In 2011, the Ministry of Health and the National Malaria Control Program of Tanzania developed a Keep Up Strategy with the goal of maintaining the population’s access to a long-lasting insecticidal net (LLIN) at or above 80%, by using school-based distribution as an innovative distribution channel. This strategy was piloted in Tanzania’s Southern Zone beginning in 2013, when the NMCP distributed 421,285 LLINs in three regions. By August 2016 Tanzania has implemented four annual rounds of school-based distribution in three southern regions. SNP2 was implemented in 2014 by Research Triangle Institute, delivering 489,099 ITNs. In the third round in 2015, Johns Hopkins Center for Communication Programs’ (CCP) VectorWorks project with partner PSI delivered 494,407 LLINs. VectorWorks also implemented the 4th round in August 2016, delivering 1,132,043 to 5,054 schools in the Southern Zone and in the northern Lake Zone area.

### SNP Implementation Process

1. **National Level macro planning**
2. **Regional & Districts advocacy**
3. **Cascade training/orientation**
4. **Quantification of pupils**
5. **Validation of quantified data**
6. **Micro plans**
7. **LLIN re-bundling & transportation**
8. **LLIN issuing**

### Background

The background section of the paper discusses the context and setting for the school net distribution program in Tanzania. It highlights the challenges faced, such as maintaining coverage levels above 80%, and the approach taken to address these challenges through the Keep Up Strategy.

### Methods

**Working with a multi-sectoral task force including Ministry of Health, Ministry of Education, and local government, enrollment data was gathered from the government’s centralized data collection system and later verified through a series of validation checks, and used to quantify deliveries for each school. After training and delivery of LLINs to schools, teachers distributed LLINs to the eligible students in the targeted classes, and provided behavior change messages on use, care, and malaria prevention.**

Upon delivery of LLINs to schools, a delivery officer entered the quantity delivered as well as the name and contact information of the receiving personnel into an app. The app automatically captured GPS location and updated the status of delivery and automatically sent notifications to a central, cloud-based database, which VectorWorks staff and staff from private distributor Simba Logistics could access remotely to monitor deliveries in real time to ensure deliveries were being made to the right locations in the right quantities.

### Results

1. **Increased LLIN Access**
   
   During SNP3, 494,407 LLINs were delivered in three regions of Lindi, Mtwara and Ruvuma to students in classes 1-3, 5, & 7 in Ruvuma and Mtwara and 1-5 & 7 in Lindi to achieve LLIN coverage levels above 80%. Using data currently available, NetCALC modelling indicates that the best estimate for population access to an LLIN within the household following SNP3 is approximately 74% in Mtwara and Ruvuma, and 89% in Lindi.

2. **Improved Efficiency in SNP4 Design & Implementation**
   
   **A. Centralized quantification of students’ data**
   
   In the past rounds of SNP, ward education officers were trained to collect pupils’ data. In SNP4, VectorWorks used centralized data collected by the government. Upon receiving these data, CCP worked with government to validate the data, which was proved to be 95% accurate.
   
   **B. LLINs re-bundling on the go to avoid storage cost and time**
   
   During SNP 3, LLINs were delivered to districts based on quantification data. LLINs were stored at the district warehouse for 7-10 days to allow re-bundling of LLINs in stacks equivalent to quantified school needs. In SNP 4, LLINs were delivered to districts by 40' trucks, which were offloaded to smaller trucks (verified by district officials), ready for delivery to schools. Re-bundling (breaking of bales) happened only during offloading of LLINs for a particular school. This helped to save time and substantially reduced distribution costs.
   
   **C. Automated pre and post delivery notifications**
   
   The notifications were sent to ward education coordinators, who supervise two to six schools in each ward. This information included when LLINs would arrive, how many LLINs each school would receive, and a reminder that a representative should be available to receive the LLINs at the specified time of delivery.

3. **Transparency in Accounting for LLINs**

   Using technology to improve accountability
   
   Previous rounds of SNP used paper invoices to account for LLINs. It took about 7 days for all paperwork to travel to the central office before reconciliation happened. In SNP4, VectorWorks used a mobile phone and web-based system to ensure that deliveries were made to the correct locations in the correct quantities. This made the entire process faster and increased accountability as any discrepancies could immediately be traced to exactly where they occurred in the supply chain.

### Conclusion

LLIN distribution through schools in Tanzania is a viable channel to sustain coverage levels by maintaining access rates at or above 80%. VectorWorks has greatly improved efficiency in delivering LLINs through a transparent accountability system and integrating the design and implementation of the program into existing Government of Tanzania systems which has led to reduced costs. The next rounds of SNP will see even more improvement in both the design and implementation of the school net program.

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**Table 1: LLINs distributed through SNP 3 and SNP 4**

<table>
<thead>
<tr>
<th>Region</th>
<th>SNP3 LLINs distributed</th>
<th>SNP4 LLINs distributed</th>
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<tbody>
<tr>
<td>Geita</td>
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<td>Kagera</td>
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<td>129542</td>
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<tr>
<td>Mwanza</td>
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<td>168051</td>
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<tr>
<td>Mara</td>
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<td>Mtwara</td>
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<td>213813</td>
</tr>
<tr>
<td>Ruvuma</td>
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</tr>
<tr>
<td>Lindi</td>
<td>135820</td>
<td>120003</td>
</tr>
<tr>
<td>TOTAL</td>
<td>494,407</td>
<td>1,132,043</td>
</tr>
</tbody>
</table>

**Figure 1: LLINs distributed through SNP 3 and SNP 4**

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**4. Reinforced Malaria Prevention Behavior Through School Children**

ITN issuing alongside social and behavior change communication (SBCC) messaging encouraged children to be advocates for net use in their community. As one of the most at-risk groups for malaria, young children were taught the importance of sleeping under LLINs every night to protect themselves and their families.

**5. Bolstering School Attendance**

In communities across Tanzania, malaria exacts a significant toll, particularly among young children. It is one of the primary reasons for school absenteeism, often leading to failure and dropout. The children recognized the danger of malaria in their communities, but for many of their families the cost of an LLIN is simply too high. Providing an LLIN to the children protects them from contracting malaria, leaving them healthy enough to attend school.

**6. Integrated Reporting through Government Open Data Website**

In the previous rounds of SNP, reporting on LLINs distributed was done through the implementing project. In SNP4 reporting is being done by and through the government’s integrated open data dashboard, which is publicly available through the government website, strengthening Tanzanian ownership of the distribution.