and Fluid/Feeding Advice

<table>
<thead>
<tr>
<th>Practices (Second Post-Pre)</th>
<th>Dehydration Knowledge (Post-Pre)</th>
<th>ORS Knowledge (Post-Pre)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excellent or Good</td>
<td>Fair</td>
</tr>
<tr>
<td>1 TRAINING</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>a. Adequacy of history taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. ORS dispensed</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>f. Fluid/feeding advice</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>2 TRAINING + AUDIT FEEDBACK</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>a. Adequacy of history taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. ORS dispensed</td>
<td>s2</td>
<td>ns</td>
</tr>
<tr>
<td>f. Fluid/feeding advice</td>
<td>ns</td>
<td>s3</td>
</tr>
<tr>
<td>3 AUDIT FEEDBACK</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>a. Adequacy of history taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. ORS dispensed</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>f. Fluid/feeding advice</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>4 CONTROL</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>a. Adequacy of history taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. ORS dispensed</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>f. Fluid/feeding advice</td>
<td>s7</td>
<td>ns</td>
</tr>
</tbody>
</table>

s = significant
ns = not significant

s1 (p = 0.046)
s2 (p = 0.009)
s3 (p = 0.005)
s4 (p = 0.000)
s5 (p = 0.022 (negative correlation))
s6 (p = 0.020)
s7 (p = 0.015)
6. ACUTE RESPIRATORY INFECTIONS (Table V- VIII)

6.1 PRACTICES

6.1.1. History-taking

There was a significant increase in “good or fair” history taking practice with training compared to control in the second follow-up assessment (p = 0.047).

In the second follow-up assessment, there was a significant decrease in "poor" history taking practice with training compared to control (p = 0.045).

6.1.2. Advice-giving

There was a significant increase in fluid/feeding advice giving practice with training compared to control in the first and second follow-up assessments (p = 0.003 and 0.049 respectively).

There was a significant increase in fluid/feeding advice giving practice with training + audit feedback compared to control in the first follow-up assessment (p = 0.003).

6.1.3. Referral

There was a significant decrease in referral practice with training compared to control in the second follow-up assessment (p = 0.049).
6.1.4. Dispensing Practices

There was a significant increase in antibacterials dispensing practices with training compared to control in the first and second follow-up assessments (p = 0.003 and p = 0.001 respectively).

Similarly, there was a significant increase in antibacterials dispensing practice with training + audit feedback compared to control in the first and second follow-up assessments (p = 0.018 and p = 0.003 respectively).

There was a significant increase in cotrimoxazole dispensing practices with training compared to control in the first follow-up assessment (p = 0.003).

There was significant decrease in cold preparations alone dispensing practice with training compared to control in the first follow-up assessment (p = 0.042).

There was a significant increase in antibacterial alone dispensing practices with training + audit feedback compared to control in the second follow-up assessment (p = 0.018).

There was a significant increase in antibacterials alone dispensing practices with audit feedback compared to control in the second follow-up assessment (p = 0.045).

6.2 KNOWLEDGE

6.2.1. Knowledge of mild ARI

There was no significant change in knowledge of mild ARI in any intervention group compared to control in the second follow-up assessment.
6.2.2. **Knowledge of severe ARI**

There was a significant increase in "good or fair" knowledge of severe ARI (pneumonia) with training compared to control in the second follow-up assessment (p=0.019). And there was a significant decrease in "poor" knowledge in this group compared to control in the second follow-up assessment (p=0.016).

6.2.3. **Referral knowledge**

There was no significant change in referral knowledge with any intervention compared to control in the second follow-up assessment.

6.3 **Knowledge versus practice**

There was no significant associations between the knowledge of severe ARI and referral knowledge, and history taking, drug recommendations and referral practice in any group including the control.

6.4 **Findings from exit interview**

The findings of retailers practices for 10 ordinary patients of ARI in children showed 60% “poor” and 40% “good or fair” history taking practice (96.8% “poor” history taking and 3.2% “good or fair” history taking with surrogates). The antibacterials and cold preparations alone dispensing practices were 40% and 30% respectively (20.8% and 15.2% respectively to surrogates). The fluid/feeding advice giving practice was 10% to ordinary patients compared to 4.1% to “surrogates”.

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### Table V: History Taking, Advice giving, and Referral for ARI (Pneumonia)
First and Second Follow-up Assessments

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training</th>
<th>Control Vs Training + Audit feedback</th>
<th>Control Vs Training + Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre Post I Post II</td>
<td>Pre Post I Post II</td>
<td>Pre Post I Post II</td>
<td>Pre Post I Post II</td>
<td>Post I Post II</td>
<td>Post I Post II</td>
<td>Post I Post II</td>
</tr>
<tr>
<td></td>
<td>(n=84) (n=80) (n=74)</td>
<td>(n=86) (n=83) (n=80)</td>
<td>(n=86) (n=81) (n=80)</td>
<td>(n=86) (n=81) (n=80)</td>
<td>(n=86) (n=81) (n=80)</td>
<td>(n=86) (n=81) (n=80)</td>
<td>(n=86) (n=81) (n=80)</td>
</tr>
<tr>
<td>1 RETAILER HISTORY TAKING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequacy of history taking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good or Fair (%)</td>
<td>2.4 7.5 9.5</td>
<td>3.5 9.6 8.8</td>
<td>2.3 2.5 0</td>
<td>4.7 1.2 2.5</td>
<td>ns s1</td>
<td>ns ns ns</td>
<td>ns ns ns</td>
</tr>
<tr>
<td>Poor (%)</td>
<td>97.6 93 90.5</td>
<td>96.5 90.4 91.2</td>
<td>97.7 97.5 100.0</td>
<td>95.3 98.9 97.5</td>
<td>ns s2</td>
<td>ns ns ns</td>
<td>ns ns ns</td>
</tr>
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<td>2 ADVICE GIVING PRACTICES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (% Total)</td>
<td>15.5 33 27.0</td>
<td>18.6 10.8 32.5</td>
<td>22.1 25.9 8.8</td>
<td>18.6 24.7 16.3</td>
<td>ns ns</td>
<td>ns ns ns</td>
<td>ns ns ns</td>
</tr>
<tr>
<td>Fluid /Feeding advice (% yes)</td>
<td>0.6 11 5.5</td>
<td>2.3 15.6 7.5</td>
<td>8.1 8.7 0.0</td>
<td>5.3 4.3 5.0</td>
<td>s3 s4</td>
<td>s5 ns ns</td>
<td>ns ns ns</td>
</tr>
<tr>
<td>Reconsultation (% yes)</td>
<td>6.0 8.8 6.8</td>
<td>4.7 13.3 12.5</td>
<td>5.8 12.3 6.3</td>
<td>2.3 11.1 7.5</td>
<td>ns ns</td>
<td>ns ns ns</td>
<td>ns ns ns</td>
</tr>
<tr>
<td>3 REFERAL PRACTICES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refer (% yes)</td>
<td>15.5 13 12.2</td>
<td>8.1 13.2 16.3</td>
<td>11.6 12.4 10</td>
<td>4.6 11.1 16.3</td>
<td>ns s6</td>
<td>ns ns ns</td>
<td>ns ns ns</td>
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</tbody>
</table>

s = significant
ns = not significant

s1 (p = 0.047)
s2 (p = 0.045)
s3 (p = 0.003)
s4 (p = 0.049)
s5 (p = 0.003)
s6 (p = 0.049)
### Table VI: Dispensing Practices for ARI (Pneumonia)  
First and Second Follow-up Assessments

<table>
<thead>
<tr>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training + Audit feedback</th>
<th>Control Vs Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Post I</td>
<td>Post II</td>
<td>Pre</td>
<td>Post I</td>
<td>Post II</td>
</tr>
<tr>
<td>1 Number of drugs per customer (mean)</td>
<td>1.4</td>
<td>1.7</td>
<td>1.6</td>
<td>1.8</td>
<td>1.5</td>
</tr>
<tr>
<td>2 Antibacterials (% yes)</td>
<td>15.5</td>
<td>38.9</td>
<td>27.0</td>
<td>18.6</td>
<td>36.2</td>
</tr>
<tr>
<td>3 Co-trimoxazole (% yes)</td>
<td>4.8</td>
<td>23.8</td>
<td>14.9</td>
<td>8.1</td>
<td>14.5</td>
</tr>
<tr>
<td>4 Cold Preparation (% Yes)</td>
<td>21.4</td>
<td>30.1</td>
<td>29.7</td>
<td>17.5</td>
<td>32.6</td>
</tr>
<tr>
<td>5 Analgesics/Antipyretics (%Yes)</td>
<td>8.4</td>
<td>15.1</td>
<td>12.2</td>
<td>8.1</td>
<td>19.3</td>
</tr>
<tr>
<td>6 Pattern of Drug Dispensing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a No drug dispensed</td>
<td>14.3</td>
<td>8.8</td>
<td>9.5</td>
<td>5.8</td>
<td>10.8</td>
</tr>
<tr>
<td>b Cold preparations only</td>
<td>13.1</td>
<td>11.3</td>
<td>14.9</td>
<td>10.5</td>
<td>18.1</td>
</tr>
<tr>
<td>c Antibacterials only</td>
<td>4.8</td>
<td>8.8</td>
<td>4.1</td>
<td>5.8</td>
<td>6</td>
</tr>
<tr>
<td>d Other drugs and combinations</td>
<td>52.4</td>
<td>37.5</td>
<td>45.9</td>
<td>62.8</td>
<td>32.5</td>
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</tbody>
</table>

s = significant  
ns = not significant  
s1 (p = 0.003)  
s2 (p = 0.001)  
s3 (p = 0.003)  
s4 (p = 0.042)  
s5 p = 0.018  
s6 (p = 0.003)  
s7 p = 0.018  
s8 p = 0.041  
s9 p = 0.004  
s10 p = 0.045
<table>
<thead>
<tr>
<th>Table VII: Retailer Knowledge, ARI and Referral for ARI</th>
<th>Second Follow-up Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>Training + Audit feedback</td>
</tr>
<tr>
<td>Pre Post</td>
<td>Pre Post</td>
</tr>
<tr>
<td>1 MILD ARI</td>
<td></td>
</tr>
<tr>
<td>Good or Fair (%)</td>
<td>88.1 90.5</td>
</tr>
<tr>
<td>Poor (%)</td>
<td>7.1 0.0</td>
</tr>
<tr>
<td>2 SEVERE ARI (Pneumonia)</td>
<td></td>
</tr>
<tr>
<td>Good or Fair (%)</td>
<td>42.8 63.1</td>
</tr>
<tr>
<td>Poor (%)</td>
<td>51.2 26.2</td>
</tr>
<tr>
<td>3 REFERRAL</td>
<td></td>
</tr>
<tr>
<td>Two or more features (%)</td>
<td>26.2 52.3</td>
</tr>
<tr>
<td>One feature (%)</td>
<td>26.2 22.6</td>
</tr>
<tr>
<td>Zero feature (%)</td>
<td>47.6 25.0</td>
</tr>
</tbody>
</table>

s = significant ns = not significant
s1 (p = 0.019)
s2 (p = 0.016)
<table>
<thead>
<tr>
<th>Practices (Second Post-Pre)</th>
<th>Severe ARI Knowledge</th>
<th>Referral Knowledge (Post-Pre)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good or Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>1 TRAINING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. History taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. Antibiotics</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c. Referral</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>2 TRAINING + AUDIT FEEDBACK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. History taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. Antibiotics</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c. Referral</td>
<td>ns</td>
<td>$s$</td>
</tr>
<tr>
<td>3 AUDIT FEEDBACK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. History taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. Antibiotics</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c. Referral</td>
<td>ns</td>
<td>$s$</td>
</tr>
<tr>
<td>4 CONTROL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. History taking</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b. Antibiotics</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c. Referral</td>
<td>ns</td>
<td>ns</td>
</tr>
</tbody>
</table>

$s =$ *significant*  | ns = *not significant*  
$s$ $(p = 0.031)$
7. ANAEMIA IN PREGNANCY (Table IX-XII)

7.1 PRACTICES

7.1.1. History-taking

There was no significant difference in history taking practice in any intervention group compared to control in the first and the second follow-up assessments.

7.1.2. Advice-giving

There was a significant increase in eating advice giving practice with training compared to control in the first follow-up assessment ($p = 0.001$).

There was no significant increase in eating advice giving practice in any intervention group compared to control in the second follow-up assessment.

7.1.3. Referral

There was no significant change in referral practice in any intervention group compared to control in the first and second follow-up assessments.

7.1.4 Dispensing Practices

There was a significant increase in iron preparations (all types) dispensing practice with training compared to control in the first follow-up assessment ($p=0.036$).

There was no significant change in not dispensing drug in pregnancy in any intervention group compared to control in the first and second follow-up assessments.
7.2 Knowledge

7.2.1. Knowledge of drug use

There was no significant change in knowledge of drug use in any intervention group compared to control in the second follow-up assessment.

7.2.2. Referral knowledge

There was a significant increase in "2 or more referral features" knowledge with training and training + audit feedback compared to control in the second follow-up assessment (p= 0.022 and p= 0.009 respectively). Similarly, there was a significant increase in "1 referral feature" knowledge with audit feedback compared to control in the second follow-up assessment (p= 0.009). And there was a significant decrease in "0 referral feature" knowledge with all interventions compared to control in the second follow-up assessment (p=0.033, p=0.000 and p=0.044).

7.3 Knowledge versus practice

There was no significant association between referral knowledge and referral practice in any intervention group.

There was a significant association between "fair" knowledge on harmful effects of drugs during pregnancy and recommending iron preparations with training.
7.4 Findings from Exit Interview

The findings of retailers practices for 10 ordinary cases of pregnancy showed 10% “excellent or good”, 70% “fair” and 20% “poor” history taking practice compared to 12.9% “excellent or good”, 42.4% “fair” and 44.7% “poor” history taking practices with surrogates. The iron preparation (all types) dispensing practice was 90% to ordinary case compared to 71.9% to surrogates. The eating advice giving practice was 10% to ordinary case compared to 6.2% to surrogates.
Table IX: History Taking, Advice-giving, and Referral for Pregnancy
First and Second Follow-up Assessments

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training + Audit feedback</th>
<th>Control Vs Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Post II</td>
</tr>
<tr>
<td>(n=84)</td>
<td>(n=80)</td>
<td>(n=74)</td>
<td>(n=86)</td>
<td>(n=83)</td>
<td>(n=80)</td>
<td>(n=86)</td>
</tr>
<tr>
<td>1 RETAILER HISTORY TAKING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent or Good (%)</td>
<td>13.1</td>
<td>8.6</td>
<td>6.8</td>
<td>14.0</td>
<td>16.7</td>
<td>13.8</td>
</tr>
<tr>
<td>Fair (%)</td>
<td>36.9</td>
<td>51.9</td>
<td>45.9</td>
<td>46.5</td>
<td>52.4</td>
<td>50.0</td>
</tr>
<tr>
<td>Poor (%)</td>
<td>50.0</td>
<td>39.5</td>
<td>47.3</td>
<td>39.5</td>
<td>31.0</td>
<td>36.3</td>
</tr>
<tr>
<td>2 ADVICE GIVING PRACTICES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Yes (% Total)</td>
<td>16.7</td>
<td>29.6</td>
<td>32.4</td>
<td>27.9</td>
<td>31.0</td>
<td>33.8</td>
</tr>
<tr>
<td>b Eating advice (% yes)</td>
<td>3.6</td>
<td>21.0</td>
<td>14.9</td>
<td>7.0</td>
<td>11.9</td>
<td>11.3</td>
</tr>
<tr>
<td>c T.T. Vaccine advice (% yes)</td>
<td>3.6</td>
<td>3.7</td>
<td>8.1</td>
<td>2.3</td>
<td>4.8</td>
<td>8.8</td>
</tr>
<tr>
<td>d Regular check up advice (%)yes)</td>
<td>8.3</td>
<td>11.1</td>
<td>9.5</td>
<td>14.0</td>
<td>15.5</td>
<td>13.8</td>
</tr>
<tr>
<td>e Drug effects information (%)yes)</td>
<td>1.2</td>
<td>7.4</td>
<td>0.0</td>
<td>3.5</td>
<td>13.1</td>
<td>2.5</td>
</tr>
<tr>
<td>3 REFERRAL PRACTICES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refer (% yes)</td>
<td>17.9</td>
<td>14.8</td>
<td>16.2</td>
<td>16.6</td>
<td>15.2</td>
<td>20.0</td>
</tr>
</tbody>
</table>

s = significant ns = not significant
s (p = 0.001)
### Table X: Dispensing Practices for Pregnancy
First and Second Follow-up Assessments

<table>
<thead>
<tr>
<th>DISPENSING PRACTICE</th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training</th>
<th>Control Vs Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre Post Pre Post Pre Post Pre Post Pre Post Pre Post</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of drugs per customer (mean)</td>
<td>1.0 1.2 1.1</td>
<td>1.1 1.0 1.0</td>
<td>1.2 1.0 1.2</td>
<td>1.0 1.0 1.2</td>
<td>ns ns ns ns ns</td>
<td></td>
</tr>
<tr>
<td>Pattern of drug dispensing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. No drug dispensed</td>
<td>14.3 4.9 14.9</td>
<td>9.3 15.5 13.8</td>
<td>10.5 12.3 8.8</td>
<td>11.6 17.3 5.0</td>
<td>ns ns ns ns ns</td>
<td></td>
</tr>
<tr>
<td>b. Iron preps. all types (% yes)</td>
<td>65.5 80.3 68.9</td>
<td>69.8 73.9 73.8</td>
<td>76.8 71.6 83.8</td>
<td>75.6 75.3 88.8</td>
<td>s ns ns ns ns</td>
<td></td>
</tr>
</tbody>
</table>

s = significant  
s (p = 0.036)  
ns = not significant
Table XI: Retailer Knowledge, Drug Use and Referral in Pregnancy
Second Follow-up Assessment

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Training + Audit feedback</th>
<th>Audit feedback</th>
<th>Control</th>
<th>Control Vs Training</th>
<th>Control Vs Training + Audit feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td>Pre Post</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1 DRUG USE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good (%)</td>
<td>26.2 32.1</td>
<td>34.9 41.9</td>
<td>33.7 32.6</td>
<td>26.7</td>
<td>32.6</td>
<td>ns ns ns</td>
</tr>
<tr>
<td>Fair (%)</td>
<td>57.1 54.8</td>
<td>57.0 46.5</td>
<td>46.5 47.7</td>
<td>55.8</td>
<td>53.5</td>
<td>ns ns ns</td>
</tr>
<tr>
<td>Poor (%)</td>
<td>11.9 2.4</td>
<td>5.8 2.3</td>
<td>12.8 4.7</td>
<td>10.5</td>
<td>4.7</td>
<td>ns ns ns</td>
</tr>
<tr>
<td><strong>2 REFERRAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two or more features (%)</td>
<td>38.1 56.0</td>
<td>33.8 54.7</td>
<td>43.0 38.4</td>
<td>36.0</td>
<td>30.3</td>
<td>s1 s3 ns</td>
</tr>
<tr>
<td>One feature (%)</td>
<td>29.8 17.9</td>
<td>19.8 24.4</td>
<td>15.1 25.6</td>
<td>22.1</td>
<td>12.8</td>
<td>ns ns s5</td>
</tr>
<tr>
<td>Zero feature (%)</td>
<td>32.1 25.0</td>
<td>46.5 20.9</td>
<td>41.9 36.0</td>
<td>41.9</td>
<td>57.0</td>
<td>s2 s4 s6</td>
</tr>
</tbody>
</table>

\[s = \text{significant} \quad \text{ns} = \text{not significant}\]

\[s1 \quad (p = 0.022) \quad s2 \quad (p = 0.033)\]

\[s3 \quad (p = 0.009) \quad s4 \quad (p = 0.000)\]

\[s5 \quad (p = 0.009) \quad s6 \quad (p = 0.044)\]
Table- XII: Drug Use and Referral Knowledge versus Dispensing and Referral Practices in Pregnancy

<table>
<thead>
<tr>
<th>Practices (Second Post-Pre)</th>
<th>Drug Use Knowledge</th>
<th>Referral Knowledge (Post-Pre)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>1 TRAINING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Iron preparations (all types)</td>
<td>ns</td>
<td>s1</td>
</tr>
<tr>
<td>b Vitamin /minerals (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c Refer (yes)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 TRAINING + AUDIT FEEDBACK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Iron preparations (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b Vitamin /minerals (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c Refer (yes)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3 AUDIT FEEDBACK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Iron preparations (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b Vitamin /minerals (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c Refer (yes)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4 CONTROL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Iron preparations (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>b Vitamin /minerals (all types)</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>c Refer (yes)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

s = significant   ns = not significant
s1 ( p = 0.023)  s2 ( p = 0.022)
8. DISCUSSIONS

The effects of the interventions on knowledge and practices of retailers regarding diarrhoea and ARI in children and anaemia in pregnancy have shown different results, mostly with improved outcomes as discussed below.

8.1. Diarrhoea

There is a significant improvement in fluid/feeding advice giving practice with training or training combined with audit feedback up to two months, this practice is not maintained up to five months.

The training is also effective significantly to decrease in antimicrobials recommendation up to two months.

None of the intervention is effective significantly to improve the history taking as well as referral practices in diarrhoea.

None of the intervention is effective significantly to improve the use of ORS which is the only acceptable treatment for this case of simple watery diarrhoea.

The training combined with audit feedback is found effective significantly in improving the knowledge of mild dehydration up to five months.

The training combined with audit feedback is also effective significantly in improving referral knowledge up to five months.

But none of the intervention is effective significantly in improving the knowledge of ORS up to five months.
The results have shown some important significant associations between the knowledge and practices in diarrhoea. The retailers with training combined with audit feedback recommend ORS if their knowledge of dehydration is excellent or good.

The retailers with training combined with audit feedback give advice on fluid/feeding if their knowledge on mild dehydration is improved.

The retailers with audit feedback follow unexpected patterns i.e. the retailers with audit feedback do not recommend ORS if they have best knowledge of ORS. However, they give advice on fluid/feeding if they have best knowledge of ORS.

8.2. ARI

The training is effective significantly to improve the fluid/feeding advice giving practice up to five months.

The training is found effective significantly in improving the use of antibacterials in pneumonia upto five months. The training is effective significantly to improve cotrimoxazole use up to two months. The training is also effective significantly in decreasing the use of cold preparations alone up to two months.

The training combined with audit feedback is also effective significantly in improving fluid/feeding advice practice up to two months only. The training combined with audit feedback is also effective significantly to improve the use of antibacterials in pneumonia upto five months.

None of the intervention is effective significantly to improve the history taking, not dispensing drug as well as referral practices in pneumonia.
The training is effective significantly in improving the knowledge to identify the features of severe ARI up to five months.

None of the intervention is effective significantly in improving the knowledge for referral in ARI.

There is no association between the knowledge on severe ARI and history taking, drug recommendation and referral practices with any intervention.

8.3 Pregnancy

The training is effective significantly in improving eating advice giving practice up to two months. It is also effective significantly in improving the use of iron preparations (all types) up to two months.

None of the intervention is effective significantly in improving the history taking, not dispensing drug as well as referral practices in pregnancy.

None of the intervention is effective significantly to improve the knowledge on harmful effects of drugs in pregnancy.
The training is effective significantly in improving the knowledge of referral features in pregnancy up to five months. Similarly, training combined with audit feedback and audit feedback are effective significantly in improving the knowledge of referral features. The results have shown important association between the knowledge and practice in pregnancy. The retailers with training recommend iron preparations if their knowledge on harmful effects of drugs in pregnancy is “fair”.

8.4 “Contamination” of printed materials

There has been no “contamination” of printed materials from training or mailed print materials group to the control group. Only one retailer in the control group was found possessing printed materials, they were brought along with one of the employee who was working previously in one of the training districts.
CONCLUSION

The research tested the effects of short, focused small group training alone; training combined with audit feed-back and audit feed-back alone to improve dispensing, advice giving and referral practices of drug retailers for diarrhoea, ARI and anaemia in pregnancy. The research has shown that small group training alone is powerful to improve significantly retailers different practices. The improvements are similar when the training is combined with audit feed-back. However, most of the improvements are observed for two months only. The audit feed-back alone is not found effective in improving the practices.

To conclude, short focused small group training is effective intervention strategy to improve the practices, mostly for short period. The main challenge is how to sustain the change for long term.
Surrogate Patient Debriefing Form for Acute Diarrhoea

1. Name of the interviewer: ……………………… Date: ……………………

2. Shop Description:
   a) Name ……………………………
   b) District ……………………
   c) Town/City ……………………
   d) Village ……………………

3. Information asked of surrogate about patient
   a) Age
   b) Vomiting
   c) Fever
   d) Urination
   e) Medicine Used
   f) Taking food
   g) ORS or fluids
   h) Playing
   i) Blood in Stool
   j) Mucus in Stool
   k) Weakness
   l) Other
   (specify)…………………………………………………………………
4. Drug recommendation
   a) Yes b) No c) Recommended and referred
   If Yes,

<table>
<thead>
<tr>
<th>Name of Drug</th>
<th>Frequency of Administration</th>
<th>Duration</th>
<th>Mixing/Mode of Adm.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>5.</td>
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</tbody>
</table>

5. Referral without drug
   a) Yes b) No
   If yes, name of the institution
   a) Health Post   b) Hospital   c) Health Centre
d) Private Clinic e) Sub Health Post f) Other (Specify) ……………………

6. Advice of drug use or any additional advice
   a) Yes b) No
   If yes,
a) Feeding b) Milk or giving fluids
c) Condition for not using ORS d) Revisit
e) Other (Specify) ……………

Serial no. …………
Surrogate Patient Debriefing Form for ARI

1. Name of the interviewer: ........................................ Date: .................................

2. Shop Description:
   a) Name ...........................................  b) District  .........................
   c) Town/City  .........................  d) Village  .................................

3. Information asked about patient:
   a) Fever  b) Indrawing  c) Playing  
   d) Medicine used  e) Taking food  f) Running nose  
   g) Extreme sleepiness  h) Fast breathing  
   i) Difficult breathing  j) Cyanosis  k) Home remedies  
   l) Giving fluids  m) Other (Specify)  ..................
4. Drug recommendation

a) Yes  b) No  c) Recommended and Referral.

If yes,

<table>
<thead>
<tr>
<th>Name of Drug</th>
<th>Frequency of Administration</th>
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<th>Mixing/Mode of Adm.</th>
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</tbody>
</table>

5. Referral without drug

a) Yes  b) No

If yes, name of the institution

a) Health Post  b) Hospital  c) Health Centre
d) Private Clinic  e) Sub Health Post
f) Other (Specify)  

6. Advice of drug use or any additional advice

a) Yes  b) No

If yes,

a) Feeding  b) Milk or giving fluids
c) Cleaning nose  d) Revisit
e) Other (Specify)  

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Surrogate Patient Debriefing Form for Nutritional Supplement in Pregnancy

1. Name of the interviewer: ……………………… Date: ………………………

2. Shop Description:
   a) Name ………………………………
   b) District ……………………
   c) Town/City ……………………
   d) Village ……………………

3. Information asked about patient
   a) Vomiting
   b) Duration of pregnancy
   c) Appetite
   d) Medicine used
   e) Gravida
   f) Swelling of feet and face
   g) Problems with last pregnancy
   h) Other (Specify) ………………

4. Drug recommendation
   a) Yes  b) No  c) Recommended and Referral.

If yes,

<table>
<thead>
<tr>
<th>Name of Drug</th>
<th>Frequency of Administration</th>
<th>Duration</th>
<th>Mixing/Mode of Adm.</th>
<th>Price</th>
</tr>
</thead>
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<td>5.</td>
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</tr>
</tbody>
</table>
5. Referral without drug
   a) Yes  b) No

   If yes, name of the institution
   a) Health Post  b) Hospital  c) Health Centre
   d) Private Clinic  e) Sub Health Post  f) Other (Specify) ……………………

6. Advice of drug use or any additional advice
   a) Yes  b) No

   If yes,
   a) Eating  b) T.T. Vaccination
   c) Regular Check up  d) Medicine use without advice
   e) Other (Specify) ………
Retailer Interview Questionnaire

1. Name of the interviewer: ……………………… Date: ………………………

2. Shop Description:
   a) Name  …………………………….  b) District  ……………………
   c) Town/City  …………………….  d) Village  ……………………

(I would like to talk a little about diarrhoea)

1. About how many customers a week do you have coming for diarrhoea at this time of year?

.................................................. (No)

2. About how many of these are children and adult?
   a) ................ children  b) ................ Adult  c) ................. do not know
3. What products do you recommend most often for a child with diarrhoea?
(Ask the reasons for recommending the product)

1. Name of Drug  2. Reason
   a) Very effective
   b) Less side effects
   c) Stops vomiting
   d) Stops diarrhoea
   e) Effective in dysentery
   f) Effective in Cholera
   g) Other (Specify) ............

4. In your opinion what are the characteristics of some dehydration in a child?
(Ask “Anything else” twice and tick again)

   a) Lose stools four to ten times in a day
   b) Less Urine
   c) Increased thirst
   d) Unwell
   e) Others (specify)……………………………………………………………
   f) Do not know

5. In your opinion what are the characteristics of severe dehydration in a child?
(Ask “Anything else” twice and tick again)

   a) Loose stools more than ten times in a day
   b) Frequent vomiting
   c) Not taking liquid drinks
   d) No urine for six hours
   f) Sunken eyes
   g) Others (Specify)............. ......

6. What product do you recommend for a child with some dehydration?

7. Do you refer customers with a child who has diarrhoea?
a) Yes       b) No

If yes,

7.1 Where do you refer?
……………………………………………………………………………………………………………………………………………………………
(Name of the institution)

7.2 Reason for refer.
(Ask “Anything else” twice and tick again)

a) Severe dehydration
b) Diarrhoea of more than two weeks in a child less than six months

c) Severe malnutrition
d) Suspected cholera
e) Patient on cotrimoxazole and ORS for two days but no improvement
f) Other (Specify)………………………………………

8. In your opinion does ORS help a child with diarrhoea?
    a) Yes            b) No

If Yes

8.1 How does it help?
(Ask “Anything else” twice and tick again)

a) Stops diarrhoea
b) Prevents dehydration
c) Treats dehydration
d) Gives energy
e) Other (Specify)…………………………………………………………………………………………………………………………

(Now I would like to talk a little about ARI)
1. About how many customers a week do you have coming for respiratory problem?
   .............................................. (No)

2. About how many of these are children and adult?
   a) ............... children b) ................. adult c) ............ do not know

3. What products do you usually recommend most often for a child with cough and cold?
   (Ask the reasons for recommending the product)
   1. Name of Drug  2. Reasons
      
      a) Very effective
      b) Less side effects
      c) Suppresses cough
      d) Lowers fever
      e) Easy breathing
      f) Other (Specify) .........................

4. What products do you usually recommend most often for a child with pneumonia?
   (Ask the reasons for recommending the product)
   1. Name of Drug  2. Reasons
      
      a) Very effective
      b) Less side effects
      c) Suppresses cough
      d) Lowers fever
      e) Easy breathing
      f) Other (Specify) .........................
5. In your opinion what are features of child with cough and cold?

(Ask “Anything else” twice and tick again)

a) Running nose
b) Cough
c) Mild fever
d) Other (Specify)………………

6. In your opinion what are features of child with pneumonia?

(Ask “Anything else” twice and tick again)

a) Difficult breathing
b) Fast breathing
c) Noisy breathing
d) Unable to drink
e) Worsening condition
f) Indrawing chest
g) High fever or very low temperature
h) Extreme sleepiness
i) Other (Specify)……………………

7. Do you refer customers with a child who has respiratory illness?

a) yes   b) No

If yes

7.1 Where do you refer?

.............................. (Name of the institution)
7.2 Reason for refer.

(Ask “Anything else” twice and tick again)

a) Chest indrawing
b) Unable to drink
c) Noisy breathing
d) Worsening condition
e) Extreme sleepiness
f) No improvement after antibiotic for 48 hours
g) Severe malnutrition
h) Other (Specify) ...........................................

(Now I would like to talk a little about pregnancy)

1. What products do you recommend most often for a pregnancy case who is pale and weak?

1. Name of Drug  2. Reasons

   a) Very effective
   b) Less side effect
   c) Increases blood volume
   d) Increases appetite
   e) Decreases weakness
   f) Other
   
   (Specify) .................................................
2. Do you know that most drugs cause harmful effects in pregnancy?
   a) Yes  
   b) No

   If yes

2.1 What are harmful effects?
   (Ask “Anything else” twice and tick again)
   a) Harmful to mother
   b) Harmful to child
   c) Harmful to both mother and child
   d) Abortion
   e) Other (Specify)……………………………………

3. Do you refer a pregnant customer with paleness and weakness?
   a) Yes  
   b) No

   If yes

3.1 Where do you refer?
   ............................. (Name of the institution)

3.2 Reason for refer.
   (Ask “Anything else” twice and tick again)
   a) Excessive vomiting
   b) Swelling
   c) Bleeding
   d) Severe lower abdominal pain
   e) Jaundice
   f) Fever
   g) No improvement in anaemia with iron preparation for one month.
(Now I would like to ask about this shop)

1. Name of Interviewee :

2. Sex :  

3. Age :

4. Occupation :  

5. Qualification :

6. Mother Tongue :

7. Have you received Orientation training?
   a) Yes    b) No

8. Have you received Refresher course?
   a) Yes    b) No

9. Is it your shop ?
   a) Yes    b) No

10. How many persons besides you, work in the shop? 
    ................................. (No)

11. How many of them have qualified the Orientation course?

Annex: C
Audit Feedback Format

I. Individual feedback comparing retailers own practice with colleagues and expected good practice for a child with mild dehydration

Name of shop: .................................................................

1. Retailer own practices

<table>
<thead>
<tr>
<th>Information asked of surrogate to know severity of dehydration</th>
<th>Drug dispensed Correct/Incorrect</th>
<th>Advice given Adequate/Inadequate</th>
</tr>
</thead>
</table>

2. Comparison of retailer practices with his/her colleagues in the region

<table>
<thead>
<tr>
<th>Percentage of retailers who asked of surrogates the Information to know the severity of dehydration</th>
<th>Percentage of retailers who dispensed correct drug</th>
<th>Percentage of retailers who gave correct advice</th>
</tr>
</thead>
</table>

3. Expected good practices from the retailers
<table>
<thead>
<tr>
<th>Information to be asked of surrogate to know the severity of dehydration</th>
<th>Correct drug for the child</th>
<th>Advices to be given</th>
</tr>
</thead>
</table>
| A. Frequency of diarrhoea  B. Urination  C. Ability to drink  D. Condition of child  E. Vomiting | **ORS Only** | A. Normal liquid food  
B. Breast feed more frequently  
C. Cow's or Buffalo's milk adding the same amount of water  
D. Feed more frequently than usual with solid food for weaning child  
E. ORS (dispense at least for 3 litres) teaching how to prepare and feed the child  
F. Ask mother to stop ORS if the eye lids become puffy, start the ORS treatment again if the child is still having diarrhoea after the puffiness subsides. |
II. Individual feedback comparing retailers own practice with colleagues and expected good practice for a child with severe pneumonia

Name of shop: ............................................

1. Retailer own practices

<table>
<thead>
<tr>
<th>Information asked of surrogate to know severe pneumonia Yes/No</th>
<th>Drug dispensed Correct/Incorrect</th>
<th>Advice given Adequate/Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

2. Comparison of retailer practices with his/her colleagues in the region

<table>
<thead>
<tr>
<th>Percentage of retailers who asked of surrogates the information to know severe Pneumonia</th>
<th>Percentage of retailers who dispensed correct drug</th>
<th>Percentage of retailers who gave correct advice</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
3. Expected good practices from the retailers

<table>
<thead>
<tr>
<th>Information to be asked of surrogate to know severe pneumonia</th>
<th>Correct drug for the child</th>
<th>Advices to be given</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Fever</td>
<td>One dose of Co-trimoxazole and refer immediately to health institution or qualified health worker</td>
<td>Refer immediately to health institution or qualified health worker</td>
</tr>
<tr>
<td>B. Fast breathing</td>
<td></td>
<td></td>
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<tr>
<td>C. Chest indrawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Difficulty in breathing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
III. Individual feedback comparing retailers own practice with colleagues and expected good practice for nutritional supplement in pregnancy

Name of shop: ..............................................

1. Retailer own practices

<table>
<thead>
<tr>
<th>Information asked of husband of a pregnant woman to know paleness and weakness Yes/No</th>
<th>Correct/Incorrect</th>
<th>Advice given Adequate/Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug dispensed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Comparison of retailer practices with his/her colleagues in the region

<table>
<thead>
<tr>
<th>Percentage of retailers who asked of husband of a pregnant woman to know paleness and weakness</th>
<th>Percentage of retailers who dispensed correct drug</th>
<th>Percentage of retailers who gave correct advice</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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</tbody>
</table>
3. **Expected good practices from the retailers**

<table>
<thead>
<tr>
<th>Information to be asked of husband of a pregnant woman to know paleness and weakness</th>
<th>Correct drug for the child</th>
<th>Advices to be given</th>
</tr>
</thead>
</table>
| A. Weakness and fatigue | Iron and folic acid for at least three months, giving drug for one month initially | A. Eat nutritious food  
B. T.T. Vaccine  
C. Regular check up from health institution or qualified health workers  
D. No drug without prescription |
| B. Breathless while walking and working | | |
| C. Last menstruation | | |
| D. Swelling of face, hands and feet | | |
| E. Bleeding | | |
| F. Excessive vomiting | | |
| G. Pain in lower abdomen and back | | |
| H. Use of any drug | | |
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