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FINAL REPORT

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Poisoned Communities: Building Environmental Health Practitioners' Capacity to Promote Sustainable Pest Control in Cape Town's Poor Communities

Thematic area: Healthy Communities

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ABSTRACT

Introduction | Street pesticides are used in Cape Town's poor urban areas as pest control. Street pesticides are highly hazardous and illegal chemicals. Exposures and poisonings from street pesticides are a disease burden, particularly for those living in low socio-economic areas, and can lead to deaths in adults and children. **Aims** | This project aimed to increase awareness of the dangers of street pesticides to communities and provide alternatives for pest control that are less toxic. The project also aimed to build City of Cape Town (CCT) Environmental Health Practitioner / Assistant's (EHP/As) capacity to communicate these risks to low-literate communities and promote safe alternatives. **Research Approach** | A [Street Pesticide Reference Group \(SPRG\)](#) was established which consisted of 14 standing members to guide the research and provide specific stakeholder comment. For the development of pesticide alternatives for pest control, establishment of an international [technical advisory group](#), [focus group](#) with EHP/As and a [global literature review](#) was undertaken, along with consultation from the SPRG. A meeting was held with [informal vendors](#) to discuss the health hazards of street pesticides as well as the selling of [alternatives](#). For the development of the health promotion [flip chart](#), consultation was sought with the SPRG, US colleagues who have developed similar risk communication materials for low-literate populations, CCT partners, City-wide input from EHP/As at a workshop (detailed below), the Design for Development material developer team, as well as an informal focus group with community members. A [train-the-trainer workshop](#) was developed to communicate the health risks of pesticide poisonings, train the attendees on how to use the risk communication materials and inform attendees of other issues such as notifying a poisoning. The workshop also focused on training methods for the attendees to use when training communities. **Discussion** | Establishment of the SPRG was successful with active [stakeholder engagement](#) and contribution. Four meetings were held during the 10-month project duration. Alternatives to pesticides for pest control were developed for the six pests mentioned in the proposal as well as two additional pests (ticks and mosquitoes) as requested by the EHP/A CCT partners. The informal vendors were interested in hearing about the health hazards of street pesticides and were open to the possibility of [selling alternative ingredients](#). Copy and art briefs of the flip chart that communicates health risks of street pesticides, as well as alternative methods of pest control and methods of preventing pests, have been developed with extensive input from various stakeholders. Illustrations are currently being completed after which design, translation and printing will follow. As part of the process a new symbol for [representing an invisible danger](#) (pesticide residue) was designed and integrated into all risk communication materials. A workshop was successfully developed and run with a complimentary [training manual](#) also developed and peer-reviewed by the SPRG. **Recommendations** | As a trustworthy relationship has been established with informal vendors, further funding is necessary for continued engagement and to implement the selling of alternative ingredients in informal markets in low socio-economic areas of the CCT. Owing to the success of the Preventing Pesticide Poisoning Workshop, it is recommended that additional workshops be run in the future and that these workshops be open not only to EHP/As, but others involved in preventing pesticide poisonings. Further research is also necessary to evaluate the efficacy of the risk communication materials developed. Furthermore, future funding should be made available to transition the alternatives into an mHealth sphere in the form of an app development (or USSD) that is compatible with all types of mobile phones.

INTRODUCTION AND AIMS

Poor urban townships are often plagued with pest infestations (e.g. rodents, cockroaches, bed bugs, flies, fleas, mosquitoes, ticks and ants). Highly hazardous and illegal "street pesticides" are often the first choice of pest control. These products, however, are mostly registered for agricultural uses and are far too toxic for use within the home with no personal protective equipment. Furthermore, the products are often decanted into unlabeled containers and sold by street vendors to township residents. With the high pest burden in urban townships driving the use of highly hazardous street pesticides and without correct warning labels and directions for use, exposures and poisonings occur regularly amongst adults and children. To attempt to reduce this disease burden, the objectives of this project were three-fold:

1. To increase Cape Town's township residents' awareness of the hazardous risks of street pesticides and improve their knowledge of low-toxic alternatives.
2. To strengthen the CCT EHP/As capacity to communicate to township residents the risks of pesticides and low cost / low toxic pest control alternatives.
3. To develop prototype risk communication and pest control alternative materials for EHP/As to empower and educate low-literate communities.

A memorandum of agreement (MoA) was drawn up between the CCT and UCT for this research. The MoA was approved of by both UCT and CCT's legal departments. There were seven tasks that made up the overall research approach and methods. Ethics approval was obtained from UCT's Human Research Ethics Committee (Appendix 1) and a research request was approved by the CCT (Appendix 2). Details of these tasks are listed below along with the outputs achieved within the project time frame.

Task 1: Regular Meetings and Consultation with the Street Pesticide Reference Group

The Street Pesticides Reference Group (SPRG) was established at the beginning of the project in 2017 and is comprised of 14 standing members (Appendix 3). Additional members attend meetings or provide comment on materials irregularly (e.g. attendance of EHP/As from Khayelitsha who work with our CCT partner attend when possible or necessary but are not standing members of the group). All members signed a pledge of confidentiality (Appendix 4) which allowed members to speak freely about issues and share data, pictures, drafts confidently with the SPRG but vital for informing the project outputs. The SPRG meetings were a good forum for discussion between various stakeholders. For example, at one meeting it was discussed how to improve on getting risk information into communities and there was a suggestion to use community newspapers. This is something the research team are currently working on. Throughout the 10-month project duration we held four meetings with the SPRG. Due to confidentiality clauses, the minutes of these meetings cannot be included in this report, but should any information be required, please contact the Principal investigator. The dates and times were: 22 September 2017 at 10:00; 15 November 2017 at 11:00; 9 March 2018 at 14:00 and 9 May 2018 at 14:00. An initial meeting after being awarded the project also took place between the UCT research team and the City of Cape Town partners on 29 August 2017 at 09:00. Further meetings took place throughout the project duration with various stakeholders and are discussed in the relevant sections below. A SPRG WhatsApp group was also set up and used to engage with members. Although this project has ended, the SPRG will continue under a South African Medical Research Council (SAMRC) funded project.

SPRG Evaluation Questionnaire

An evaluation of the SPRG was conducted on 3 May 2018 through an online questionnaire with 10 questions (Appendix 5). The questionnaire was sent out to all 14 members and the response rate was 57% (eight members). Below is a summary of the responses with future points of action bolded.

Role of the SPRG

When asked to define their view of the role of the SPRG, members indicated that the SPRG brings together an interdisciplinary network of people with diverse backgrounds that contribute expert and local knowledge. Some of the main roles of the SPRG identified were to provide contacts, resources, guidance and advice as well as to create a space for discussion around street pesticide issues. Activities of SPRG highlighted included providing feedback on materials, attending meetings, input on documents and issues via email, and discussing latest mostly child pesticide-related deaths and poisonings. Throughout the project, SPRG members commented extensively on content, language and design of materials and have suggested strategies for the research.

Improvements to the SPRG

Half of the SPRG members who participated in the questionnaire felt there was room for increasing the functions and roles. Some suggestions that is planned to be discussed at the next SPRG meeting included:

- finding ways to engage input from all members (some members are more active outside of meetings),
- regularly review all current deaths and poisonings data at each meeting and discuss how these could be addressed perhaps by providing a mandate for the group and members since there is no other forum for this,
- investigate an internal mechanism of analyzing street pesticides that does not rely on outside laboratories.

Contribution by Members

All but one respondent felt that they contributed to the development of materials whilst one was unsure and felt they have been too busy to provide contributions (Figure 1). All respondents stated that they contributed via input at the meetings and most respondents (75%) comment on drafts in emails whilst two respondents use WhatsApp to contribute.

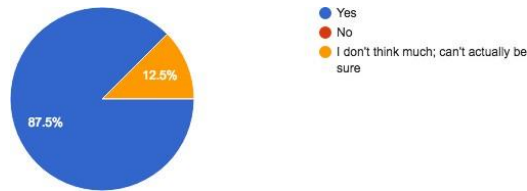


Figure 1: Responses of street pesticide reference group members about their contribution (n = 8).

Collaboration

It was noted that the research team provided opportunities for collaboration and made changes in line with suggestions from the group. However, it was noted by one member that a discussion is needed on how to involve less active group members and one member was unsure as to the extent of collaboration in producing the materials. Challenges to collaboration include meetings only occurring quarterly and requiring members to stay alert on the email attachments.

Terms of Reference (ToR)

Majority of respondents (6/8) stated that the ToR (Appendix 6) were a suitable mechanism for evaluating the SPRG whilst two respondents disagreed stating that they were developed as a guide, not for evaluating. One respondent noted a bias in using the ToR to evaluate the group's effectiveness as they were developed by the group and suggested that an external body should conduct the evaluation. This is noted but currently there is no funding for this. The research team is also uncertain as to whether an external evaluation would bring more value to strengthening the group than an internal review. Half of the respondents stated that the ToR should sometimes be revised, 25% stating they should be revised annually and 25% stated they should be revised only when necessary. At the moment, the research team will raise the issue of revising the ToR once, at the beginning of the year, to see if any changes are necessary.

Stakeholder Gathering

The proposed plan for the CHEC-CCT project was to meet with SPRG monthly however, when reviewing the SPRG evaluation questionnaire members felt that meeting six times per year was ambitious and commendable but that **meeting 3-4 times per year** would probably be sufficient. Some members stated that the SPRG meetings provide an essential platform for discussion with key stakeholders and it provides an opportunity to bring an inter- and multi-disciplinary insight to the issue of street pesticide poisonings and deaths.

SPRG Method and Composition

Almost all of the respondents thought that the SPRG was the best method for bringing stakeholders together for discussing how to address the issue of the use of street pesticides in the WC and how to reduce poisonings. There were suggestions of **Skype meetings or seminars** as well as smaller, more frequent meetings between certain stakeholders that can be fed back to the whole group. All respondents stated that the current composition of the SPRG is appropriate. There were suggestions of **inviting guest speakers** (e.g. SAPS) and also involving community members more. It was also suggested to find ways of encouraging everyone to speak. The issue of inviting guest speakers is currently being discussed with the SPRG. Furthermore, the suggestion of involving community members was brought forward to the SPRG and it was discussed that it could be intimidating to include community members and that the best way forward was to have meetings in the communities with some SPRG members attending. An idea to involve more input from all SPRG members, even the quieter members, is to try "buzz talks" between smaller groups as a mechanism for shy members to contribute.

Meeting Attendance and Preparation

For the respondents not attending all meetings, this was due to being on leave or other work commitments and one respondent had an unexpected event. A suggestion was made to allow for **Skype being set-up, so members can attend the meeting remotely**. Skype will be arranged in future for SPRG members who wish to attend the meeting but are unable to do so due to location. About 50% of respondents make an effort to read through materials in preparation for the meeting.

Meeting Style and Method of Contact

Almost all of the respondents (7/8) stated that the style of the meeting is appropriate but there were suggestions that the **meeting should be longer**, and participation should be facilitated. All respondents rated email as the best form of communication, and there was an even split between WhatsApp and phone calls for the second-best method. Just less than half of the respondents were happy with email but most respondents (5/8) felt that the **creation of a digital project site** would be useful. One respondent suggested a **Google Drive** with shared documents. Since this feedback, a Vula site has been created.

Efficacy of the SPRG

Respondents felt that the SPRG was leaning towards being extremely effective (median of 7.5 / 10 with 10 being rated as extremely effective; Figure 2).

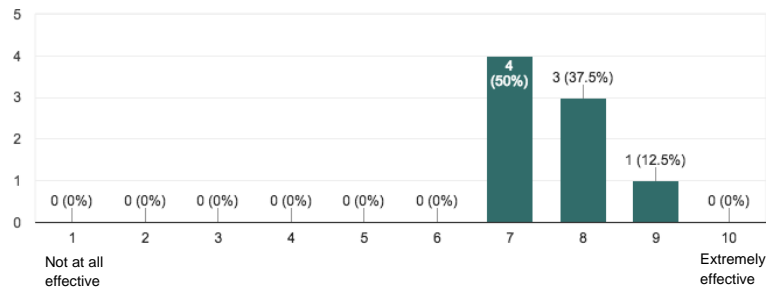


Figure 2. Responses of street pesticide reference group members about the efficacy of the group (n = 8).

Final Comments

Respondents commented that the SPRG is effective, important, they enjoy being members and have gained knowledge. Respondents would like feedback from the research team on the effectiveness of the SPRG in contributing to the research. One respondent mentioned a site visit would be valuable and some respondents stated the SPRG could be expanded to deal with complex issues and also moved to a larger scale with input from senior government. How this could be achieved will be discussed at the next SPRG meeting however, the research team will in the meantime have meetings with CCT management and try to take the findings to a portfolio meeting of parliament.

The SPRG evaluation feedback will be discussed at the next SPRG meeting. Based on the feedback from the SPRG, at the next meeting it will be proposed (and voted on) that meetings will be held quarterly and will be of a longer duration (3 or 4 hours) and include a lunch or tea. There will also be discussion of inviting guest speakers as well as an invitation to join on the next visit with informal vendors.

Task 2: Identify Household Pest Control Alternatives and Develop Risk Communication; and Task 4: Pilot Testing

Advisory group: Household pest control alternatives that are considered low danger (low toxicity) or non-toxic were researched and identified through various mechanisms. The first was through an extensive literature review where relevant pest control methods were identified. Secondly, a Technical Advisory Group (TAG) of international experts was established. A full list of TAG members can be found in Appendix 7. The TAG provided technical advice and sources with effective alternative control methods. The first TAG Skype took place on the 14th of December where different alternatives were discussed, and resources shared. The suggestions provided were incorporated into the booklet developed discussed below.

Site Visit: A field visit was arranged by our CCT partners to the district of Khayelitsha Site B on the 15th of February 2018 to observe EHP/As current training methods and how this project could support these approaches or improve them (Figure 3). At this site visit the project team was escorted around Khayelitsha by CCT EHP/As. The team observed the EHP/As conducting training on street pesticides and water sanitation at an Early Childhood Development center. The team also visited and interacted with street vendors at the informal markets surrounding Khayelitsha train station. The info and photos gathered was used to inform the materials being developed and the EHP/A training manual.



Figure 3: Photos from the project team's visit to Khayelitsha with the City of Cape Town partners.

This was an important step in the project as it allowed the project team to interact with the EHP/As closely to ensure that the materials developed as a result of this project would be appropriate for the EHP/As to actually use. This meeting however, took a long time for our CCT partners to organize and this delayed the project slightly.

Focus group: Following on from the site visit, the project team decided it was imperative at this stage to run a focus group meeting with the EHP/As to discuss the materials in development as well as the proposed low danger alternatives. Before the EHP/A focus group occurred, a TAG meeting took place, as well as a meeting with Mr Elroy Plaatjies (CCT), on the 23rd of February 2018 to finalize the low danger alternatives. The EHP/A focus group took place on the 27th of February and was an essential component to developing alternatives that were feasible (e.g. placing peanut butter as cockroach bait inside a matchbox for cleanliness rather than on a saucer left out in the open) within the low socio-economic context as well as ensuring that the language used was appropriate (e.g. baking soda was changed to bicarbonate of soda). The EHP/As also asked for additional pests to be considered (mosquitoes and ticks) to the ones initially proposed (rats, cockroaches, bed bugs, ants, fleas and flies).

SPRG: The low danger alternative suggestions were also discussed at SPRG meetings. During SPRG meetings, after in depth discussion with members, it was decided that two alternatives booklets should be developed. The first would be a “Low Danger Pest Control Book for Communities” which contained completely non-toxic remedies using common household products (attached to report). The second would be a “Prompt for Alternative and Sustainable Techniques for Pest Control” booklet to be used by EHP/As only (attached to report). This is because, some of the remedies are a lower toxicity than street pesticides but are not completely non-toxic (e.g. borax and neem oil). Therefore, as a result of the TAG, EHP/A and SPRG input as well as consulting global literature, low danger alternative remedies were developed. Feedback was also sought from City-wide EHP/As at the workshop (detailed below).

Material development: The next step was to design, translate and print the booklets. Quotes were obtained from four local design agencies and Design for Development (D4D) was chosen after interviewing two of the agencies. The process of designing the booklets took longer than anticipated. This is because the artist follows an intricate design and illustration process (Figure 4). As a consequence of this intricate design process and the time needed to solicit feedback from the SPRG on text and illustrations, the booklets are still under development (the most recent drafts are attached to the report and Appendix 8 shows an example page from the booklet) at this time and are due to be completed within the next two months. All illustrations are reviewed and approved by the SPRG as well as the EHP/As of our CCT partners. The final products will be sent to CHEC.

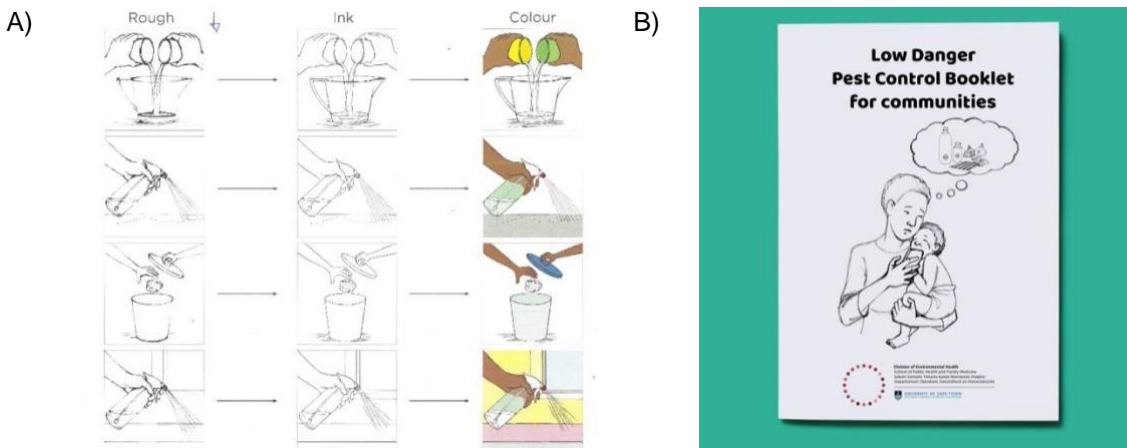


Figure 4: Design process for illustrating step by step instructions for the alternatives booklets (A) and a mock-up of what the booklet will look like (B).

Inclusion of Informal Vendors

SPRG: As mentioned in the project proposal, it is important to include informal vendors in the process of reducing street pesticide sales, use and exposure, as well as for promoting alternatives if these are to be a sustainable and viable solution. It was inappropriate to include the street vendors as part of the SPRG, although originally proposed in the project, as upon consultation with the SPRG, members felt that the dynamics were not conducive for participation by these groups, particularly as the SPRG is largely made up of academics, medical professionals and CCT officials, who are often the individuals responsible for street vendor raids. It was therefore decided that engagement with the vendors should take a different format.

Manuscript: A journal article, as an outcome of this project, discusses in detail how best to engage with informal vendors and the associated challenges (attached to the report).

Informal Vendor Meeting: Nonetheless, after much logistical planning and communication with our CCT partners, a meeting was arranged through the Chairperson of the Informal Vendors Trading Association. The meeting took place between 43 informal vendors, UCT project team and Khayelitsha Site B EHP/As on the 13th of June at a community venue located under Nonqubela Station in Khayelitsha (Figure 5). A full record of the meeting can be found in Appendix 9. The meeting was successful with informal vendors learning about the hazardous effects to their health and the health of their customers from street pesticides. The informal vendors were keen to hear about the alternatives and their buy-in to selling alternatives seemed positive. The project team were also invited to attend future meetings of the informal vendors to discuss exactly what products could be sold as alternatives to street pesticides and the economic viability of these options. These are currently being arranged with the CCT partners. Establishing trust with the group of informal vendors was a huge breakthrough of this project as CCT EHP/As has often clashed with the vendors, raiding their stocks with conflict arising. Further funding is vital to allow for continued engagement with informal vendors, not only in Khayelitsha Site B, but throughout Khayelitsha and the City of Cape Town.



Figure 5: Photos from the meeting with informal vendors in Khayelitsha on the health risks of street pesticides and the prospect of selling low danger alternatives.

Task 3: Develop Risk Communication Flip Chart; and Task 4: Pilot Testing

As mentioned in the proposal, the UCT/CCT flip chart was modeled on a similar flip chart developed by our colleagues in the US from Wake Forest University Medical School (WFUMS). Initially a Skype meeting was conducted between the project team and the WFUMS colleagues on the 5th of October. This Skype meeting was essential for advice on what issues to take into consideration while developing the flip chart as well as gaining feedback from our colleagues on their process. Most importantly from this meeting, was advice from our colleagues on a continual and iterative process whereby materials are regularly sent to various groups for comment. This occurred through the members of our SPRG whereby progress was always shown, and comments welcomed, as well as our CCT partners and their EHP/A environmental health team. Feedback was also sought from City-wide EHP/As at the workshop (detailed below). Details on the content of the flip chart was discussed with the SPRG, CCT partners and WFUMS colleagues. It was decided that the flip chart should focus on three main sections: i) Discourage communities from buying street pesticides, what to do if someone is poisoned and information on the acute and chronic health effects of street pesticide exposure; ii) preventing pests using three main methods; and iii) alternative methods of pest control but also how to use pesticides as a last resort. The US colleagues continued throughout the project to comment on the text and illustrations developed by the project and design team.

The next step of the flip chart development process was to get D4D to illustrate, translate and print a prototype of the flip chart. D4D attended one of the SPRG meetings to hear comments on what the illustrations for the flip chart (and alternatives booklets) should entail. The illustrations with D4D have taken longer than anticipated particularly finalizing the art briefs, which have been through a comment process with the SPRG and CCT partners. The thumbnail sketches and pencil rough illustrations also go through comment with the SPRG and CCT partners which has been time consuming. Finally, an informal focus group took place for a few of the sketches with a group of low-income women. Although these iterative comment and consultation processes are time consuming they are vitally important for many reasons: i) comprehensibility and acceptability of the illustrations for a low-literate population is paramount when developing effective risk communication materials; ii) producing a product that will actually be used by the CCT partners. As a consequence of this intricate process the during all stages of development, the flip chart is still under development (Figure 6 shows an example mock-up) at this time and is due to be completed within the next two months. The final product will be sent to CHEC when available.



Figure 6: Example mock-ups of the flip chart. Note that the final flip chart will be in full colour.

Development of a Pesticide Residue Symbol

One of the issues that came out strongly during feedback sessions on the materials was on developing an appropriate symbol to symbolize a pesticide residue. In Rother's previous work with Working for Water the symbol below (Figure 7) was used to represent a pesticide residue building on the symbol developed the Wake Forest colleagues.



Figure 7: Snake and crossbones symbol previously used by UCT as symbolizing a pesticide residue.

The SPRG, including the Khayelitsha team of EHP/As who conducted a focus group on the symbol on the 13th of February, did not feel that the snake and crossbones symbolized an invisible danger adequately and also did not want such a negative connotation associated with all snakes. The challenge of creating a symbol that was novel and symbolized both a danger. The D4D team had a meeting with the project team and then presented possible symbols at a SPRG meeting. After several rounds of development and voting by the SPRG D4D team developed the symbol below (Figure 8). This symbol will be used throughout the flipchart and will be a training tool for EHP/A's to discuss toxic pesticide residues with community members.



Figure 8: Pesticide residue symbol of an invisible danger developed by UCT and D4D in collaboration with the SPRG and CCT partners.

Designing and developing the risk communication materials (alternative booklets and flip chart) has taken longer than anticipated as mentioned above. A report from the design team, Design for Development is attached as Appendix 10.

Tasks 5 & 6: Conduct a "Train-the-Trainer" Workshop with EHPs and Develop a Training Manual

Initially we had planned to conduct a workshop only for EHPs. However, upon discussion with the SPRG and CCT partners it was decided that the workshop should be open to the following groups of people working in street pesticide related issues: EHP/As, forensic pathology officers, emergency response teams and those working in health promotion. As a result, an invitation was sent out to various networks including the SPRG members who disseminated the advert for the workshop throughout their networks. A full list of attendees for the workshop, with their designation, can be found in Appendix 11. Overall the workshop was successful with 20 attendees on the 5th of June (09:00 – 15:15) (Figure 9). Attendees were from

various areas around Cape Town such as Khayelitsha, Langa, Gugulethu, Nyanga, Lwandle/Nomzamo and Samora Machel/Joe Slovo. An outline of the programme can be found in Appendix 12 but generally the workshop aimed to inform attendees of the following:

- innovative community training methods;
- health risks of illegal street pesticides;
- communicating street pesticide risks to communities;
- less harmful pest control;
- notification of a pesticide poisoning;
- Poison Information Helpline and discussion;
- surveillance in forensics and toxicology; and
- using pesticides as a last resort.

Consultation with the SPRG and CCT was sought for what should be included in the training manual. A peer-reviewed (SPRG and CCT partners) training manual was then developed (attached to report). The manual included information covered in the workshop, but which also included more detailed information and resources. The training manual is for the CCT and others to use when conducting future training on SPs to community members and colleagues.

Workshop Evaluation

After the workshop an evaluation was completed by workshop attendees. A full report on the evaluation feedback can be found in Appendix 13. However, in general, attendees enjoyed the workshop and felt that they learnt a lot from it that was relevant to their work. Attendees also enjoyed and appreciated learning about techniques on how to train others such as risk mapping. Unfortunately, with so much to cover, attendees felt that the workshop could be held over a two-day period, or at least extended. There were comments to better improve time management if a future workshop is to be held. Below (Figure 9) are a few pictures from the workshop. Table 2 provides a financial statement on the cost of running one, full day, Preventing Pesticide Poisonings workshop for approximately 20 attendees in the future.



Figure 9: Photos from the Preventing Pesticide Poisonings Workshop held at the University of Cape Town with 20 attendees from different areas around Cape Town.

Task 7: Develop Relevant Publications and Outcomes

Table 1: Summary of CHEC funded outputs from August 2017 to June 2018.

Output	Progress or Comment
Flip Chart	The content of the flip chart is complete. The illustrations are currently being produced as is the design. After this, the printing of a prototype will take place from which the CCT can reproduce many copies. Final copy to be submitted to CHEC when available.
Alternatives Booklets	Two alternatives booklets have been developed: i) Low Danger Pest Control Book for Communities; ii) Prompt for Alternative and Sustainable Techniques for Pest Control for EHP/As. The content of both booklets is complete. The step-by-step illustrations are currently being produced as is the design. After this, the printing of a prototype will take place from which the CCT can reproduce many copies. Final copy to be submitted to CHEC when available.
SPRG meetings and minutes	Throughout the 10-month project duration four SPRG meetings were held. As mentioned above, for confidentiality reasons, the minutes are not included in this report but are available from the PI. The dates and times were: 22 September 2017 at 10:00; 15 November 2017 at 11:00; 9 March 2018 at 14:00 and 9 May 2018 at 14:00.

Policy brief	The policy brief for this project specifically details the collective responsibility in reducing health risks from street pesticides. The policy brief is attached to this report. It is still in draft format pending approval from the CCT partners.
Training manual	The 60-page training manual (attached to this report) was developed as part of the project. Although initially targeted at EHP/As it is suitable to be used by environmental health staff, forensic pathology officers and health promotion officers amongst others.
MPH student evaluation of the SPRG	Sourcing a Master of Public Health (MPH) student for the project was challenging given the short duration of the project (10 months) and the limited students available. However, an MPH student was involved as a research assistant on the project and designing/implementing the evaluation questionnaire. The MPH student also inputted the data and co-authored the paper around using mortality statistics as an indicator of the burden of pesticide poisonings amongst children. The MPH student also assisted with the SPRG evaluation and the flip chart and alternatives booklets. The MPH student attended SPRG meetings and took minutes at those meetings.
Two Publications	<p>The first manuscript focuses on making informal vendors part of the solution when it comes to reducing street pesticide exposure and poisonings in low-income communities. This is through an engaged scholarship lens with a novel framework being presented. The manuscript has been submitted to the journal <i>Global Public Health</i> and is currently with the journal's editor awaiting peer-review. The manuscript is attached to this report and a final manuscript will be sent to CHEC and CCT partners when published.</p> <p>The second manuscript aimed to retrospectively investigate pesticide-related fatalities in Cape Town, South Africa using mortality-based records with the objectives to assess epidemiological characteristics, identify a potential linkage to 'street pesticides', and evaluate the children's risk profiles. The intention is to showcase the importance of using mortality data for pesticide policy making and registrations. The manuscript will be submitted to <i>The Lancet Global Health</i>. At this time the manuscript is still under development primarily due to the complexity of data collection of this sort. Much of the data were hard copy case files (not digital) and involved manual sorting and analysis. The data are of a sensitive nature, that being statistics on child deaths from poisonings. It is therefore imperative that data analysis is completed thoroughly before preliminary results are released and thus, no draft of this manuscript is included or attached to this report. As soon as the manuscript is finalized and sent to the journal, a copy will be sent to CHEC and CCT.</p>

CONCLUSIONS AND RECOMMENDATIONS FOR FOLLOW-UP ACTION

The success of this project on the minimal amount of funds received is remarkable. However, further follow-up actions are extremely important to continue the success of the initiatives started with this project and to end the selling and using of street pesticides and promote public health. Follow-up actions for which future funding is needed include:

1. Engagement with Street Vendors

It is vital to continue the momentum of engagement and maintain the trust of the informal vendors in selling alternatives to street pesticides in low socio-economic communities. Further funding is essential to continue the engagement and transition to a market place of no street pesticides whilst still maintaining an income for informal vendors in the entire CCT region. Funding is needed for material printing and food for participants.

2. Preventing Street Pesticide Poisoning Workshop

Owing to the success of the workshop and the high demand for the workshop (personal communication with CCT partners and see Appendix 14 for list of interested people unable to make it to the workshop on 5th of June) it is recommended that more workshops are run in the future. A breakdown of the total cost for running one full day workshop for 20 attendees is approximately R18,310 (Table 1). Therefore, with a budget of R75,000, UCT could run four workshops annually, that being one workshop every quarter.

Table 2: Brief costing of running one, full day, Preventing Pesticide Poisonings workshop for approximately 20 attendees.

Item	Number of Units	Unit Cost	Total Cost
Workshop planning manager	20	R280	R5,600
Workshop planning assistant	20	R100	R2,000
Lecturer 1	4	R500	R2,000
Lecturer 2	2	R280	R560
Guest lecturer 1	1	R400	R400
Guest lecturer 2	1	R400	R400
Departmental administrator	5	R170	R850
Printing and binding of training manual	20	R150	R3,000

Printing of Resources (e.g. Pesticides are Poison Book)	20	R75	R1,500
Catering	20	R80	R1,600
Stationary and airtime	n/a	n/a	R400
Total Cost			R18,310

3. Evaluation of Risk Communication Materials

There is often a premature ending of the scientific pathway, due to the narrow focus of research projects and funding restrictions before thorough implementation, dissemination and improvement of an intervention can occur. Thus, communities at large are often left with a gap between research and practice. It is therefore important that further funding is provided to conduct research that aims to evaluate the efficacy of the risk communication materials that have been developed as part of this grant.

4. mHealth

Mobile Health (mHealth), in the form of application developments, is an important avenue for communicating risks and alternatives to community members and health professionals. Future funding is needed to transition the materials (e.g. alternatives booklets) developed from this project, and other possible pesticide risk communication tools, into mHealth applications compatible with all types of mobile phones used in target communities. This will allow for mass dissemination of the materials developed under this project and hopefully mass uptake culminating in a decreased, or ceased, reliance on street pesticides. We are currently engaging with UCT's innovation office who is assisting in seeking funding for this application development.

BUDGET

A financial statement signed by our Faculty Financial Officer and the PI is presented in Figure 10.



UNIVERSITY OF CAPE TOWN

School Of Public Health and Family Medicine
Faculty of Health Sciences
Falmouth Rd, Observatory, 7925
Tel : (021) 406-6300 Fax: (021) 406-6459

Funder: CHEC - Cape Higher Education Consortium
Principal Investigator: Prof Hannah Andrea Rother Oni
Poisoned Communities: Building Environmental Health Practitioners Capacity to Promote

Project Title: Sustainable Pest Control in Cape Town's Poor Communities'
Period of project: 01 January 2017 to 15 December 2017
Period of report: 01 January 2017 to 31 December 2017
Claimant's Ref: Fund 411698 UO: 28043

Statement of Income & Expenditure for the period ... 01 January 2017 to 31 December 2017

Description	Budget (ZAR)	Actuals for this Period (ZAR)	Cumulative Actuals (ZAR)	Variance (ZAR)
INCOME:				
Received 01 June 2017		100,000.00		
EXPENSES:	100,000.00	100,000.00	100,000.00	0.00
10 Months project co-ordinator (soft-funded) time at R2000/month	20,000.00	20,000.00	20,000.00	0.00
SP reference group meeting costs (participant transport & food)	2,000.00	3,370.63	3,370.63	-1,370.63
Production of 10 x flip charts and alternatives prompt cards (APC)	55,000.00	64,266.31	64,266.31	-9,266.31
Translation costs	8,000.00	0.00	0.00	8,000.00
Field workers	6,000.00	3,981.39	3,981.39	2,018.61
Research team transportation costs	3,000.00	0.00	0.00	3,000.00
Research consumables	1,000.00	3,381.67	3,381.67	-2,381.67
One Master in Public Health (MPH) student stipend @ R5,000	5,000.00	5,000.00	5,000.00	0.00
	100,000.00	100,000.00	100,000.00	0.00
TOTAL FUNDS REMAINING FOR THE PERIOD:		0.00		
FUNDS REMAINING AT THE START OF THE PERIOD:		0.00		
FUNDS REMAINING AT THE END OF THE PERIOD:		0.00		

Prof HA Rother
PRINCIPAL RESEARCHER
I certify that all the amounts above have been actually and necessarily expended under the grant, in accordance with the terms and conditions outlined in the accounting instructions of the grant.

PP
Ms Liesel Mampies
ASSISTANT RESEARCH MANAGEMENT ACCOUNTANT
I confirm that the above figures agree with the books and records of the University of Cape Town. UCT's financial policies, procedures and books of account are the subject of an annual external audit by the firm Ernst & Young.

Figure 10: Financial statement for the project.

Co-funding

The risk communication materials (flip chart and alternatives booklet) costed more than budgeted and as such additional funds were expensed to a South African Medical Research (SA MRC) project that we are running. Additionally, for the second publication using mortuary data, as the data collection method was manual using hard copy case files, the time for research assistants was also costed to the SA MRC project account. The SA MRC project also assisted with funds for the publication on engaged scholarship. SA MRC are also acknowledged in the training manual for funds provided to support the manual development.

Over Spend

There was a slight over spend on SPRG meeting costs. This is primarily because it was also decided to buy lunch for the informal vendor meeting (not initially budgeted for) as a thank you for their time. Furthermore, excess money was spent on the workshop catering which was not originally budgeted for, but which resulted in being a full day workshop. More money was spent on research consumables than budgeted for primarily because of the decision to provide informal vendors and workshop attendees with a reference book: Pesticides are Poison. This was necessary as a take away material to communicate the risks of pesticides.

Under Spend

Less money was spent on transport and fieldworkers than anticipated. Firstly, CCT provided all transport for attending meetings and site visits and therefore was not spent on this budget. Secondly, less money was spent on fieldworkers as Dr Christie Godsmark and the research assistant (MPH student) conducted most of the fieldwork. The cost for translations was included in the quote for the production of materials as this will also be done by Design for Development.

Summary

Overall, the full R100,000 budget was spent with additional co-funders acknowledged where necessary. Money that was not spent (fieldworkers and transport) was used to cover the over spend on some line items as discussed above.

APPENDICES

1. UCT's Human Research Ethics Committee Ethical Approval
2. CCT Research Approval
3. Street Pesticide Reference Group Members
4. Pledge of Confidentiality
5. Street Pesticide Reference Group Evaluation Questionnaire
6. Terms of Reference for the Street Pesticide Reference Group
7. Technical Advisory Group Members
8. Alternatives Booklet: Example Page
9. Notes from the Informal Vendor Meeting
10. Report from Design for Development
11. Workshop Attendees
12. Outline of Training Workshop
13. Workshop Evaluation
14. List of Interested People Unable to Make First Workshop

Appendix 1: UCT's Human Research Ethics Committee Ethical Approval



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee



Room E52-24 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 404 7682
Email: nosl.tsama@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

10 October 2017

HREC REF: 708/2017

A/Prof A Rother
Division of Environmental Health
Public Health & Family Medicine
Entrance 5, Level 4
Falmouth Building

Dear A/Prof Rother

PROJECT TITLE: POISONED COMMUNITIES: BUILDING ENVIRONMENTAL HEALTH PRACTITIONERS CAPACITY TO PROMOTE SUSTAINABLE PEST CONTROL IN CAPE TOWN'S POOR COMMUNITIES.

Thank you for submitting study to the Faculty of Health Sciences Human Research Ethics Committee for review.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30th October 2018.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval before the research may occur.

Please quote the HREC REF in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE
Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938

HREC 708/2017



CITY HEALTH

Dr Hélène Visser
Manager: Specialised Health

T: 021 400 3981 F: 021 421 4894 M: 083 296 8718
E: Helen.Visser@capetown.gov.za

2017-12-01

Re: Research Request: Poisoned Communities: Building Environmental Health Practitioners Capacity to Promote Sustainable Pest Control in Cape Town's poor Communities. (7888)

Dear Prof Rother,

Your research request has been approved. Could you please provide us with the exact starting and end date of your project?

Please note the following:

1. Staff involvement must be arranged timeously and must be pre-approved by the relevant Line Manager.
2. All information obtained must be regarded as confidential.
3. No publication of results allowed unless officially approved by the City.
4. A copy of the final report must be sent to the City Health Head Office, P O Box 2815 Cape Town 8001, within 6 months of its completion and feedback must also be given to the clinics involved.
5. Your project has been given an ID Number (7888). Please use this in any future correspondence with us.

Thank you for your co-operation and please contact me if you require any further information or assistance.

Yours sincerely

DR G H VISSER
MANAGER: SPECIALISED HEALTH

cc Mr A Petersen
Mr E Plaatjies
Dr V de Azevedo
Mrs S Elloker
Dr A Zimba
Mr V Malgraff
C Godsmark
N Khumalo

CIVIC CENTRE IZIKO LOLUNGU BURGERSENTRUM
HERIOTG BOULEVARD CAPE TOWN 8001 P.O. BOX 2815 CAPE TOWN 8000
www.capetown.gov.za

Making progress possible. Together.

Appendix 3: Street Pesticide Reference Group Members

Street Pesticide Reference Group Members
Hanna-Andrea Rother (Head of Division of Environmental Health; University of Cape Town)
Christie Godsmark (Environmental Health Researcher; University of Cape Town)
Maureen McCrea (Western Cape Province)
Danie Louw (Provincial Environmental Health Coordinator; Western Cape Province)
Elroy Plaatjies (Principal Environmental Health Practitioner; City of Cape Town)
Madoda Saliwa (Environmental Health Practitioner; City of Cape Town)
Afikile Mxokwana (Environmental Health Practitioner; City of Cape Town)
Andile Zimba (City of Cape Town)
Leslie London (Head of Public Health Medicine; University of Cape Town)
Lorna Martin (Head of Forensic Medicine and Toxicology; University of Cape Town)
Susan Levine (Associate Professor of Anthropology; University of Cape Town)
Bronwen Davies (Chief Forensic Toxicologist; University of Cape Town)
Kate Balme (Red Cross Children's Hospital)
Cindy Stephen (Red Cross Children's Hospital)

Appendix 4: Pledge of Confidentiality



Division of Environmental Health, School of Public Health and Family Medicine, University of Cape Town

PLEDGE OF CONFIDENTIALITY

Street Pesticides Reference Group

The purpose of the Street Pesticide Reference Group (SPRG) is to create a community of individuals with knowledge, experience, and expertise in pesticide poisonings. The SPRG will act as the research project steering committee and be advisors for the research team. The SPRG will:

- Provide broad oversight and advice on the implementation of the project;
- Provide advice and direction on the content and format of the: Data collection tools and methods, Intervention Development and Piloting, and Project Materials and;
- Revise these Terms of Reference as deemed appropriate from time to time.

I, the undersigned, hereby declare that I understand that as a member of the SPRG I may have access and insight to confidential information and data. I further declare that I understand that everybody has the right to privacy in terms of the Constitution of the Republic of South Africa.

I hereby pledge to –

- Honour individuals' right to privacy as contemplated in the Constitution.
- Hold in trust and confidence any names and other identifying information and/or documents disclosed to me, discovered by me or prepared by me.
- Not disclose (in any form/means) any information obtained, discussed, or shared within the SPGR to unauthorised persons or to the public.
- Request permission prior to sharing any information or data shared during meetings.

I understand and declare that I am fully aware of the serious consequences that may follow any breach/contravention of this Pledge of Confidentiality. _____

Name: _____

Signature: _____

Date: _ _ _ _ _

Appendix 5: Street Pesticide Reference Group Evaluation Questionnaire

Street Pesticide Reference Group (SPRG) Evaluation Questionnaire 2018

Dear Street Pesticide Reference Group member,

We kindly ask you that you take a moment to fill out the following survey which will take no more than 20 minutes.

The purpose of this survey is to evaluate the performance and effectiveness of the Street Pesticide Reference Group (SPRG) in meeting our Terms of Reference (ToR) objectives.

The survey is a monitoring mechanism to assess how we are meeting our objectives in the ToR and where we need to improve.

Your responses are confidential but will be presented to the SPRG at a later stage and used for reporting to a funder.

Many thanks in advance,

UCT SPRG Project Team

* Required

Purpose of the Group: (1) Broad Oversight

The SPRG is meant to act as the research project steering committee for projects related to street pesticide poisonings. Members will be advisors for the research team by providing broad oversight and advice on the implementation of the project.

1. What do you see have been the key ways in which the SPRG currently has provided advice to the project team. Please list. *

2. Do you think there are any ways in which the SPRG could improve on the current advice giving mechanisms listed in your answers above? Please explain and give details. *

Purpose of the Group: (2) Advice and Direction

The SPRG will act as the research project steering committee and be advisors for the research team by providing advice and direction on the content and format of the project materials.

3. Have you contributed to the development of the project materials (flip chart, alternative cards, training manual, training workshop, laboratory testing, questionnaire etc.)? *

Mark only one oval.

- Yes
- No
- Other: _____

4. If no, why not?

5. To what extent do you feel the production of the materials has been a collaborative effort? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
No collaborative effort at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Large collaborative effort

6. Do you have any comment on this specific goal of the SPRG?

3. Purpose of the Group: (3) Terms of Reference

The SPRG will act as the research project steering committee and be advisors for the research team by revising the Terms of Reference (ToR) as deemed appropriate from time to time.

7. Do you think the Terms of Reference are appropriate and suitable for the scope of the group? *

Mark only one oval.

- Yes
- No
- Other: _____

8. If not, please comment on the Terms of Reference.

9. Are the Terms of Reference an effective mechanism for monitoring the SPRG? *

Mark only one oval.

- Yes
- No

10. If not, please explain.

11. How often should the Terms of Reference (ToR) be revised? *

Mark only one oval.

- Never
- Sometimes
- Often
- Other: _____

Membership

Members of the SPRG will consist of individuals with specific interest in street pesticides and expertise in various, relevant fields.

12. How important do you think it is to bring various stakeholders together 8 times per year to communicate street pesticide and health issues? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not at all Important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Important

13. Based on your response above, please explain why? *

14. Do you think the SPRG provides the best method of bringing stakeholders together for discussion? *

Mark only one oval.

- Yes
- No
- Other: _____

15. If not, how could this be improved?

16. Please comment on the current member composition of the group. *

Meetings

17. To date, how many meetings did you attend? *

Mark only one oval.

- 1
 2
 3

18. If you have been unable to attend a meeting, please let us know what some of the challenges/difficulties were that prevented you from attending.

19. Please answer this statement: I make an effort to read through information sent in advance of meetings? *

Mark only one oval.

1 2 3 4 5

Strongly Agree Strongly Disagree

20. Please note the ways that you contribute to the group discussions: *

Check all that apply.

- Input at meetings
 WhatsApp
 Comment on drafts via emails
 Other: _____

21. Is the frequency of the meeting appropriate? *

Mark only one oval.

- Yes
 No
 Other: _____

22. Please comment on whether the meeting style i.e. round table discussions, is effective, or whether a different style would be more appropriate? *

Information Sharing

23. Rank your preferred method for contact? *

Mark only one oval per row.

	1st	2nd	3rd
E-mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Phone Call	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WhatsApp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. A project site has not been set up as we have not found a suitable platform for sharing information. Do you feel a shared project site is necessary or is attaching documents to emails preferred? *


General

25. Overall, how effective do you feel the SPRG is? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not at all effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely effective

25. Do you have any other thoughts or comments on the SPRG including any suggestions for improvements?

Powered by
 Google Forms

Appendix 6: Terms of Reference for the Street Pesticide Reference Group



Division of Environmental Health, School of Public Health and Family Medicine, University of Cape Town

TERMS OF REFERENCE

BACKGROUND

Between 2007-2010, the Centre for Environmental and Occupational Health Research (CEOHR) at UCT through funding by the South African Medical Research Council (SAMRC) and a Danish grant through the Department of Health (DoH), revealed the extensive use of highly toxic "street pesticides" and the poisoning of children in Cape Town's poor communities beleaguered by pest infestation. It further highlighted that crowded informal townships lack systems for sanitation and refuse removal, providing the conditions for pest infestations which can be endemic and highly problematic.

The City of Cape Town (CCT) management have requested UCT conduct a follow-up research project on a much larger scale since the findings of the previous SAMRC funded project provided the CCT officials with data for evidence-based policy making and to implement pilot interventions.

TITLE

The group will be known as the Street Pesticide Reference Group (SPRG).

PURPOSE / ROLE OF THE GROUP

The Street Pesticide Reference Group (SPRG) will act as the research project steering committee and be advisors for the research team. The SPRG will: 1) Provide broad oversight and advice on the implementation of the project 2) Provide advice and direction on the content and format of the: – Data collection tools and methods - Intervention Development and Piloting – Project Materials 3) Revise these Terms of Reference as deemed appropriate from time to time.

MEMBERSHIP

Members of the SPRG will consist of individuals with specific interest and expertise in forensic science, toxicology, community health, environmental health, anthropology, epidemiology and clinical practice. It will also be comprised of suitably identified community stakeholders identified by the initial SPRG.

Members will be expected to:

- Make a reasonable contribution of time to attend meetings.
- Make an effort to read through information sent in advance of meetings.
- Offer constructive feedback and take an active role within group discussions.

FUNDING

The group is unfunded. The costs of members participating in activities shall be borne by the member.

MEETINGS

- Meetings will be held initially once a month with ongoing reviews on their frequency. They will be held in either *Seminar Room 1 or 2, 1st Floor, Entrance 4 or 5, Falmouth Building, UCT Medical School* (during office hours; 9am - 5pm). If the seminar rooms are unavailable, directions to alternative venues will be provided.

- Meetings will be organised by the Researchers and chaired by either the PI or a group member. Group members can assume the role of secretary or chair of the meetings. They will be supported in this role by the PI.
- Inform either the Principal Investigator (PI) A/Prof H-Andrea Rother and/or the main Researchers (Nanziwe Khumalo and Christie Godsmark) prior to meetings if they are unable to attend.
- The PI will generate an agenda which will include topics to be discussed at the meeting. SPRG members are encouraged to inform the PI and Researchers of any topics they would like raised at the meeting.
- Non-members of the SPRG will be invited to group meetings upon agreement on their potential benefit to the project.

SHARING OF INFORMATION AND RESOURCES

- Information sharing will primarily be through email contact, unless specified differently. Lengthy meeting papers should be sent with no less than 1 week notice and are available as electronic or paper copies. Short documents (<2 pages) can be made available on the day of the meeting although efforts to send them prior to the meeting should be made.
- A UCT Vula Site will create to share information and resources.

AMENDMENTS TO THE TERMS OF REFERENCE

Amendments to these terms of reference shall be by unanimous agreement of existing members of the Reference Group.

Appendix 7: Technical Advisory Group Members

Henk Bouwman	Professor Ecotoxicology	North-West University
Andrea Rother	Professor Environmental Health	University of Cape Town
Sheila Willis	Pesticide Action Network	United Kingdom
Zoe Emdur	US Environmental Protection Agency	USA
Lance Wormell	US Environmental Protection Agency	USA
Sara Quandt	Professor Department of Epidemiology and Prevention	USA
Thomas Arcury	Professor Department of Family and Community Medicine	USA
About Thiam	Pesticide Action Network	Senegal
Elroy Plaatjies	Principal Environmental Health Practitioner	Cape Town

Ant Control: Solution



ANT FACTS
Ants feed together so many can be targeted at once during management. They also leave a "scent trail" so be sure to clean this away when controlling for them.

Ingredients
Vinegar (any type)
Water
Chilli powder
Equipment
Cup (any type)
Spray bottle
Plastic bag

Purpose – This vinegar solution is for killing ants and removing their scent trail.



Rodent Control: Trap [IsiXhosa or Afrikaans]



Brown Rat (Norway Rat)



Black Rat



House Mouse

RODENT FACTS
Rats are excellent climbers. Remove dense vegetation along the house and also ensure cracks and openings near the roof are sealed.



NO



YES

Ingredients
Peanut butter or vetkoek or piece of meat
Equipment
Rat trap
Soap water
Water

Purpose – This trap is for killing rats and mice. It needs to be with a fast spring snap trap. DO NOT use the common wood ones, these are not strong enough.

Picture 1

PLACE THE TRAP near where you have found the droppings. Find a path that the rodents commonly use in your house. Make sure the trap is out of reach from people, children, pets or animals who could get hurt from it or put behind cupboards.

Picture 2

ATTACH IT firmly to the ground or solid place to keep the rat from dragging the trap away. Leave the unset trap in the same place for three days with food in it. Rodents are shy about new things in their territory and will only approach the trap when they are used to it.

Picture 3

BAIT IT with food such as peanut butter, vetkoek or old meat when setting up the trap.

Picture 4

WASH THE TRAP after catching a rat or mouse with soap (Sunlight or OMO) and throw out the wash water. The trap must be washed before it is used again to remove the smell of the dead rodent which will prevent other rodents from coming close to the trap.

Picture 5

PUT DEAD RODENT in a rubbish bin with a lid.

Appendix 9: Notes from the Informal Vendor Meeting

Date: 13 June 2018

Time: 12:30 – 14:30

Venue: Nonqubela Station Room, Site B, Khayelitsha

Attendees: 43, majority female (about 75%), average age about 50-60 years old but range from 28-65 years old as an estimate, all black.

City of Cape Town EHP/As: Madoda Saliwa (Madoda.Saliwa@capetown.gov.za) organised event with Informal Trader's Association Chairperson and Afikile Mxokwana translated (Afikile.Mxokwana@capetown.gov.za).

- The meeting opened with a welcome from Afikile and the Chairperson and an opening prayer from the community.
- Chairperson mentioned that items of interest included:
 - Which products are right/wrong
 - When to use the products
 - How to use the products
- “It is a medicine that I sell” – Street vendor
- Selling time varied from less than a year to 5 years to 10 years for some.
- The vendors usually put one cap of poison in per cool drink bottle and mix at work (they bring water from their home).
 - Some vendors mentioned washing their hands after mixing the pesticides.
- Vendors stated that straws and bottle mixtures are the same type of danger but that the small bottles of concentrate were more dangerous.
- The vendors did not claim to tell the customer which the right chemical was to use but rather they let the customer choose.
 - “Sometimes we tell them, that one is strong, it is quick!” – Street vendor when talking about the concentrate.
- The vendors could smell the chemicals from the small concentrate bottles.
- When asked where they get it from, they stated:
 - Zimbabwe, India, China
- Vendors stated that Green leaf products are not as dangerous as cooldrink bottle mixtures because “it is legal and has steps written on package”.
- “It is dangerous for cockroaches because it kills cockroaches” – Street vendor answering the question about who the pesticide is dangerous for.
- “It is not legal for cockroaches, but it kills cockroaches!” – Street vendor when asked about the legality of the products.
- All vendors agreed that children could drink the pesticide in the cool drink bottle that looks like milk but wouldn't drink from the agricultural bottle with the labels.
- “Mixing bread and poison, the baby is gonna eat it” – Street vendor commenting on the practice of leaving poison baits out.
- Vendors thought spraying pesticides on mattress is OK because the mattress gets covered in sheets and blankets.
- Group agreed that they got headaches when smelling the concentrate and get a tight chest.
- Question from the audience on chronic health effects:
 - “As much as I understand and hear the health problems, the reality is that the pests are there. What do we do?”
- Vendors are prepared to sell rat traps if it is profitable. But:
 - “It will take time to introduce the rat traps as they are not as quick and strong”.
- Andrea posed the question:
 - “You have to ask yourself, are you comfortable selling something that will kill children?” – Andrea Rother
- Vendors will sell alternatives so long as they are profitable.
- A final question from the audience before closing was about the effect of adding water to the chemical, does it dilute it and therefore lessen the danger.

- “Since you have come here and discouraged us from selling pesticides, how will we know how to use alternatives?” – Street vendor
- Chairperson invited UCT and CCT to another meeting (they meet monthly) with street vendors in the future to hear more about the alternatives.
- Street vendors were given tea and lunch as a thank you for their meeting as well as a CCT Environmental Health back pack that contained a reference book (Pesticides are Poison), free rat trap and stickers on how to correctly read pesticide labels.

Christie Godsmark Observations

We might need to start with vendors giving instructions for use on the pesticides they sell and telling their customers about the dangers of the pesticides, perhaps with a GHS symbol stuck onto them. This could be a first step.

Contact

Cape Community Newspaper
083 437 4076 / 021 488 4646

Pictures from the Day





Appendix 10: Report from Design for Development

Tasks 1: Creation of art brief with UCT team – DONE

Task 2: Receive final copy for design – DONE

Task3: Creation of Invisible Pesticide Residue Symbol, focus group feedback, and sign off – DONE

Task 4: Illustration style development and authentic references research – DONE

Task 5: Rough sketches for content and composition of illustrations in four batches – IN PROCESS

Task 6: Design of flipchart and booklet – IN PROCESS

Task 7: Layout of each page of Flipchart and Booklet – IN PROCESS


Although you had hoped to move quicker with the process – the introduction of focus groups, checking the art brief and checking with reference materials for authenticity has proved to make the flip chart a stronger document reflecting realities of people for whom it is intended. Unfortunately, time is always a cost for such thorough investigation. Now that we have the content and art briefs defined so clearly the design and layout will happen quickly. We aim to spend one week per batch (four in total) for the illustrations, and in addition one week per draft (three drafts in total) for the layout. Some of this can happen concurrently. This is a common experience of organisations we have worked with over the many years of communication and training materials development. It always pays off in the end to follow a more rigorous route even if it takes longer.


Should you require any more information about the production process, please contact Rosie Campbell of Design for development for further discussion.

Appendix 11: Workshop Attendees

Pesticide Poisoning Workshop Attendees
5th June 2018 (09:00 – 13:00)


Name	Email Address	Phone Number	Signature
Nadia Beesley	nadia.beesley@westerncape.gov.za	082 599 4590	
Richard Pietersen	richard.pietersen@westerncape.gov.za	082 300 8310	
Bianca du Toit	Bianca.DuToit@capetown.gov.za	083 555 4893	
Phindiwe Mlumbi	Phindiwe.Mlumbi@capetown.gov.za	082 551 8602	
Eric Damon	eric.damon@capetown.gov.za	083 766 0842	
Lindani Thwala	lindani.thwala@capetown.gov.za	083 485 6310	
Sandile Mpikampi	Sandile.Mpikampi@capetown.gov.za	071 996 9268	
Nolundi Adonis	nolundi.adonis@capetown.gov.za	078 728 9266	
Yonela Mentese	yonela.mentese@capetown.gov.za	078 1099 467	
Davids Ariefdien Shafiq	Shafiq.DavidsAriefdien@capetown.gov.za	082 819 0905	
Bridgette Kaliza	bridgette.kaliza@capetown.gov.za	079 515 3981	


Mzwethemba Qunoo mzwethemba.qunoo@capetown.gov.za 082 7905260 

Name	Email Address	Phone Number	Signature
Zanele Magina	zanele.magina@capetown.gov.za	076 012 6147	
Matokelo Mnguni	matokelo@mnguni@capetown.gov.za	064 252 7577	
Melvin Frans	melvin.frans@capetown.gov.za	083 585 9322	
Matanki Mzimba	matanki.mzimba@capetown.gov.za	076 037 5353	
Allan Slinger	Allan.Slinger@capetown.gov.za	074 040 0819	
Brian Viljoen	Brian.Viljoen@capetown.gov.za	073 865 0473	
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Appendix 12: Outline of Training Workshop



UCT Training Workshop: Preventing Pesticide Poisonings

Date: 5 June 2018
Time: 09:00 – 15:15
Venue: Frances Ames Room, Health Sciences Campus, Anzio Road, Observatory, 7925
CPD POINTS AVAILABLE

WORKSHOP AGENDA

09:00 – 10:00 Welcome, Introductions and Training Methods ([Professor Andrea Rother](#))

10:00 – 11:00 Health Risks of Illegal Street Pesticides & Risk Mapping ([Professor Andrea Rother](#))

11:00 – 11:30 Tea Break

11:30 – 12:15 Communicating Street Pesticide Risks to Communities ([Dr Christie Godsmark & Prof Rother](#))

12:15 – 13:00 Less Harmful Pest Control ([Professor Andrea Rother](#))

13:00 – 13:30 Lunch

13:30 – 14:00 Notifying a Pesticide Poisoning ([Dr Cindy Stephens](#))
Poison Information Helpline and discussion

14:00 – 14:30 Surveillance: Pesticide Forensics and Toxicology ([Bronwen Davies](#))

14:30 – 15:00 Pesticides as a Last Resort (labels, regulations, storage) ([Professor Andrea Rother](#))

15:00 – 15:15 Closure of Workshop



Appendix 13: Workshop Evaluation

Parts of the Workshop Most Liked

In the open-ended question "What did you like most about the workshop" the following responses were provided, in order, beginning with the most common point: the workshop was informative (n = 7); risk mapping was highlighted as an enjoyable aspect (n = 3); the workshop was relevant to their work (n = 2); learning about forensics and toxicology (n = 2); interactive mode of the workshop (n = 2).

What Participants Learnt that was New and Relevant for their Work

Some participants felt they gained new knowledge (n = 2) with some (n = 3) stating that learning about training methods was new and relevant to their work as well as learning about forensics and toxicology (n = 3). Other aspects that participants rated as being new and relevant to their work was: alternatives (n = 2), how notification rates are poor (n = 2), not to drink milk when poisoned by pesticides (n = 2) as well as the different types of poisons and poisonings (n = 2).

Workshop Improvements

A number of participants (n = 5) felt that workshop should be run over two days rather than one day. With some participants (n = 2) noting time management was poor and the timing should have been increased (n = 2). Some participants (n = 2) felt that more stakeholders should have been involved in the workshop. A number of participants felt that no further knowledge was needed (n = 6) with some participants (n = 4) stating that they would have liked more information about the alternatives to street pesticides. Other areas where participants would have liked more information about include: labelling and storage (n = 2), types of street pesticides (n = 1), flip chart (n = 1), pathology and deaths caused by street pesticides (n = 1), government involvement (n = 1), notifying a poisoning (n = 1), Poison Control (n = 1) and case studies on the lifecycle of data (n = 1).

Additional Comments

Further comments by participants were that the content was relevant and informative (n = 4) but that time management was poor (n = 3). Other comments noted by single participants included: content exceeded expectations, earlier notifications for EHPs on pesticide poisoning cases, stakeholder involvement in the workshop, the development of short courses for EHAs, certain logistics could be improved upon (water available, workshop over 2 days rather and more accessible venue). Some participants expressed gratitude to the facilitators for the workshop in their evaluation (n = 2).

Appendix 14: List of Interested People Unable to Make First Workshop

Occupation	Name	Email Address
Forensic Pathology Officer (TYB)	Nadia Beesley	nadia.beesley@westerncape.gov.za
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Environmental Health Assistant (Northern)	Joseph Mtsi	
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Environmental Health Assistant (Khayelitsha)	Nomzamo Mngonyama	Nomzamo.Mngonyama@capetown.gov.za
Environmental Health Practitioner (Khayelitsha)	Afikile Mxokwana	Afikile.Mxokwana@capetown.gov.za
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