Improving anemia control and prevention among children under 5 and pregnant women in Mali

1. Introduction:

The Ministry of Health of Mali has established a basic minimum package of care for women and children that is meant to prevent and treat anemia. According to global research findings this package should have an impact on anemia. However, despite efforts to scale up this package of interventions, there have been virtually no improvements in hemoglobin levels for target populations from 2006 to 2010. Therefore, there is a need to reassess the strategy and interventions.

In 2013 an improvement collaborative was implemented by the MoH, with the support of the USAID ASSIST Project in order to improve overall delivery of community and facility evidence-based interventions in the District of Bougouni (Sikasso Region). The goal of this collaborative was to reduce the prevalence of anemia among pregnant women and children 6-59 months of age through a community-based learning process. The following improvement aims and subsequent indicators were set up to guide the improvement process:

Table 1: Examples of Improvement Aims and indicators at facility and community levels

<table>
<thead>
<tr>
<th>Improvement aims</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility level</strong></td>
<td></td>
</tr>
<tr>
<td>1. Increase the proportion of pregnant women and children under 5 of age who receive systematic screening for anemia</td>
<td>% of pregnant women whom pallor and hemoglobin level have been checked and notified</td>
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<tr>
<td>2. Increase the proportion of pregnant women and children who receive nutritional supplements (iron/folate, Vitamin A, sulfadoxine pyrimethamine and deworming) according to norms</td>
<td>% of children (under 2 and under 5) whom pallor has been checked and notified</td>
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<tr>
<td>3. Increase the proportion of children with anemia case managed according to norms</td>
<td>% of anemia cases of children under 5 evaluated according to norms</td>
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<tr>
<td></td>
<td>% of children under 5 with anemia managed according to norms</td>
</tr>
<tr>
<td><strong>Community level</strong></td>
<td></td>
</tr>
<tr>
<td>1. Increase the number of pregnant women identified and referred to facilities for 1st ANC visit during their 1st quarter of pregnancy</td>
<td># of pregnant women identified</td>
</tr>
<tr>
<td></td>
<td># of pregnant women referred</td>
</tr>
<tr>
<td></td>
<td># of pregnant women identified by community committees who attended the 1st ANC visit during their 1st quarter of pregnancy.</td>
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</table>
2. Background:

With immense security and developmental challenges, Mali is one of the poorest countries in the world. In Mali, eight out of ten (85%) children suffer from anemia, a condition which increases child mortality, impairs physical and cognitive development and has long-term impact on individuals and national economies. The causes of anemia are multiple and often complex, but in young children and pregnant women, they are predominantly micronutrient deficiencies (iron, vitamin A and zinc) and parasitic infections. Despite efforts to tackle this situation through a package of interventions (ANC, children growth monitoring, malaria control, mass vitamin A distribution, mass deworming...), there have been virtually no improvements for target populations from 2006 to 2010. In the Sikasso Region, the problem is the most alarming.

The Sikasso region is the richest and second most populous region. It is the most agriculturally productive, but has the highest rate of stunting. In order to learn and to spread what was learned, an improvement collaborative was initiated in the Bougouni district of Sikasso. It was designed as a community-based learning process to improve the overall delivery of community and facility evidence-based interventions. To support activities at health facilities and strengthen its link with communities, the MoH and ASSIST implemented a quality improvement approach in 43 health areas. This approach aimed to strengthen the relationship between communities and facilities to reduce the rate of anemia among pregnant women and children under 5 years. The intervention has 2 complementary components, a network of 25 health centers and a network of community committees from the surrounding (5 km around) population of these target facilities.

The facility based improvement work is supported by Quality Improvement Teams (QIT) located in each facility, assisted by coaches from the District Health Management Team (DHMT) and ASSIST. QITs are composed of stakeholders from different parts of the process of care to be improved. Based on the improvement aims, QITs identified, tested and implemented changes and measured their impact through agreed upon indicators.

In order to create links between the community and the health system, the ASSIST project tapped into existing community groups and created Community Committees or Community

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1 Anemia and Parasitemia Study. PMI 2010
2 Anemia Prevention and Control: What Works?
Improvement Teams (CIT). The center of these existing groups were functional groups focused on different community interests (farming, faith, school, etc.) The other members of these teams were representatives of local authorities (village chiefs and councilors, mayors, sub-prefects, religious leaders) community health workers, volunteers and youth groups. CITs were trained and supervised by the project, and were given the responsibility of creating demand for anemia prevention services by promoting a healthy diet for pregnant women and children under 5, early prenatal visits for pregnant women, and access to care for children under 5 years in case of diseases. CITs were also responsible for collecting data and creating context specific solutions to increasing demand for services. CITs from 25 health areas were created, trained on improvement, coached and reinforced regularly to conduct the anemia prevention activities in their communities.

During implementation, the link between health centers and communities was monitored through increased referrals from the CITs. However, coaches at the health centers monitored committees, collected and analyzed their data, and provided feedback to ensure their efforts were appropriate for treatment and prevention of anemia.

3. Testing Changes:

QITs at health facilities, through their processes analyses, identified change ideas, tested them and implemented changes. The table below lists the changes in chronological order. While QITs at the facility level were improving anemia screening, case management and distribution of nutritional supplements according to target group, CITs identified ideas to be introduced in order to increase the number of pregnant women and mothers of children less than 5 years-old adopting anemia prevention measures, both at home and at the facility level. See table 2 below.
Example 1:

**Improvement aims (Facilities):** Increase the proportion of pregnant women and children under 5 who receive systematic screening for anemia

**Series 1, Changes tested:**

**May – July 2013:**
- Educate some providers on the importance of the hemoglobin dosage.
- Explain the importance for pregnant women to test for hemoglobin levels.

**Improvement in the percentage of women screened for anemia with some service providers 15% to 45%**

**July – October 2013:**
- Educate all providers on the importance of the hemoglobin dosage.
- Explain the importance for pregnant women to test for hemoglobin levels.
- Designate an officer for triage.
- Observe providers internally through peer review on the tasks and give feedback.

**Improvement in the percentage of pregnant women tested for anemia with some 45% service providers 88%**

**Series 2, Changes tested:**

**October – December 2013:**
No new changes were introduced. However, there was a temporary stock-out of test strips.

There has been a regression in the % of pregnant women tested for anemia from 88% to 77%.

**December 2013 – April 2014:**
- Make analysis sheets available to the units.
- Organize simulation exercises in pairs and give constructive feedback.

Following these changes, the % of pregnant women tested for anemia rose to 88%.

**Series 3, Changes tested:**

**April – June 2014:**
- Explain to patients how to identify danger signs.
- Interview patients upon arrival in order to identify danger signs.

The improvements were reinforced from 88% to 96%, this level was maintained until April 2015.

Following this improvement evident over a long period of time, the District Health Management Team developed a package of best-practices that was scaled-up in 19 new sites.
Many lessons have been learned:

- The constant availability of essential commodities (such as strip / Hémocut for hemoglobin) is necessary. This requires a good supply-chain and communication system between relevant stakeholders.
- Ongoing monitoring of data to assess the status of the improvement indicator is necessary.
- Monitoring service providers and making sure they are reminded of best-practice is necessary.

Example 2:
**Improvement aims (Communities):** Increase the number of pregnant women identified and referred to facilities for ANC 1st visit during their 1st quarter of pregnancy

**Series 1, Changes tested:**
**August 2014 – May 2015:**
- Consultations with husbands and family-heads to allow women to attend ANC service providers in the first trimester of pregnancy.
- The creation of a consultation booklet for pregnant women who had an ANC visit in the first trimester of pregnancy.
- The use of public entertainment to disseminate messages.

With these changes, the average number of pregnant women attending the CPN1 in the first quarter increased from 29 to 41 of an average of 150 pregnant women identified by the communities or an increase from 19% to 27%.

**Series 2, Changes tested:**
**May – December 2015:**
- Creation of a solidarity fund to support pregnant women.
- Creation of a script for data collection.
- Outreach with community committees.

With this second series of changes, the average number of pregnant women attending the CPN1 in the first quarter grew from 41 to 56 on an average of 170 pregnant women identified by the communities or an increase from 24% to 33%.

With training and coaching, CITs have developed capabilities to identify and inform pregnant women to seek prenatal care in order to benefit from anemia screening and receive treatment at health centers. The actions of the committee are reinforced in the project approach through monthly coaching visits, quarterly learning sessions between committees, to share best practices sessions and to validation of data with the QI teams.

In order to reach the largest number of targets, each committee has initiated mobilization strategies adapted to the socio-cultural context. During the testing of changes, committees have managed to develop local practices which could attract the interest of all members to support
anemia prevention activities. These local initiatives were developed initially by one committee and then shared during the learning and best practices sessions, before being extended to all committees.

4. **Time Series chart:**
**Other results in 2015:**
- 11,399 pregnant women were included in the program. Among these included women, 8,943 were directed by the committees to the health centers for monitoring and regular intake of iron in the villages as recommended by the prescriptions.
- In addition, among the 8,943 women referred, 2,957 were identified in the first trimester of pregnancy and sensitized by the committees.
- Also, 254 children under 5 years were also diagnosed with anemia and oriented by the committees to the health centers for support during the year of the same year.
- It was also reported the increasing number of pregnant women seeing for first prenatal visit from 2,664 to 3,714 in health centers following the mobilization and monitoring of pregnant women in the communities.
- For effective antenatal, numbers increased from 1,110 to 1,455 during the same period.

**Conclusion:**
Today in Mali, this approach is spreading through various partners involved in maternal health in collaboration with the Ministry of Health. It promises to demonstrate the link between the community and health providers and is very a promising as there are women’s groups covering in nearly every village in the country.

5. **Questions to be asked to case participants:**

- What are the different changes?
- What happened during the changes?
- What are the different contextual issues which affected the improvement?
- What are the different expectations that stakeholders have?
- Any other questions you feel will help the reader understand the improvement intervention.

These questions should lead to the conclusion that improvement is not only about what we are doing, but how we are doing and how the intervention interacts with the context.