Paraffin Safety Case Study

Tools and mechanisms for information towards prevention

WHO meeting on protecting children from established and uncertain chemical threats
October 17-19, 2005
Seven communication action steps (Franklin Apfel)

1. Reap before you sow…
2. Speak solution! Be strategic
3. Point with intent…
4. Pick your channel…
5. Mobilize the troops!
6. Regulate, regulate, regulate
7. Embrace the never-ending story…
   Evaluate, adjust, try again…
Whose business is it?

- The consumer
- The manufacturer
- The supplier
- The Neighbour
- The Tax Payer
Paraffin Supply Chain

WARNING
Do not use your paraffin container to store anything else. Only use it to store paraffin. Always label your paraffin container.

Most people use their own containers to buy paraffin and carry it to their homes.
The cost

- Treasury report: the annual externality cost of incidents is 50 times higher than the annual fuel turnover value
Pilot Phase

- Materials
- Methodology
- Surveillance
- Regional generic programme
1. Reap before you sow…

- Safe Packaging Conference
- Surveys
- Experts Forum
  - Cause and Effect Diagram and Counter Measures
  - Haddon’s Matrix
  - Supply Chain Analysis
- Shack burning exercises
- Paraffin Safety Day
Get Out Fast!

National Paraffin Safety Day (1 June 2004)

Shack Burning Simulation Data

<table>
<thead>
<tr>
<th>Temperature (degrees Celsius)</th>
<th>Time Lapsed</th>
</tr>
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<tbody>
<tr>
<td>16</td>
<td>00:00</td>
</tr>
<tr>
<td>52</td>
<td>00:32</td>
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<tr>
<td>106</td>
<td>00:42</td>
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<td>202</td>
<td>00:50</td>
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<td>313</td>
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<td>398</td>
<td>01:06</td>
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<td>507</td>
<td>01:20</td>
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<tr>
<td>600</td>
<td>03:12</td>
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<tr>
<td>700</td>
<td>03:38</td>
</tr>
<tr>
<td>805</td>
<td>03:42</td>
</tr>
</tbody>
</table>
2. Speak solution! Be **strategic**!

- Safe packaging and labelling competition?
- 11 Safety Messages
- Modelling a National Packaging System
- Alternative sources of energy
3. Point with intent…target

- Materials development
- Field Testing
- Pre-testing
4. Pick your channel…

- Video
- Parliament
5. Mobilize the troops!

• Approaching government
• Networking
• Mozambique, Southern Africa
6. Regulate, regulate, regulate

- Appliance Standards
- Labelling Standards
- Packaging Standards
- Supply chain issues
PREVENT PARAFFIN POISONING

Keep paraffin out of reach of children.
It is best to keep it in a locked cupboard.
Store paraffin in its own special bottle.
Avoid storing it in a cold room.
Put the cap back on the paraffin bottle.
Use a funnel to pour paraffin. Avoid spills.
Store the funnel where children cannot reach it.

TREAT PARAFFIN POISONING

GIVE NOTHING by mouth, if a child

Act quickly.

If a child swallows paraffin

Do not wait. Get the child to a hospital
or clinic immediately.

Paraffin is poisonous. It can kill if not treated properly.

- Paraffin is poisonous. It can kill if not treated properly.
- Give nothing to eat or drink and do not make the child vomit.
- If paraffin is spilt on clothing, remove the clothing to avoid breathing in paraffin fumes.
- If just a drop of paraffin gets into the lungs it causes serious damage.

Do you have a plan for an emergency so that you can act quickly?
7. Embrace the never-ending story…

- Consumer Protection Award
- Paraffin Safety Day
- DME Paraffin Safety Programme
- Surveillance
Some prevention milestones

- National Paraffin Safety Day
- Parliamentary Portfolio Committee on Housing - national conference on the “Risk of Fire and Floods to Human Settlements”
- 3 Regional offices
- Stove Standards & Regulation
- DTI Consumer Protection Award
- DME tender for Paraffin Safety Training and Awareness
- WHO Global Burns Project
- Stove competition
- Mozambique
Packaging and labelling
Serenity Prayer

• Lord give me the courage to change the things I can change,
• The strength to accept the things I cannot change, and
• Please give me the wisdom to know the difference between the two.
Thank you

Questions …
The Consumer

- 1,636,170 to 2,394,919 households (9,817,020 to 14,345,564 users)
- Low income households
- Low literacy levels
- Inconsistent income
- Lack security of tenure
- Shifting demographics
- Multi-fuel user.
The use of Paraffin for household energy has an unacceptably high harmful incident rate in South Africa.
Strategic Counter Measures

Avoidable harmful paraffin-related incidents are eliminated in South Africa

**Manufacturing & Materials (Paraffin)**
- Investigate the possibility of improving the chemical composition of paraffin to eliminate pollutants, improve efficiency and safety
- Switch to an alternative energy source
- Research and develop viable, safe and affordable alternative paraffin appliances
- Outlaw and remove unsafe appliances from the market
- Recapitalisation - buy back unsafe stoves

**Distribution**
- Regulate the supply chain
- Develop / encourage safety awareness in the supply chain
- Develop a packaging solution and switch supply from bulk to prepacked
- Work with local government (disaster management) to improve safety in the home, especially regarding fire prevention and improved ventilation
- Develop a robust, uniform national surveillance system that include forensic investigation in the event of harmful incidents
- Collaborate with all role players who can help improve the safety of low income homes

**Retail**
- Paraffin is only sold in safe packing that is recycled using a deposit system
- Conduct a massive collaborative education and awareness effort
- Promote energy saving practices (such as hot boxes) to reduce consumption

**Appliances (stoves & lamps)**

**Homes (point of consumption)**

**Customers / Consumers**
Haddon’s Matrix

<table>
<thead>
<tr>
<th>Event Dimension</th>
<th>Pre-Event</th>
<th>Event</th>
<th>Post-Event</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Epidemiological Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Factors</td>
</tr>
<tr>
<td>Agent or Vehicle</td>
</tr>
<tr>
<td>Physical Environment</td>
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<tr>
<td>Socio-cultural Environment</td>
</tr>
</tbody>
</table>

Haddon's Matrix
The Haddon’s Matrix Third Dimension

- Effectiveness
- Cost
- Freedom
- Equity
- Stigmatisation
- Preferences of People affected
- Feasibility
Applying the third dimension

1. Forces clarity about what’s important in the decision process
2. Encourages use of data to inform decisions
3. Facilitates participation in decision making via a structured process
4. Makes it easier to talk about the reasons for choices, potentially resulting in more effective advocacy
The Three “Easy” Steps

Mission: to reduce by half, the negative consequences of domestic usage of paraffin by 2009

- **Knowledge & Education**
- **Eliminated due to Safer Appliances** (stove standards)
- **Eliminated due to Safe Packaging** (supply chain improvements)

Regulatory Environment

Paraffin Safety Association
Southern Africa
Location of Packaging Sites

<table>
<thead>
<tr>
<th>Region</th>
<th>Nearest Magisterial District</th>
<th>Supplied by</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Tabankulu</td>
<td>SAPREF</td>
</tr>
<tr>
<td>2</td>
<td>Cape Town</td>
<td>CALREF</td>
</tr>
<tr>
<td>3</td>
<td>Belfast</td>
<td>OFRC</td>
</tr>
<tr>
<td>4</td>
<td>Durban</td>
<td>GENREF</td>
</tr>
<tr>
<td>5</td>
<td>East London</td>
<td>SAPREF</td>
</tr>
<tr>
<td>6</td>
<td>Port Elizabeth</td>
<td>CALREF</td>
</tr>
<tr>
<td>7</td>
<td>Mosselbay</td>
<td>CALREF</td>
</tr>
<tr>
<td>8</td>
<td>Calvinia</td>
<td>CALREF</td>
</tr>
</tbody>
</table>
Broader Context

• A suite of messages
• Competing messages
• Competing noise
• Community safety – broader
Deciding on an intervention

- Ask why 5 times
- Ask how 5 times
- Partnerships
Systems

- Plan
- Project Brief Log
- Project Action Plan (detail – Gantt Chart)
- After Action Review
How?

- Repetition – circular and incremental
Challenges

• Limitations with partners
  – Problem of Volunteer motivation
    • Stipends
    • Indirect pay
  – Government structure problems
Method of communication

- Insert a table here which reflects stakeholders and the method.
  - School curricula
  - Health Curricula
  - Generic messaging
Lessons

• Knowledge - evidence
• Deming Plan-Do-check-act
• Communication Methodology
• Materials
• Allies and Advocacy
The Paraffin Consumer

- Education and awareness
  - Promote safety
  - Promote energy saving practices

The use of Paraffin for household energy has an unacceptably high harmful incident rate in South Africa.

Customers / Consumers

- Unaware that Paraffin is poisonous / dangerous
- Many accidents involve alcohol abuse
- High level of illiteracy / poor education
- Poor home safety awareness or practices
- Burning stoves have been used as a weapon for intentional harm
- Dress styles can catch alight
- Carelessness & complacency in the home
- Children are often left unattended in reach of stored Paraffin or Paraffin stoves
- Appliances are left burning when leaving room or going to sleep
- Some wash hair with paraffin to get rid of lice
- Some consumers use Paraffin as a purgative
Step 3: Safety Education

- **Education Model**
  - Health Promotion
  - ABET
  - Partnership leverage
  - Master Trainer Training
- **11 Key Messages**
- **Materials**
  - Fact Sheet
  - Handbook / Field Guide
  - Posters
  - Poster Presenters Pack
  - Stand alone Education & Communication Resource
  - Training Manual
- **11 official languages**
- **National School Drama competition**
Whose business is it?

- The consumer
- The manufacturer
- The supplier
- The Neighbour
- The Tax Payer
Standards, Legislation and Regulation

- Concept – green paper
- Policy position – white paper
- Minister drafts a bill for comment
- The bill goes to parliament
  - Introduced into national assembly –
  - Bill then goes to congruent portfolio committee
  - They call for public hearings.
  - Then bill must be adopted by parliament.
  - Once approved, the president then signs it into law.
- The department head is then able to write it into regulation
Uses and Benefits

- Cooking
- Lighting
- Heating
- Cheap
- Convenient
- Multipurpose
- Easily Borrowed
## End Users / Paraffin Consumers

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Children**               | • Pre-school / day care  
                          • Junior school Children  
                          • High school children  
                          • This is the group to be protected  
                          • They can take steps to protect themselves  
                          • The younger children tend to take safety messages seriously and act on them including instructing caregivers as to what should be done |
| **Caregivers**             | • Family members  
                          • Especially mothers and elder sisters  
                          • Early childhood workers  
                          • Young children cannot care for themselves  
                          • Caregiver negligence is key in the chain of events that lead to paraffin related injuries  
                          • The caregiver is very often an elder sibling |
| **Community Messengers**   | • This could be any person or community service organisation that demonstrates a passion for paraffin safety. An example is a community health forum volunteer. They could be trainers or simply advocates for the cause.  
                          • People based inside the community on a long term basis will be equipped with knowledge and resources to communicate preventive messages on a sustainable basis |
## Service Providers (1)

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Government</strong></td>
<td>One of their key strategic objectives is to “govern these sectors [minerals and energy] to be secure, safe, healthy and environmentally sound”</td>
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<tr>
<td><strong>Department of Minerals and Energy</strong> is tasked with ensuring safe energy for citizens</td>
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</tbody>
</table>
| **Department of Health** - especially Health Promotion - is responsible for preventative and promotive health and subscribes to primary health care concepts | • Their mission is to “...improving access to health care for all and reducing inequity, and to focus on working in partnership with other stakeholders to improve the quality of care of all levels of the health system, especially preventive and promotive health, and to improve the overall efficiency of the health care delivery system.”
• Employ environmental health practitioners and similar personnel and engage with voluntary community health workers |
| **Department of Education** is responsible for providing education for the 21st Century with an emphasis on Life Skills education and continuing and adult basic education. It has been tasked with breaking the back of the legacy of apartheid education and low literacy levels. | • Their vision is “of a South Africa in which all our people have access to lifelong education and training opportunities, which will in turn contribute towards improving the quality of life and building a peaceful, prosperous and democratic society.” |
## Service Providers (2)

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>Politically Elected Community Councillors</td>
</tr>
<tr>
<td></td>
<td>- Crucial for community access and acceptance</td>
</tr>
<tr>
<td><strong>Local Government</strong></td>
<td>includes fire and emergency services</td>
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<td></td>
<td>- Have a vested interest in preventive action and health promotion</td>
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<td></td>
<td>- Ability to enforce local by-laws which may strengthen</td>
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<td></td>
<td>- Make excellent champions</td>
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<tr>
<td>Department of Trade and Industry</td>
<td></td>
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<tr>
<td></td>
<td>- The South African Bureau of Standards is subsidiary of the DTI. They are</td>
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<tr>
<td></td>
<td>crucial for the setting of standards and enforce the standards that are</td>
</tr>
<tr>
<td></td>
<td>brought into regulation</td>
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<tr>
<td>Department of Housing</td>
<td></td>
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<tr>
<td></td>
<td>- They must design houses with the potential use of paraffin in mind</td>
</tr>
<tr>
<td>Department of Arts and Culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Using the arts to communicate the message</td>
</tr>
</tbody>
</table>
## Service Providers (3)

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Rationale</th>
<th>Paraffin Safety Association</th>
</tr>
</thead>
</table>
| Public Benefit Organisations (NGOs, CBOs) | • Their objectives are similar to ours,  
• They are close to people on the ground  
• They are responsive but often lack funding to carry out the intended interventions | funded entirely by the South African Petrochemical industry. |
| Wholesalers and retailers          | They are responsible for delivering a product which is safe and safely packaged and labelled. At present, they do not generally recognise this responsibility |                             |
| Petrochemical companies            | Manufacturers of paraffin                                                 |                             |

The product is theirs yet they believe that the responsibility and cost of packaging rests with the supply chain. It should be noted that the Paraffin Safety Association is funded entirely by the South African Petrochemical industry.