Market research for 7.1% chlorhexidine digluconate

KENYA

PATH
February 2015

Photo: PATH/Evelyn Hockstein
Goals, Objectives, and Research Methodology
Goals and objectives

Goals
• Support the development of effective introduction plans.
• Help manufacturers create business plans.

Objectives
• Segment the market and estimate demand by segment.
• Identify the priority market segments.
• Identify effective distribution and communication strategies to reach the priority market segments.
Research methodology

• Research was Initiated in October 2014.
• Employed both qualitative (in-depth interviews and focus group discussions[FGDs]) and quantitative research (face-to-face household interviews using mobile phones).
  • Samples for quantitative research were identified using snow-balling techniques (referrals).
• Survey areas (total 4 regions)
  • Nairobi (West and East areas)
  • Coast (Mombasa and Kwale* counties)
  • Central (Kiambu and Nyeri counties)
  • Rift Valley (Uasin Gishu and Kajiado counties)

* Kilifi county had been selected but was substituted with Kwale county after the team faced challenges from the county government.
Study population
Quantitative research

- Recently delivered women (RDW) = mothers with a child who is less than 3 years old.
- Approximately one half of mothers are women with a child who is less than 3 months old.

- The number of family members interviewed became significantly lower than that of mothers because many family members were not home at the time of the survey.

The chart shows:
- Recently delivered women: 82% (n=604)
- Family members: 18% (n=134)

Total: n=738

- Husbands and female relatives (mothers, mother-in-laws, and sister-in-laws of RDW)
Quantitative research: characteristics of family members

- Husbands: 42%
- Other relatives (sister/sister-in-law): 31%
- Mothers: 21%
- Mothers-in-law: 6%

n=134
Quantitative research: characteristics of RDW

**By county (n=604)**

<table>
<thead>
<tr>
<th>County</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kajiado</td>
<td>26%</td>
</tr>
<tr>
<td>Kiambu</td>
<td>13%</td>
</tr>
<tr>
<td>Mombasa</td>
<td>9%</td>
</tr>
<tr>
<td>Nairobi</td>
<td>17%</td>
</tr>
<tr>
<td>Nyeri</td>
<td>12%</td>
</tr>
<tr>
<td>Uasin Gishu</td>
<td>13%</td>
</tr>
<tr>
<td>Kwale</td>
<td>12%</td>
</tr>
</tbody>
</table>

**By urban/rural (n=604)**

- **Urban**: 54%
- **Rural**: 46%
Quantitative research: characteristics of RDW

**By religion**

- Protestant Christian: 63%
- Catholic Christian: 22%
- Muslim: 14%
- Others: 1%

**By income level**

- Lowest: 39%
- Low: 18%
- Middle low: 4%
- Middle: 39%
- Did not disclose: 1%

**Note:** The middle-low household income level is represented by only 1% or 5 respondents. When results are analyzed by the household income level and shown in graphs using percentages in the following sections, the responses from mothers at the middle-low household income level are expressed as high percentages disproportionally to other household income levels. As a result, the responses from the middle-low household income level are excluded from graphs when results are analyzed by the household income level.
## Qualitative research

### Policymakers

<table>
<thead>
<tr>
<th>Interviewees</th>
<th>National</th>
<th>Coast</th>
<th>Central</th>
<th>Rift Valley</th>
<th>Nairobi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Director of Health</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Kenyan Pediatric Association/Chair</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Kenya Medical Association/Chair</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td><strong>1</strong></td>
<td><strong>1</strong></td>
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</tbody>
</table>

### Service Providers

<table>
<thead>
<tr>
<th>Interviewees</th>
<th>National</th>
<th>Coast</th>
<th>Central</th>
<th>Rift Valley</th>
<th>Nairobi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Nurses/Midwives</td>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Community Health Workers (CHW) and Community Health Extension Workers (CHEW)</td>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Traditional Birth Attendants (TBA)</td>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Pharmacists from chemists and drug stores</td>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
<td><strong>18</strong></td>
<td><strong>18</strong></td>
<td><strong>18</strong></td>
<td><strong>18</strong></td>
<td><strong>72</strong></td>
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</tbody>
</table>

### FGDs

<table>
<thead>
<tr>
<th>Participants</th>
<th>National</th>
<th>Coast</th>
<th>Central</th>
<th>Rift Valley</th>
<th>Nairobi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td># of FGDs (each group consists of 8 RDWs)</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>
Key finding: place of delivery
Place of delivery (responses from RDW)

- **Home**: 62%
- **Mission hospital/clinic**: 17%
- **Private hospital/clinic**: 14%
- **Government health facility**: 5%

Total (n=604)
Place of delivery (responses from RDW)

By rural vs. urban

- Home: Urban 10%, Rural 24%
- Mission hospital/clinic: Urban 7%, Rural 4%
- Private hospital/clinic: Urban 8%, Rural 22%
- Government health facility: Urban 60%, Rural 63%
- Nursing/maternity/home: Urban 0%, Rural 1%

By household income level

- Home: Lowest 25%, Low 15%, Middle low 26%
- Mission hospital/clinic: Lowest 2%, Low 4%, Middle low 14%
- Private hospital/clinic: Lowest 7%, Low 15%, Middle low 7%
- Government health facility: Lowest 62%, Low 57%, Middle low 1%
- Nursing/maternity/home: Lowest 1%, Low 1%, Middle low 1%

n=604 (Those who disclosed. Excludes the middle household income.)
Factors influencing selection of place of delivery (responses from RDW)

- Proximity of the facility/location
- Affordable cost
- Trust for the care provider
- Availability of skilled health worker in case of emergency
- Quality of service
- Family preference
- It was an emergency/unexpected labor pains
- Tradition
- Was referred to
- Had complication/specialized on surgery i.e., cesarean delivery

Total (n=604). Multiple responses.
Awareness and usage of delivery kits (responses from RDW)

Ever heard of a delivery kit
- Yes: 85%
- No: 15%

n=90

Ever used a delivery kit
- Yes: 86%
- No: 14%

n=604
Key finding: antenatal care (ANC)
Use of ANC (responses from RDW)

By rural vs. urban

- Urban: 95%
- Rural: 87%

By household income level

- Lowest: 82%
- Low: 96%
- Middle low: 97%

n=604

n=576 (Excludes the middle household income.)
Where and from whom ANC was received (Responses from RDW)

- **By rural vs. urban**
  - **Mission hospital health worker**
    - Rural: 1%
    - Urban: 1%
    - Total: 1%
  - **Nurses/midwife**
    - Rural: 49%
    - Urban: 57%
    - Total: 66%
  - **Doctors/clinical officer**
    - Rural: 33%
    - Urban: 42%
    - Total: 50%
  - **Government health facility**
    - Rural: 1%
    - Urban: 67%
    - Total: 76%
  - **Nursing/maternity/home**
    - Rural: 1%
    - Urban: 0%
    - Total: 1%
  - **Private hospital/clinic**
    - Rural: 10%
    - Urban: 25%
    - Total: 18%
  - **Mission hospital/clinic**
    - Rural: 5%
    - Urban: 7%
    - Total: 6%

n=546
Where and from whom ANC was received
(Responses from RDW)

By household income level

<table>
<thead>
<tr>
<th>Where</th>
<th>Middle low</th>
<th>Low</th>
<th>Lowest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission hospital health worker</td>
<td>2%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Nurses/midwife</td>
<td>50%</td>
<td>61%</td>
<td></td>
</tr>
<tr>
<td>Doctors/clinical officer</td>
<td>38%</td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td>Government health facility</td>
<td>59%</td>
<td>78%</td>
<td></td>
</tr>
<tr>
<td>Nursing/maternity/home</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Private hospital/clinic</td>
<td>17%</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Mission hospital/clinic</td>
<td>5%</td>
<td>12%</td>
<td></td>
</tr>
</tbody>
</table>

n=522 (Those who attended ANC and disclosed their household income. Excludes the middle income level.)
Timing of first visit (responses from RDW)

By rural vs. urban

- First trimester: Urban 36%, Rural 21%
- Second trimester: Urban 51%, Rural 68%
- Third trimester: Urban 13%, Rural 11%
- Don’t know: Urban 0%

n=546

By household income level

- Lowest: First trimester 21%, Second trimester 48%, Third trimester 10%
- Low: First trimester 26%, Second trimester 46%, Third trimester 16%
- Middle low: First trimester 1%, Second trimester 7%, Third trimester 1%

n=546

n=522 (Those who attended ANC and disclosed their income. Excludes the middle income level.)
Timing of last visit (responses from RDW)

- **By rural vs. urban**
  - First trimester: Urban (36%), Rural (21%)
  - Second trimester: Urban (51%), Rural (68%)
  - Third trimester: Urban (13%), Rural (11%)
  - Don’t know: Urban (1%)

- **By household income**
  - Lowest: First trimester (21%), Second trimester (48%), Third trimester (10%)
  - Low: First trimester (26%), Second trimester (58%), Third trimester (16%)
  - Middle low: First trimester (21%), Second trimester (48%), Third trimester (10%, Don’t know (7%)

n=546 (Those who attended ANC and disclosed their household income. Excludes the middle income level.)
Key finding: current cord care practices
Cord care substances applied immediately after cord cutting (responses from RDW)

By rural vs. urban

- Methylated spirit: Urban 39%, Rural 33%
- Nothing: Urban 19%, Rural 27%
- Don’t know: Urban 38%, Rural 30%
- Other: Urban 2%, Rural 6%

By household income level

- Methylated spirit:
  - Lowest: 35%
  - Low: 32%
  - Middle low: 49%
- Nothing:
  - Lowest: 26%
  - Low: 22%
  - Middle low: 12%
- Don’t know:
  - Lowest: 27%
  - Low: 37%
  - Middle low: 8%
- Other:
  - Lowest: 8%
  - Low: 5%
  - Middle low: 1%

n=580
n=546
n=552 (Those who disclosed household income level. Excludes the middle income level.)
Cord care substances applied at home
(responses from RDW who applied something after cord cutting)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Urban</th>
<th>Rural</th>
<th>Lowest</th>
<th>Low</th>
<th>Middle low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>85%</td>
<td>93%</td>
<td>79%</td>
<td>81%</td>
<td>87%</td>
<td>94%</td>
</tr>
<tr>
<td>Residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=248 (Those who applied something.)
n=240 (Those who applied something and disclosed their household income. Excludes the middle income level.)
Other cord care substances applied at home (responses from RDW who applied something after cord cutting)

By rural vs. urban

By household income level
Frequency & duration of applying cord care substances (responses from RDW who applied something after cord cutting)

<table>
<thead>
<tr>
<th>Duration</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;2 weeks</td>
<td>2%</td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>1-2 weeks</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-7 days</td>
<td></td>
<td></td>
<td>53%</td>
</tr>
<tr>
<td>1-3 days</td>
<td></td>
<td></td>
<td>38%</td>
</tr>
<tr>
<td>Alternate days</td>
<td></td>
<td></td>
<td>4%</td>
</tr>
<tr>
<td>Several times in a day</td>
<td>2%</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Thrice a day</td>
<td></td>
<td></td>
<td>31%</td>
</tr>
<tr>
<td>Twice a day</td>
<td></td>
<td></td>
<td>34%</td>
</tr>
<tr>
<td>Once a day</td>
<td></td>
<td></td>
<td>21%</td>
</tr>
</tbody>
</table>

By rural vs. urban

n=248 (Those who applied something.)
Frequency & duration of applying cord care substances (responses from RDW who applied something after cord cutting)

By household income level

<table>
<thead>
<tr>
<th>Frequency of application</th>
<th>Middle low</th>
<th>Low</th>
<th>Lowest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a day</td>
<td>18%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Twice a day</td>
<td>35%</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td>Thrice a day</td>
<td>22%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Several times in a day</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Alternate days</td>
<td>2%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>1-3 days</td>
<td>12%</td>
<td>27%</td>
<td>60%</td>
</tr>
<tr>
<td>4-7 days</td>
<td>10%</td>
<td>61%</td>
<td></td>
</tr>
<tr>
<td>1-2 weeks</td>
<td>2%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>&gt;2 weeks</td>
<td>2%</td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>

n=245 (Those who applied something and disclosed their household income.)
Reasons for applying cord care substances (Responses from RDW)

By rural vs. urban

- To dry faster: 70% (Total), 69% (Urban), 64% (Rural)
- To facilitate healing: 71% (Total), 64% (Urban), 62% (Rural)
- To kill germs: 33% (Total), 23% (Urban), 41% (Rural)
- To prevent infection: 31% (Total), 31% (Urban), 18% (Rural)
- Don't know: 1% (Total), 1% (Urban), 1% (Rural)
- Nothing: 1% (Total), 1% (Urban), 1% (Rural)

By household income level

- To dry faster: 94% (Total), 73% (Lowest), 71% (Low)
- To facilitate healing: 72% (Total), 34% (Lowest), 33% (Low)
- To kill germs: 40% (Total), 33% (Lowest), 14% (Low)
- To prevent infection: 38% (Total), 35% (Lowest), 8% (Low)
- Don't know: 2% (Total), 2% (Lowest), 0% (Low)
- Nothing: 0% (Total), 2% (Lowest), 0% (Low)

n=248 (Those who disclosed income. Excludes the middle income level.)
Factors influencing choice of cord care substances (responses from RDW who applied something after cord cutting)

- Available
  - Rural: 2%
  - Urban: 3%
  - Total: 4%

- Told by nurses/doctors
  - Rural: 43%
  - Urban: 51%
  - Total: 47%

- On the hospital list
  - Rural: 4%
  - Urban: 6%
  - Total: 7%

- Told by CHW/CHEW
  - Rural: 2%
  - Urban: 3%
  - Total: 4%

- Told by TBA
  - Rural: 1%
  - Urban: 4%
  - Total: 7%

- Used in the village
  - Rural: 2%
  - Urban: 5%
  - Total: 8%

- Used in the family
  - Rural: 22%
  - Urban: 28%
  - Total: 35%

n=248 (Those who applied something.)
Factors influencing choice of cord care substances (responses from RDW who applied something after cord cutting)

- Available: 1% Middle low, 2% Low, 6% Lowest
- Told by nurses/doctors: 49% Middle low, 27% Low, 2% Lowest
- On the hospital list: 4% Middle low, 8% Low, 2% Lowest
- Told by CHW/CHEW: 3% Middle low, 2% Low, 4% Lowest
- Told by TBA: 6% Middle low, 5% Low, 2% Lowest
- Used in the village: 6% Middle low, 8% Low, 2% Lowest
- Used in the family: 4% Middle low, 28% Low, 40% Lowest

n=245 (Those who applied something and disclosed their household income.)
Cord care practices

• No one single cord care is currently practiced.
  • Policymakers are aware about use of chlorhexidine for umbilical cord care.
  • Service providers are aware about the importance of maintaining hygienic practices. Majority of service providers said that keeping the cord clean and dry is important.
  • Some health care providers use spirits and chlorhexidine while other said that they discourage use of spirits.
  • Some service providers noted that they are not aware of the guidelines for cord care or that the guidelines are confusing.
• Require additional effort to raise awareness about proper cord care practices among service providers.
Provision of currently used cord care substances
Place to obtain cord care substances

Total

- Chemists/pharmacies: 44%
- Health care facility: 27%
- Market/shop: 15%
- Family member/friend: 7%
- Other: 7%

By rural vs. urban

<table>
<thead>
<tr>
<th>Place</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemists/pharmacies</td>
<td>54%</td>
<td>36%</td>
</tr>
<tr>
<td>Health care facility</td>
<td>27%</td>
<td>28%</td>
</tr>
<tr>
<td>Market/shop</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Family member/friend</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>17%</td>
</tr>
</tbody>
</table>

By household income

<table>
<thead>
<tr>
<th>Place</th>
<th>Lowest</th>
<th>Low</th>
<th>Middle low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemists/pharmacies</td>
<td>40%</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td>Health care facility</td>
<td>21%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Market/shop</td>
<td>10%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Family member/friend</td>
<td>10%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>20%</td>
<td>14%</td>
<td>6%</td>
</tr>
</tbody>
</table>

n=248 (Those who applied something.)

n=245 (Those who applied something and disclosed their household income.)
Persons who obtained cord care substances

By rural vs. urban

- Urban: 73% (Self), 11% (Husband), 9% (Female relatives), 6% (Other), 1% (None)
- Rural: 64% (Self), 14% (Husband), 11% (Female relatives), 8% (Other), 2% (None)

By household income level

- Lowest: 76% (Self), 13% (Husband), 12% (Female relatives), 7% (Other), 2% (None)
- Low: 62% (Self), 9% (Husband), 14% (Female relatives), 9% (Other), 1% (None)
- Middle low: 86% (Self), 12% (Husband), 9% (Female relatives), 2% (Other), 1% (None)

n=248 (Those who applied something.)
Timing of obtaining cord care substances

- 51% Before delivery
- 33% Before delivery, during ANC
- 8% Before delivery, at TBA home
- 2% Before delivery (not during ANC)
- 2% After delivery
- 16% Unknown

n=248 (Those who applied something.)
Timing of obtaining cord care

By rural vs. urban

- Before delivery: 51% Urban, 40% Rural
- At delivery: 38% Urban, 45% Rural
- After delivery: 8% Urban, 4% Rural
- Unknown: 2% Urban, 4% Rural

By household income level

- Before delivery: 51% Lowest, 47% Low income, 7% Middle low income
- At delivery: 38% Lowest, 40% Low income, 18% Middle low income
- After delivery: 8% Lowest, 7% Low income, 11% Middle low income
- Unknown: 2% Lowest, 4% Low income, 6% Middle low income

n=248 for rural vs. urban comparison
n=245 for household income level comparison
## Purchase of cord care substances

### % purchased cord care substances

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Urban</th>
<th>Rural</th>
<th>Lowest</th>
<th>Low</th>
<th>Middle low</th>
</tr>
</thead>
<tbody>
<tr>
<td>42%</td>
<td>48%</td>
<td>38%</td>
<td>27%</td>
<td>45%</td>
<td>68%</td>
<td></td>
</tr>
</tbody>
</table>

### Mean price paid

- Average price of methylated spirit is KSH 130 for 100 ml

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Urban</th>
<th>Rural</th>
<th>Lowest</th>
<th>Low</th>
<th>Middle low</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>101</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Residence</th>
<th>Household income</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td></td>
<td></td>
<td>134, 94</td>
</tr>
</tbody>
</table>

- Sample sizes:
  - Total: n=248
  - Urban: n=245 (Those who disclosed income.)
  - Rural: n=245
  - Lowest: n=245
  - Low: n=245
  - Middle low: n=245
  - Urban: n=103 (Those who purchased.)
  - Rural: n=103
  - Lowest: n=103
  - Low: n=103
  - Middle low: n=103
Role of health care providers in obtaining cord care substances

- Half of health care providers reported that spirits are given to women for cord care at health care facilities free of charge.
  - *Health care facilities make sure that spirits are given to women (CHEW, Nairobi)*.

- Some health care facilities charge some amount of money for cord care and other items necessary when giving birth.
  - *They [health care facilities] will give you those items and charge you some amount of money (CHW, Kiambu)*.

- Some health care facilities provide cord care substances to women to encourage them to give birth at health care facilities.
  - *We like women to give birth hospitals. So, mothers are given a cord clamp to firmly hold the cord and *surgical spirit* to be applied after bathing babies (FGD, Kwale).*
Key finding: 7.1% chlorhexidine digluconate
Preferred dosage form for 7.1% chlorhexidine digluconate

- Liquid: 44%
- Gel: 56%

n=604
Preferred dosage form

By region

- Central: 63%
- Coast: 60%
- Nairobi: 71%
- Rift Valley: 54%

By rural vs. urban

- Urban: 56%
- Rural: 56%

By household income

- Lowest: 59%
- Low: 51%
- Middle low: 62%
Reasons for preference (multiple responses)

### Reasons for preferring liquid

- **Easy to apply**: 47%
- **I don’t have to touch it to apply**: 22%
- **Does not need the finger to apply**: 19%
- **It dries faster/will keep the cord dry**: 6%
- **Other**: 6%

### Reasons for preferring gel

- **Feels good to the touch**: 34%
- **Easy to apply**: 32%
- **Its sticky**: 13%
- **Smooth texture/soft**: 5%
- **Lasts longer/does not dry faster**: 5%
- **Other**: 13%
Where to obtain the chlorhexidine product

**People who preferred liquid**

- Pharmacies/chemists: 55%
- Doctors/nurses at facilities: 39%
- CHEW/CHW: 3%
- ANC: 1%
- TBA: 1%

**People who preferred gel**

- Pharmacies/chemists: 65%
- Doctors/nurses at facilities: 28%
- CHEW/CHW: 2%
- TBA: 2%
- Market: 2%
- Local shops: 1%

n=339

n=265
Timing of obtaining the chlorhexidine product

Timing of obtaining the chlorhexidine product:
- Before child birth: 57%
- After child birth: 43%

Timing of obtaining the current cord care substances:
- Before delivery: 51%
- At delivery: 38%
- After delivery: 8%
- Unknown: 2%

n=604
Timing of obtaining the chlorhexidine product

**Liquid**

- Total: Before child birth - 43%, After child birth - 57%
- Urban: Before child birth - 46%, After child birth - 54%
- Rural: Before child birth - 40%

**Gel**

- Total: Before child birth - 46%, After child birth - 54%
- Urban: Before child birth - 55%, After child birth - 45%
- Rural: Before child birth - 37%
Willingness to use the chlorhexidine product

**Willingness to use liquid**

- Would use instead of current substances: 94%
- Would still use gel chlorhexidine if available: 83%

**Willingness to use gel**

- Would use instead of current substances: 94%
- Would still use liquid chlorhexidine if available: 76%

n=339

n=265
Factors influencing decision to use the chlorhexidine product

### People who preferred liquid chlorhexidine product

- Doctor recommends: 66%
- More effective: 55%
- Locally available: 18%
- Cheap: 12%
- Other: 8%

n=339

### People who preferred gel chlorhexidine product

- Doctor recommends: 45%
- More effective: 63%
- Locally available: 19%
- Cheap: 15%
- Lasts longer: 13%
- Other: 5%

n=265
Promotional avenues for the chlorhexidine product

**People who preferred liquid chlorhexidine product**

<table>
<thead>
<tr>
<th>Promotional Avenues</th>
<th>Total</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care providers at facilities</td>
<td>74%</td>
<td>79%</td>
<td>84%</td>
</tr>
<tr>
<td>Radio</td>
<td>40%</td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>37%</td>
<td>44%</td>
<td></td>
</tr>
<tr>
<td>One-on-one sessions</td>
<td>37%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Community meetings</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posters/brochures</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**People who preferred gel chlorhexidine product**

<table>
<thead>
<tr>
<th>Promotional Avenues</th>
<th>Total</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare providers at facilities</td>
<td>64%</td>
<td>72%</td>
<td>81%</td>
</tr>
<tr>
<td>Radio</td>
<td>41%</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>39%</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>One-on-one sessions</td>
<td>34%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Community meetings</td>
<td>28%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Posters/brochures</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=339, n=265
Willingness to pay (KSH)

### 30 ml – Liquid (n=339)

- **Total**: 49%, 43%, 40%, 46%, 55%
- **Urban**: 43%, 46%, 40%, 7%, 11%
- **Rural**: 49%, 43%, 40%, 7%, 6%

### 33 g – Gel (n=265)

- **Total**: 49%, 42%, 48%, 39%, 54%
- **Urban**: 43%, 48%, 39%, 8%, 10%
- **Rural**: 49%, 42%, 48%, 8%, 10%

---

Page 49
Willingness to pay (KSH): purchased vs. obtained for free

30 ml – Liquid

- Purchased (n=61)
  - <100: 25%
  - 101-250: 66%
  - 251-500: 67%
  - >500: 5%

- Did not purchase (n=92)
  - <100: 28%
  - 101-250: 3%
  - 251-500: 3%
  - >500: 2%

33 g – Gel

- Purchased (n=44)
  - <100: 50%
  - 101-250: 63%
  - 251-500: 25%

- Did not purchase (n=51)
  - <100: 48%
  - 101-250: 25%
  - 251-500: 12%
Key finding: effects of cord care substances currently used
Preferred dosage form for 7.1% chlorhexidine digluconate

- Respondents who applied methylated spirits (n=205): 62% preferred liquid, 38% preferred gel.
- Respondents who applied nothing (n=137): 46% preferred liquid, 54% preferred gel.
Where to obtain the chlorhexidine product

Respondents who applied methylated spirits

- Local shops: 0%
- Market: 0%
- TBA: 1%
- CHEW/CHW: 2%
- Doctors/nurses at facilities: 46%
- Pharmacists/chemists: 49%

Respondents who applied nothing

- Local shops: 1%
- Market: 2%
- TBA: 3%
- CHEW/CHW: 3%
- Doctors/nurses at facilities: 20%
- Pharmacists/chemists: 71%
When to obtain the chlorhexidine product

Respondents who applied methylated spirits

- Before childbirth
- After childbirth

Respondents who applied nothing

- Before childbirth
- After childbirth
Factors influencing decision to use the chlorhexidine product

Respondents who applied methylated spirits

- Doctor’s recommendation: 69%
- More effective: 48%
- Local availability: 16%
- Price (inexpensive): 7%
- Lasts longer: 8%
- Other: 5%

Respondents who applied nothing

- Doctor’s recommendation: 67%
- More effective: 28%
- Local availability: 20%
- Price (inexpensive): 9%
- Lasts longer: 3%
- Other: 3%
### Willingness to pay for chlorhexidine product (KSH)

<table>
<thead>
<tr>
<th></th>
<th>Larger volume of the chlorhexidine product</th>
<th>Applied methylated spirits</th>
<th>Applied nothing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>148</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>120</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>30-600</td>
<td>0-2000</td>
<td></td>
</tr>
</tbody>
</table>
Segmentation
Segmentation factors

Residence and household income level affect where women give birth.

- The majority of respondents gave birth at government health care facilities regardless of the location of their residence and household income level. However:
  - Giving birth at home is more common for respondents who live in rural areas and/or whose household incomes are at the lowest level.
  - Affordability and proximity to their residences were the two most significant factors mentioned by respondents as their reason for choosing the location to give birth.
Segmentation factors

Residence and household income level affect where and from whom women receive ANC.

- The majority of respondents receive ANC at government health care facilities regardless of the location of their residence and household income level. However:
  - About one quarter of respondents who live in urban areas received ANC at private hospitals/clinics.
  - 30% of respondents with middle-low income received ANC at private facilities.
  - Respondents with the lowest and lower household income levels receive ANC more frequently from nurses/midwives than from doctors/clinical officers.
### Segmentation factors

#### Prevailing cord care practice affected a few factors:

<table>
<thead>
<tr>
<th></th>
<th>Applied methylated spirits</th>
<th>Applied nothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred dosage form</td>
<td>Liquid is more preferred.</td>
<td>Gel is more preferred.</td>
</tr>
<tr>
<td>Place to obtain the chlorhexidine product</td>
<td>Pharmacists/chemists are preferred by the majority of respondents.</td>
<td>Pharmacists/chemists and health care facilities (provided by doctors and nurses) are almost equally preferred by respondents.</td>
</tr>
<tr>
<td>Timing of obtaining the chlorhexidine product</td>
<td>Only a slightly larger number of respondents preferred obtaining the chlorhexidine product after giving birth.</td>
<td>The larger number of the respondents preferred obtaining the chlorhexidine product after giving birth.</td>
</tr>
<tr>
<td>Factors influencing decisions to use the chlorhexidine product</td>
<td>Doctor’s recommendation most significantly affected their decision to use the product.</td>
<td>Effectiveness of the product most significantly affected their decision to use the product.</td>
</tr>
</tbody>
</table>
### Segmentation and priority segments

#### Rural vs. Urban

<table>
<thead>
<tr>
<th>Income level</th>
<th>Rural (295)</th>
<th>Urban (262)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>148</td>
<td>76</td>
</tr>
<tr>
<td>Low</td>
<td>113</td>
<td>117</td>
</tr>
<tr>
<td>Middle low</td>
<td>33</td>
<td>66</td>
</tr>
<tr>
<td>Middle</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Substance they use

<table>
<thead>
<tr>
<th>Income level</th>
<th>Rural (295)</th>
<th>Urban (262)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>(45)</td>
<td>(34)</td>
</tr>
<tr>
<td>Low</td>
<td>(36)</td>
<td>(37)</td>
</tr>
<tr>
<td>Middle low</td>
<td>(19)</td>
<td>(30)</td>
</tr>
<tr>
<td>Middle</td>
<td>(0)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income level</th>
<th>Rural (295)</th>
<th>Urban (262)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not apply</td>
<td>(38)</td>
<td>(20)</td>
</tr>
<tr>
<td>Not apply</td>
<td>(27)</td>
<td>(23)</td>
</tr>
<tr>
<td>Not apply</td>
<td>(5)</td>
<td>(7)</td>
</tr>
<tr>
<td>Not apply</td>
<td>(1)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income level</th>
<th>Rural (295)</th>
<th>Urban (262)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>(43)</td>
<td>(18)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>(41)</td>
<td>(51)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>(8)</td>
<td>(29)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>(0)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

### Priority Segments

- Mothers (577)
Segmentation summary: general characteristics

- Government facilities are predominantly used as places to receive ANC and give birth.
- Women have significant trust in health care professionals.
  - Health care professionals influence women’s decision to use the cord care substances.
  - Women want to receive product information from health care providers.
- Chemists and pharmacies are generally preferred places to obtain the chlorhexidine product.
- Women generally prefer obtaining the chlorhexidine product after giving birth.
Segmentation summary: different characteristics

- Women who live in rural areas:
  - Give birth at home (second to the government facilities).
  - Prefer obtaining the chlorhexidine product after giving birth.
  - Mentioned radio and community meetings as effective venues for promoting use of the chlorhexidine product.

- Women who live in urban areas:
  - Use private health care facilities for ANC and giving birth (second to the government health care facilities).
  - Prefer obtaining the chlorhexidine product before giving birth.
  - Mentioned TV as promotional venue more often than women in rural areas.
Segmentation summary: different characteristics

- Women who said methylated spirits are applied to their babies' cord:
  - Liquid is more preferred.
  - Health care facilities and chemists/pharmacies are almost equally preferred as places to obtain the chlorhexidine product.
  - Doctor’s recommendation is the most significant factor that influences their decision to use the chlorhexidine product.

- Women who said that nothing was applied to the cord or they don’t know what was applied:
  - Gel is more preferred.
  - Chemists/pharmacies are strongly preferred as a place to obtain the chlorhexidine product.
  - Effectiveness of the chlorhexidine product is the most significant factor that would influence their decision to use the product.
Recommendations
**Recommendation: primary target and dosage form**

- Primarily target is expectant mothers since they obtain the cord care substances themselves.
- Target expectant mothers at the lowest and lower household income levels in rural areas. Also target expectant mothers at the middle-low household income level in urban areas.
- Decide on the form of the chlorhexidine product. Factors to consider:
  - Which form is preferred by primary target users?
  - Which form results in a larger production quantity (demand)? A larger production quantity/demand could result in lower pricing.
  - Which form could provide a competitive advantage to Kenyan manufacturers? A stronger local industry could lead to economic benefits and sustainable supply.
Recommendation: communication

- Raise awareness about the latest cord care guideline among health care professionals.
- Focus on government facilities to educate expectant mothers on use of the chlorhexidine product. ANC is a good venue to increase awareness about the product.
- Utilize health care professionals to convey messages to expectant mothers as they are the most trusted source of information.
- Utilize mass media effectively to expand the number of users.
- Focus on effectiveness of the chlorhexidine product to effectively capture the segment of users who applied nothing to the cord.
Recommendation: distribution

- Sell the chlorhexidine product at chemists/pharmacies.
  - Ensure that the chlorhexidine product is available at chemists/pharmacies or nearby government health are facilities, leveraging manufacturers’ existing distribution channels.
  - Don’t need to constrain distribution of the product to limited geographical areas (e.g., rural areas, areas with high neonatal mortality rate) since manufacturers have wide distribution channels.
  - Focus communication and distribution effort to rural areas having a lower socioeconomic profile (i.e., hard-to-reach areas) in collaboration with implementing partners.

- Price the chlorhexidine product at or lower than 100 KSH for a multiple-application bottle/tube in order to capture a greater number of segments.
Thank you.

Support for this project is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of the HealthTech Cooperative Agreement # AID-OAA-A-11-00051. The contents are the responsibility of PATH and do not necessarily reflect the views of USAID or the US Government.
Back up slides
## Overall impression of liquid and gel

<table>
<thead>
<tr>
<th></th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| **Liquid**     | • Can apply it using cotton wool.  
• Can easily apply without touching the cord; therefore, germs will not be introduced and infection will be minimized.                                        | • Texture is light. Not smooth. Rough. Waterish. Cold.  
• Does not dry as quickly as gel.  
• Cannot feel it [the product] after drying (unlike gel).                                                                                     |
| **Gel**        | • Texture is soft and smooth.  
• Dry the cord easily but not too quickly.  
• The cord will dry yet it will remain soft and moisturized.  
• Would not spill over; therefore, it is easier to manage.  
• Stays for a longer time [than liquid] and it can prevent the cord from germs for a longer time [than liquid]. | • Have to touch the cord to apply.  
• Sticky, and the clothes may stick to the cord.                                                                                                  |
Who assisted with childbirths (RDW)

- Doctor: 45%
- Nurse /midwife: 41%
- TBA: 9%
- No one: 2%
- Family member/relatives: 2%

Total (n=604)
Women who live in rural areas

<table>
<thead>
<tr>
<th></th>
<th>Lowest income</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place for ANC</td>
<td>• Government facilities</td>
<td></td>
</tr>
<tr>
<td>Place for giving birth</td>
<td>• Government facilities</td>
<td></td>
</tr>
</tbody>
</table>
| Factors influencing decision to use chlorhexidine | • Doctor’s recommendation, effectiveness of the product, and local availability are important.  
  • Effectiveness of the product is particularly important for women who currently apply nothing or don’t know what was applied. |                                                                      |
| Place to obtain chlorhexidine | • Chemists and pharmaciesagnostics                                       | Health care facilities (women who said methylated spirits were applied to their babies). |
| Time point to obtain chlorhexidine | • After giving birth                                                         |                                                                      |
| Promotional venue      | • Health care professions at health care facilities                          | Radio and community meetings (women who said methylated spirits were applied to their babies).  
  • TV (women in the lower household income group). |
## Women who live in urban areas

<table>
<thead>
<tr>
<th>Place for ANC</th>
<th>Lowest income</th>
<th>Lower income</th>
<th>Middle-low income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Government facilities</td>
<td>• Government facilities</td>
<td>• Government facilities</td>
</tr>
<tr>
<td></td>
<td>• Private facilities are used by the majority of women who did not know what was applied to the cord.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place for giving birth</th>
<th>Lowest income</th>
<th>Lower income</th>
<th>Middle-low income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Government facilities</td>
<td>• Government facilities</td>
<td>• Government facilities</td>
</tr>
<tr>
<td></td>
<td>• Private facilities are used by the fairly large number of women who did not know what was applied to the cord.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factors influencing decision to use chlorhexidine</th>
<th>Lowest income</th>
<th>Lower income</th>
<th>Middle-low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Doctor’s recommendation, effectiveness of the product, and local availability are important.</td>
<td>• Doctor’s recommendation, effectiveness of the product, and local availability are important.</td>
<td>• Doctor’s recommendation, effectiveness of the product, and local availability are important.</td>
<td>• Doctor’s recommendation, effectiveness of the product, and local availability are important.</td>
</tr>
<tr>
<td>• Effectiveness of the product is particularly important for women who currently apply nothing.</td>
<td>• Effectiveness of the product is particularly important for women who currently apply nothing.</td>
<td>• Effectiveness of the product is particularly important for women who currently apply nothing.</td>
<td>• Effectiveness of the product is particularly important for women who currently apply nothing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place to obtain chlorhexidine</th>
<th>Lowest income</th>
<th>Lower income</th>
<th>Middle-low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Chemists and pharmacies.</td>
<td>• Chemists and pharmacies.</td>
<td>• Chemists and pharmacies.</td>
<td>• Chemists and pharmacies.</td>
</tr>
<tr>
<td>• Healthcare facilities (women who said methylated spirits were applied to their babies).</td>
<td>• Healthcare facilities (women who said methylated spirits were applied to their babies).</td>
<td>• Healthcare facilities (women who said methylated spirits were applied to their babies).</td>
<td>• Healthcare facilities (women who said methylated spirits were applied to their babies).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time point to obtain chlorhexidine</th>
<th>Lowest income</th>
<th>Lower income</th>
<th>Middle-low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>• After giving birth</td>
<td>• After giving birth</td>
<td>• Before giving birth</td>
<td>• Before giving birth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Promotional venue</th>
<th>Lowest income</th>
<th>Lower income</th>
<th>Middle-low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Health care professionals at health care facilities.</td>
<td>• Health care professionals at health care facilities.</td>
<td>• Health care professionals at health care facilities.</td>
<td>• Health care professionals at health care facilities.</td>
</tr>
<tr>
<td>• Mass media such as TV and radio are mentioned more often by women who live in urban areas than women living in rural areas.</td>
<td>• Mass media such as TV and radio are mentioned more often by women who live in urban areas than women living in rural areas.</td>
<td>• Mass media such as TV and radio are mentioned more often by women who live in urban areas than women living in rural areas.</td>
<td>• Mass media such as TV and radio are mentioned more often by women who live in urban areas than women living in rural areas.</td>
</tr>
</tbody>
</table>
## Sources of information on ANC and child care issues

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Total</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor/clinical officer/nurse/midwife (during ANC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother-in-law/female relatives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor/clinical officer/nurse/midwife (not during ANC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBA</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Wife of religious head/women in the delivery center</td>
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<tr>
<td>Trade groups (chamas)</td>
<td></td>
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<tr>
<td>Marketplace</td>
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<tr>
<td>Internet</td>
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<tr>
<td>Others</td>
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</tr>
</tbody>
</table>

n=604 (multiple response)