Ensuring twice-yearly vitamin A supplementation in Senegal: assessment validates high coverage

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Abstract

Background: Senegal started national-scale vitamin A supplementation (VAS) in 1999, combined with National Immunization Days (NIDs). Through 2002, twice-yearly VAS was ensured through NIDs and National Micronutrient Days (NMDs). In 2003 national campaigns were stopped and district-level campaigns were organized in about ½ of districts. VAS coverage fell to about 50% in 2003 and 2004. National VAS directives were developed in 2004. The directives propose a strategy of biannual "Local VAS Days". Government and partners defined per district a minimum package of financial support for Local VAS Days in order to contain costs. VAS Days were organized in all districts in July-August 2005. **Aim:** To evaluate coverage of Local VAS Days and knowledge and practices of mothers and other stakeholders. **Methods**: 3 study zones were identified based on prior experience of health districts in organizing VAS and other nutrition services: Zone 1 - districts where an Integrated Package of Nutrition Activities (*PAIN*) including VAS had been implemented for several years (supported by USAID/BASICS); Zone 2 - districts with several years' experience implementing a package of child survival interventions including VAS (supported by UNICEF); Zone 3 - districts with no prior experience in organizing Local VAS Days. 1,800 caretakers, 95 district or regional health workers, 65 health center nurses, 148 community health agents and 181 community resource persons were interviewed. **Results:** Mean VAS coverage from survey was 85.8 % compared to 86% from tally sheet. Coverage was higher in Zone 2 ($p<0.001$) where VAS was included with VAS for post-partum women, de-worming, immunizations and insecticide-treated nets. Coverage was >80% in all age groups in all zones. In Zone 2 coverage was higher in urban areas (92%) than in rural areas (88%) ($p<0.001$). In contrast, in Zones 1 and 3, coverage was higher in rural areas (87.4 % and 89.6% respectively) than in urban areas (78.4% and 79.5% respectively) ($p<0.001$). 45% of nurses from health posts could cite at least 3 advantages of VAS but only 10% cited mortality reduction. 85% of mothers did not receive any vitamin A or health-related messages during administration of VAS. 96% of mothers were in favour of de-worming for their children. **Conclusion:** Local VAS Days, preferably including other child survival interventions, are an effective way to reach universal VAS in Senegal. The tally sheet system reports reliable VAS coverage. Training and communication strategies on VAS need to be improved. There is strong demand for de-worming and it should be included in future VAS distribution.

Introduction

UNICEF/MI study (2004) found that approximately 61% of children (0-6 months) are vitamin A deficient. According to MI and UNICEF estimations, 9,500 children's deaths could be prevented in Senegal by addressing vitamin A deficiency. For Senegal, National Vitamin A Supplementation directives were developed in 2004. The directives propose a strategy of biannual "**Local VAS Days**" in order to maintain a high and sustained VAS coverage. Thus, Government and partners defined per district a **"minimum package of financial support for Local VAS Days"** ($3250) in order to contain costs. Local VAS Days were organized in all districts in July-August 2005. So far, estimates of VAS coverage are based on tally sheets filled out and transmitted during local VAS Days. In order to validate vitamin A coverage from tally sheets, a national-level assessment was conducted.

Objectives

1. Evaluate coverage of Local VAS Days organized trough a "minimum package of support from a financial plan at the central level", in order to validate vitamin A coverage from tally sheet system.
2. Evaluate knowledge and practices of mothers of children 6-59 months and other stakeholders about VAS.

Aknowledgments:

USAID

Canadian International Development Agency | Agence canadienne de développement international

Canada

Methods

The fieldwork for the survey was carried out immediately after Local VAS days (within two weeks of distribution round).

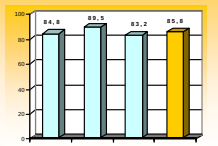
Three sampling strata were identified based on prior experience of health districts in organizing VAS and other nutrition services:

- **Zone 1**: Districts had a long experience of implementing a form of Essential Nutrition Actions including VAS (supported by USAID/BASICS).
- **Zone 2**: Districts had several years experience implementing a package of child survival interventions including VAS (supported by UNICEF).
- **Zone 3**: Districts with no prior experience in organizing Local VAS Days.

Cluster sampling: in each zone, 30 randomly selected clusters (local administrative units) with 20 mothers of children 6-59 months per cluster. Total mothers of children 6-59 months was **1800**. For sampled communities, the closest stakeholders were also interviewed: district or regional health workers (n=95), health center nurses (n=65), community health agents (n=148) and community resource persons (n=181).

Data analysis: Data were entered, checked using Epi Data, and analysed with EPI INFO and SPSS.

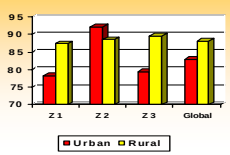
Fig.1 : Population-based VAS coverage survey



Results

- **92 %** of mothers have confirmed that local VAS Days were organized in their community.
- Mean VAS coverage from survey was **85.8 %** compared to **86 %** from tally sheet **(figure 1)**.
- Coverage was higher in **Zone 2** ($p<0.001$) where VAS was included with VAS for post-partum women, de-worming, immunizations and insecticide-treated nets.
- In **Zone 2**, coverage was higher in urban areas **(92%)** than in rural areas **(88%)** ($p<0.001$). In contrast, in **Zones 1 and 3**, coverage was higher in rural areas (**87.4 %** and **89.6%,** respectively) than in urban areas (**78.4%** and **79.5%**, respectively) ($p<0.001$) **(figure 2)**.
- **45%** of nurses from health posts could cite at least 3 advantages of VAS but only **10%** indicated mortality reduction.
- **85%** of mothers did not receive any vitamin A or health-related messages during administration of VAS.
- **96%** of mothers were in favour of de-worming for their children.

Fig.2: VAS Coverage according to the areas (urban versus rural areas)



Discussion

- In a context of high needs and limited resources, the **"Minimum Financial Support Package"** is adequate to ensure high VAS coverage in Senegal.
- The districts must plan implementation of VAS strategy in their annual operational plan and develop a financial plan targeting health committees, local government and local partners.
- It was relevant to undertake assessment of VAS coverage very soon after local VAS days in order to ensure that mothers can still recall accurately the care that their children received.
- The tally sheet system reports reliable VAS coverage. No significant difference was found in this study, but assessments in other countries comparing tally sheet results with population-based coverage survey show systematically that tally sheets over-estimate coverage because of lack of proper denominators and numerators.
- Results show that it is relevant to use VAS as a platform to deliver other low-cost, high-impact child survival interventions such as de-worming.
- VAS coverage according to area (urban versus rural areas) may be influenced by many factors including the strategy used to reach children, the density of population and constraint in mobilizing communities.
- Training and communications are critical inputs for ensuring quality of supplementation programs. A priority is to improve health workers' and parents' knowledge of the benefits of vitamin A.
- The 2005 DHS survey showed that a startling 84% of Senegalese children under-5 suffer from anaemia. There is a strong demand for de-worming and it should be included in future VAS distribution.