Ministry of Environment and Mineral Resources

REPORT ON EAST AFRICA (KENYA, TANZANIA, UGANDA) DENTAL AMALGAM PHASE DOWN INCEPTION WORKSHOP

Kenya Institute of Education, Nairobi

18-19th Dec, 2012

Acknowledgement

The East Africa Dental Project aims to promote the WHO-UNEP phase down approach of dental amalgam in three selected countries in East Africa, Kenya, Tanzania and Uganda. This project is an activity of the Mercury in Products Partnership area of the Global Mercury Partnership (GMP). The GMP in Products aims to reduce global mercury demand related to use in products and promote its alternatives. It will provide technical support to countries to improve management of use and anthropogenic release of mercury and is listed as one of the activities under the UNEP mercury project MC/4030-09-04. In addition, this project was approved and is being funded by the government of Norway ODA for 2012. In Kenya, it is executed by the Ministry of Environment and Mineral Resources jointly with the Ministry of Medical Services.

The Ministry wants to thank all the partners and stakeholders involved in this effort

ACRONYMS

BMP	Best Management Practices
CPDS	Continuous Professional Development Sessions
EADP	East Africa Dental Project
ESM	Environmentally Sound Management
FDI	World Dental Federation
GIC	Glass Ionomer Cement
IADR	International Association of Dental Research
INC5	5th Session of the Intergovernmental Negotiating Committee
KDA	Kenya Dental Association
MEMR	Ministry of Environment and Mineral Resources
MOPHs	Ministry of Public Health and Sanitation
MOMs	Ministry of Medical services
MPDB	Medical Practioners and Dentists Board(MPDB)
TOT	Trainer of Trainers
WHO	World Health Organization

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18TH DECEMBER 2012, KENYA INSTITUTE OF EDUCATION

Background

The Ministry of Environment and Mineral Resources of Kenya and the Division of Technology and Economics of UNEP DTI have signed a memorandum of understanding to implement a project entitled **"Promoting the 'phase down' approach of dental amalgam in developing countries"**

The project aims to promote the WHO-UNEP phase down approach of dental amalgam in three selected countries in East Africa, Kenya, Tanzania and Uganda. This project is an activity of the Mercury in Products Partnership area of the Global Mercury Partnership (GMP). The GMP in Products aims to reduce global mercury demand related to use in products and promote its alternatives. This project contributes to UNEP Programme of Work (POW) by providing technical support to countries to improve management of use and anthropogenic release of mercury and is listed as one of the activities under the UNEP mercury project MC/4030-09-04. In addition, this project was approved and is being funded by the government of Norway ODA for 2012.

The inception workshop was held at the Kenya Institute of Education in Nairobi Kenya on 18-19th December, 2012

Attendance:

A total of 49 participants attended the meeting from Tanzania, Uganda, Kenya, United Nations Environment Program (UNEP), World Health Organization (WHO), World Dental Federation (FDI),,and International Association of Dental Manufacturers (IDM) . The full list of participants is in Annex 1.

1. Opening session

Opened at 9.07 a.m with a word of prayer

Welcome remarks was given by Francis Kihumba of the Ministry of Environment. He said that the meeting linked the Ministry of Environment and Ministry of Health, World Health Organization and United Nations Environmental Program. Mr. Kihumba reported that the international community was at the time discussing on a legal document on mercury release into environment therefore the meeting was timely to get input from oral health personnel.

Introduction of all delegates was done.

a) **Opening remarks by Dr. Desiree Narvaez, UNEP Chemicals, Geneva**

,She welcomed all delegates and wished everyone success in the workshop. Since the UNEP regional office for Africa (ROA) is located in Kenya, she requested UNEP ROA to say a few words.

b**) Opening remarks by Prof. Bary, UNEP**

Prof. Bary expressed his appreciation to the Government of Kenya through the Ministry of Environment and the organizers of the meeting. He thanked the coordinators from Uganda and Tanzania, project partners from WHO, FDI, ILiMA and theIDM. He expected the workshop to be successful

c) **Opening remarks by Dr Poul Erik Petersen, WHO Oral Health Programme.**

He introduced himself and gave his career background. He has worked for WHO for 22yrs for health systems and quality of care (12), oral health department in NCD department for last 10yrs.Work has previously been done with several partners e.g. IADR, UNEP, FDI, and Dental Manufacturers to know the different aspects of amalgam. He expected the meeting to address local experience and alternatives to amalgam and it would be a feedback mechanism to WHO.

d) **Opening remarks by Dr. Lucina, Ministry of Public Health.**

She welcomed the workshop delegates on behalf of the team that was working on the project with culmination of today's workshop. She noted that this was a timely project

e) **Opening remarks by Dr. Jane Wamai, Chairperson, Kenya Dental Association.**

She noted the following;

- Kenya Dental Association is an association that represents voice of dentists in the country.
- She stressed that KDA would like to maintain the use of amalgam as a restorative material.
- Dental amalgam is amalgamated mercury not mercury free.
- Dental amalgam is a material that has and is being used for training dentists at the two dental schools. The study here shows that it is most dentists' first choice for tooth restoration. Amalgam fillings have been extensively used to save teeth.
- The only materials comparable to dental amalgam are cast gold and ceramics and use of these would be a challenge in our emerging economy.
- Alternative materials are associated with higher treatment failures and this is highest felt in poor resource areas.
- Oral health awareness and care is very low in developing countries therefore strengthening of prevention is crucial. A preventive message should be sent out to reduce incidence of dental disease.
- Delegates were urged to enable dentists to use their materials of choice at the same time caring for the environment. This is possible through promotion and adoption of a proper policy for the environmentally sound life cycle management of amalgam.

- KDA can create forums where implementation of full lifecycle management of amalgam is implemented.
- She then welcomed all delegates to workshop.

f) **Opening remarks by Dr Stephen Irungu, Chief Dentist, MOMs.**

Dr Irungu conveyed greetings to the delegates from the Director of Medical Services and gave his speech on his behalf.

Highlights of the speech were:-

- Dental amalgam is a filling that has been widely used in management of dental caries for the last 150 years. Dental caries is a major public health problem globally despite much effort in health promotion and disease prevention.
- Mercury in amalgam is recognized as a chemical of global concern due to its long range transport in the atmosphere, its persistence in the environment, its ability to bioaccumulate in ecosystems and its significant negative effect on human health and the environment.
- Dental amalgam use represents 10% of total global mercury consumption. It therefore plays a significant role in total mercury contamination of the environment and thus it is important that efforts must be made on how to reduce this effect in the environment.
- Phasing down amalgam use in management of dental caries has been proposed. Strengthening of disease prevention and health promotion, development and use of alternative materials for dental restorations are two approaches that promote best professional practice.
- The MOMs is committed to this process and promised to give the division of oral health all the necessary support to ensure success in implementation of the proposed phase down project.
- He recognized UNEP, WHO, and other partners for their participation and sponsorship of the East African dental amalgam phase down project.
- He gave a warm welcome to all international delegates.
- He hoped that this workshop will come up with a way forward on dental amalgam use in this region.
- He declared this workshop officially open.

2. Situational analysis:

2.1 KENYA

A presentation was made on Dental Amalgam Issue in Kenya, Dr Linus Ndegwa, KDA;

"Dental amalgam issue in Kenya and networking among dentists in Kenya"

- Dr Ndegwa gave a brief explanation on dental caries and fillings. He highlighted that as the issue of dental amalgam is discussed, it should be noted that this dental amalgam is used to save teeth in our society including those of the poor.
- Registered dentists In Kenya are 963(70%) for 42million therefore we have a dentist to patient ratio of 1: 41973

He showed the distribution of medical and dental professions per province. Most dentists are located in the city of Nairobi. As at 2011 only 413 dentists were actively registered with Medical Practitioners and Dentists Board(MPDB).

- Most dentists' specializations are in Oral and Maxillofacial Surgery with only one specialist in the field of Dental Materials.
- In Private clinics 50% use dental amalgams.76% of dentists regard amalgam as material of choice
- Most of the fillings done over the last 4 years are amalgams.
- Best management practices on amalgam are currently taught at Kenyan dental schools.
- Majority of cavities are large and large amalgam capsules are used to restore the teeth. The fillings to extractions ratio is 1:30
- Kenyan institutions support phase down approach. The global shift towards prevention would improve oral health. The cost of dental treatment is high and phase out of amalgam would lead to more extractions as many may not afford alternative materials.

He pointed out that networking between Dentists and KDA was done by via monthly Continuous Professional Development Sessions(CPDS), website, journal, bulk sms and bulk emails.

2.2 UGANDA

Dr. Wandera presented the Amalgam issues in Uganda**;**

- Uganda is located to the west of Kenya.
- It is a landlocked country.
- Dentistry would be considered a young profession in Uganda.

- The setup of the Ugandan health system was based on Europe's health priorities, with the opinion being that there were few dental cases.
- They initially had a 3 year training course for public health dental assistants on community health and basic dental procedures (extractions and silver fillings).The 4 year Bachelor of Dental Technology started in 2010.
- Bachelor of Dental Surgery is a 5 years degree course, with 11-15 graduates annually.
- Most dentists are employed in-Government and faith based clinics
- There are 300 Bachelor of Dental Surgery degree holders with 80% working in urban areas.
- There are 800 Public Heath Dental Officers (PHDO) with 50% in urban areas.
- Upward trend in dental caries prevalence. decayed, missing,filled teeth(DMFT) most due to decay in Uganda.
- A study done in 1987 shows PDHO, who are supposed to be preventive, are actually more engaged in clinical practice than preventive management?
- There is a requirement for a full medical and dental checkup before returning to school which has had a positive impact as early caries are detected.
- Summary of the respondents to the amalgam study comments: amalgam is the least expensive; no local manufacturer of dental materials: amalgam remains strongest restorative material; there is higher secondary decay for alternative materials; consider conservative use of amalgam, maximum number of teeth per mouth that can be restored with amalgam,; amalgam is easy to manipulate; no interference by saliva in amalgam use, easy storage for amalgam.
- Summary of comments by traders in dental amalgam: import dictated by demand from dentists and patients
- Amalgam still widely used by dental personnel in Uganda.
- There is interest by Uganda Dental Association to know the future of amalgam and what new materials are available and comparable.
- Uganda Dental Association will hold a CPD in March 2013 on amalgam phase down

2.3 TANZANIA:

The Dental amalgam issue in Tanzania was presented by Dr Febby Kahabuka;

- The different cadres of dental professionals are Dental Therapists, Assistant Dental Officers and Dentists.
- Dental therapists undergo 3 year training in two schools in Tanzania. There are 190 dental therapists. They are trained to do simple class I fillings using amalgam and glass ionomer cement(GIC).
- Assistant dental officers in addition will do simple Class II fillings.
- Dental surgeons are trained at one dental school at Muhimbili University. There are 104 registered dentists.
- Dental services are offered at 136 hospitals, 63 health centers and 3 dispensaries run by religious based organizations.
- Dental amalgam is the most commonly used material. Most clinics use amalgam capsules.
- Disposal of left over amalgam is mainly with other general waste or when patients spit and it is flushed through the suction.
- Preference of material of choice is not documented. Awareness is also not documented.
- Dentists preference depends on availability of materials, whether they are practicing in a public or private facility, affordability, accessibility and the level of education and exposure.
- In 2011, 28,910 restorations were done versus 303,000 extractions.
- She concluded that there is a need to raise awareness on hazards related to mercury waste and best waste management practices.
- Need to put in place mechanisms for waste management.

3. EADAP Project Overview: Mercury negotiations and partnerships; project objectives, components, expected output

Desiree Narvaez

- Mercury is a global concern as it is toxic to humans and the environment. It travels a long distance; it is persistent and bioaccumulates in fish. Methyl mercury is the most toxic form of mercury.
- 2010 report shows various sources of mercury releases.
- UNEP global mercury programme has two tracks: Negotiations for a globally binding treaty and partnerships.
- The chair prepared a draft treaty text for consideration at INC5 in Geneva in January 2013. INC4 African group gave suggestions that went into the draft document.
- The draft text includes restriction of production, import and export of mercury-added products,, promotion of use of alternatives, education of consumers on alternatives, and discouraging insurance policies that promote mercury added product.
- 30% of mercury is used for mercury added products. Dental amalgam accounts for ¼ of demand of mercury added products.
- A significant amount of mercury is released from use of dental amalgam e.g. incineration, crematoria, cemetery, and indirect diversion of dental amalgam into small scale gold mining.
- The real cost of dental mercury, cost required to minimize releases, real cost greater than composites and other alternatives to amalgam.

3.1 Project Overview

Global mercury partnership was mandated in 2005 by Governments to minimize mercury pollution for different products including dental amalgam.

Objectives of the dental amalgam project in developing countries:

To explore essential conditions for a phase down in the use of amalgam

This is to be achieved through the following activities:

I. Investigation of current supply and trade of dental amalgam and materials alternative to amalgam and make recommendations for future information systems.

II. Asses the current waste management practices in the three east African countries.

III. Create awareness of preventive dental care and encourage a switch to appropriate alternatives to dental amalgam, when clinically indicated among dentists and patients.

IV. Demonstrate environmentally sound management of dental restoration materials waste in selected dental facilities in the three countries.

3.2 Project components

i. Trade study and survey of dental amalgam waste management practices

ii. Selection of national project coordinator and social preparation

iii. Development of awareness raising materials on disease prevention and available alternatives for dental restoration

iv. Inception workshop

v. Demonstration activities

vi. Stakeholders/Interagency meetings

vii. Selection of Demonstration health clinics

viii. Coordination with local clinics

ix. Capacity building in the ESM of waste

I. Results workshop

3.3 Expected project Outputs

- Report on supply and trade flow data of all restorative materials
- Report on dental waste management practices of all dental materials
- Raised awareness amongst patients and dentists on preventive dental care and use of alternative restoration materials
- Demonstration of best dental waste management practices for all dental restorative materials
- Report of lessons learned providing recommendations for promoting the phase down approach

For more information you can email desiree.narvaez@unep.org

3.4 WHO policies on oral health and dental restoration

Dr Poul Erik Petersen, Global Oral Health Programme, Chronic Disease and Health Promotion, WHO, Geneva, Switzerland

- Objectives of the presentations were outlined.
- Denmark has moved from having high caries rates in the 1970s to a point where they have a very low caries rate due to a preventive campaign.
- Dental caries is a major public health problem globally, with variations among countries. Despite much effort in health promotion and disease prevention, dental restorations are still necessary.
- Social determinants-equity in oral health and oral health care, income, education and residence, living conditions and underserved populations.
- Primary health care approach by WHO-essential care for disease control, maintaining health and quality of life.
- National oral health programmes entail community, professional and individual strategies needed to improve oral health.

WHO 60.17 urges member states to take action(14 items)

- National policies and public health programmes
- Risk factors
- Settings for health
- Oral diseases and conditions
- Preventive measures and health promotions
- Financing oral health care
- Workforce in oral health
- Oral health research and information systems
- Health personnel –train and retain

The poorest alternative in dental care is dental extraction. Extraction is failure of modern dentistry.

Future use of materials was discussed in a meeting in Geneva in 2009. Major concerns in use of restorative materials

- Principal uses
- Leakage and recurrent decay
- Overall durability fracture and wear resistance.
- Cavity preparation and clinical considerations

Choice of material based on:

- The tooth
- Site and size of caries lesion
- Cost and health care financing
- Patient preference
- Health care provider preference
- Technology
- Environmental factors

Major conclusions of WHO meeting were:

- A progressive move away from dental amalgam would be dependent on adequate quality of alternative , reiterative materials
- Prudent to consider phase down instead of phase out of dental amalgams at this state due to limitations in durability, fracture resistance and wear resistance.
- While GIC and resin based composites are promising, there remains a need to promote development of quality dental restorative materials for use in public health programmes.
- Urgent need for research.
- Alternative materials are desirable from an environmental perspective
- Amalgam will be needed in the short and medium term.

- Oral health promotion and dental caries prevention are best ways to reduce the need for dental restoration and phase down the use of amalgam

Recommended that providers:

- Use of safe affordable materials.
- Adopt minimal intervention approach to dental care.
- Shift from a restorative to a preventive approach: Effective use of fluoride-clinical application, self care.

Need to use practical guide to integrating best management practices(BMPs) in dental care

3.5 Pilot project in East Africa.

Trade study and survey

Development of awareness

Key partners:

- Policy makers and national authorities
- Third party payment systems international association for dental research
- FDI
- Dental manufacturers
- WHO and UNEP

Future tasks:

- IADR-research and evidence
- Evidence based Practice
- Dental industry-product development

4. iLima Organization, Cecilia Ng'ang'a

Cecilia Ng'ang'a gave a brief on the iLima Organization.

iLima is a not for profit organization established in 2005.

iLima has been focusing on mercury pollution. It is an active participant in the on-going intergovernmental negotiating committee towards a legally binding instrument on mercury.

The project team comprises the iLima team and the research team:

The iLima team is:

- Cecilia Ng'ang'a

The research team is:

- Dr. B. Kisumbi
- Dr. L. Gathece
- Dr. L. Koiyo
- Dr. Jane Wamai

4.1 Dental Amalgam and its Alternatives, Trade and Waste Management Practices, Dr. Benina Kisumbi

There are Country coordinators in the three countries:

- Kenya – Dr. Benina Kisumbi
- Uganda – Dr. Margaret Wandera
- Tanzania – Prof. Febronia Kahabuka.

Objective:

To conduct trade survey and survey current waste management practices of dental amalgam and its alternatives in East Africa, Kenya, Uganda and Tanzania

Specific objectives

1. To assess dental amalgam trade flows and its alternatives in the three selected countries, Kenya, Uganda and Tanzania
2. To assess the current practices of dental amalgam waste management and its alternatives in the three countries.
3. To estimate the environment cost externalities/avoidance costs with non amalgam use

Methodology:

Study design: It was based on responses both on-line, email, and face to face interview surveys
Study populations: all dentists and traders in dental materials in the three countries

It included all 1054 dentists registered with respective regulatory bodies and all 31 traders

Data collection tools: two self administered questionnaires. Online mode(Using survey monkey). An offline mode was later introduced which was a printed version

Data analysis: SPSS version 17.0

4.2 Results of waste management survey

Response rate: Kenya 8.5%, Uganda 1.7%, Tanzania 7.9% .

The overall response rate was 6.5%.

- Online response not favorable especially in Tanzania
- 70.6% held Bachelors degree with 84% being graduates of local universities.
- More dental extractions are done than restorations
- Amalgam ,composite resins & GIC restorations the more popular restoration materials
- Only 48.5% of the dentists had concern on use of amalgam, 22.1% had concerns about non amalgam materials. Concerns were related to biological safety, none had concerns on environment, need for training on risks with emphasis on environmental risks.
- On handling of amalgam, most dentists use capsulated amalgam but 10.3% used mercury liquid and powder. Only 11.8% had calibrated amalgamators. There is a high risk of mercury exposure in dental settings.
- On handling of amalgam alternatives, 88.2% dentists used light cured resin composite 89.7% dentists mixed GIC manually,7.3% used computer aided design for ceramics,25% used fired ceramics. Modern technology needs to be developed among dentists*
- On handling of waste amalgam, there is systematic way of disposing used amalgam capsules, extracted teeth with amalgam fillings are discarded with other infectious waste. Majority of dentists, 77.9%, did not separate contact amalgam and non contact amalgam. 16.2% decontaminate content of contact amalgam and non contact amalgam
- Only one dentist knew of commercial company that disposes contact amalgam and non amalgam waste.
- Only 5 of the facilities had a plan for disposal of amalgam waste.
- Only 27.9% planned to install amalgam separators.
- 48.5% mentioned using the minimal amount of amalgam for each restoration.

- 54.4% use amalgam capsules.
- 55.9% mentioned stocking of amalgam capsules in variety of sizes
- On protection the use of latex gloves, face masks and eye glasses was universal
- Most knew of at least one way of keeping minimum use of amalgam
- Challenges in waste management were noted as:
    - Poor handling of amalgam waste due to lack of guidelines and policy.
    - Inadequate knowledge and training on waste management
    - Lack of seriousness and compliance on amalgam waste management

4.3 Results of trade survey

- Response rate: Kenya 52.9%, Tanzania 0%, Uganda 20%. Overall response rate is 35.5% with only two completing the questionnaire fully. Online response was not favorable.
- Supply of dental materials: Total amalgam supplied in last 12 months was approximately 2945kg.Private clinics are the major consumers of amalgam, emphasis on private clinics in phase down.
- Amalgam and non amalgam dental restorative materials are widely supplied and used in East Africa.
- Resin composites and GIC are the commonly supplied alternatives.
- Costs of composites and GIC are higher than amalgam.
- Capsulated amalgams mostly used but some facilities still procure and use liquid mercury and alloy powder.
- Most suppliers met demand of clientele.

Challenges in supply of materials

- Increase in cost of importation of mercury
- Price fluctuations
- Competition among traders
- Brochure/manuals are in foreign language hence difficult to interpret

- Low quality packaging

Limitation of the study

- Low response rate of 6.5%
- Online mode of administration of questionnaire was not favorable in our setting.
- Bias as only I.T. competent respondents or those with internet access responded
- Incomplete records

Conclusion:

1. Dental amalgam and non amalgam materials are widely used and supplied in the three countries.
2. All restoratives materials are imported.
3. There is regional/cross border trading across the three countries.
4. Most prevalent treatment is dental extractions.
5. Dental amalgam, resin composites and GIC are used widely.
6. Capsulated amalgam is mostly used.
7. Alternative materials used GIC and composites had higher costs than amalgam.
8. Majority of dentists did not handle waste according to best dental amalgam practice guidelines.

Recommendations:

1) Develop guidelines and policies in supply, handling and waste management of dental restorative materials
2) Incorporate a module in waste management in the present curricula.
3) Financial support in getting separators and recycling plants is needed.
4) Implement oral health promotion and preventive measures.
5) Conduct a survey with a representative sample in the East Africa region.
6) Assess the readiness(willingness of the dentists, appropriate equipment and infrastructure)in In poor countries.

Acknowledgement:

All partners, UNEP, WHO global oral health program, Ministries of Environment and Health , Amalgam phase down Steering Committee, country respondents, national dental associations, country coordinators and the research team.

5. Mercury waste in dental practices in Kenya, Tanzania and Uganda

Best Waste Management Practice and Kenya, Dean, University Dental Hospital, Nairobi.

Presented by :Dr. Kisumbi on behalf of the Dean.

We have policy of medical waste management in Kenya

The National Injection and Related Medical Waste Management (RMWM) document has no mention of amalgam in it.

The curriculum entails training in the science of handling, application and management of waste amalgam.

It is mandatory for students store amalgam waste in fixer in specific sealed containers.

Dental amalgam particles from spittoon and suction percolate into reusable amalgam traps and filters in-built in the dental chairs.

There are no recycling plants for mercury in Kenya.

Behavioral change communication is key to adherence to best dental amalgam waste management practices.

Two studies done among dentists in Nairobi showed 2002,2010 50% and 70%.

The way forward:

- Need to prevent dental caries.
- Education to embrace BWMP (Best Waste Management Practice) to reduce mercury in waste water.
- Support for Oral Health Services

5.1 Questions and answer session

1) Q: Since there is no recycling plant in Nairobi, how can we ensure recycling is done?

   A: We need to invite a recycler to East Africa to be included in action plan.

2) Q: Today's seminar concentrates mainly on East Africa from UNEP what is the concern on phasing down amalgam from other parts the world and developed world?

   A: Some countries have done phase down.

3) Q: Is "Phase down" used in regard to the consumption of amalgam or timelines?

   A: The term phase down refers to reducing the use of amalgam. It is phase down and not phase out as we cannot do without amalgam as of now

4) Q: Is the phase down drive coming from environmental concerns or human health concerns or both concerns?

   A: The drive towards a phase-down in amalgam comes from both hence both WHO and UNEP involved.

5) Q: What is the phase down timeline?

   A: So far there is no timeline but there is a commitment to make a planned action on the phase down.

6) Recommended a discussion for African states to be clear on approach to choose either phase down or phase out. This should be communicated to Kenyan delegation to INC5 so that it lobbies in our favor at the meeting.

6. Selection of Pilot Dental Facilities, Pam Clark, International Association of Dental Manufacturers

Amalgam Waste Management

- Preparation when handling amalgam involves use of protective clothing including gloves, face mask and protective glasses. Protective clothing should also be utilized during amalgam disposal.
- Place amalgam capsule remains (this is the non contact amalgam) in a container marked Amalgam Capsules.
- Do not tip unused amalgam in the sink or garbage bins. Place signs at the sink for all staff to remember this.
- Amalgam waste will be generated when polishing fillings or removing amalgam waste in the mouth. Place the contact amalgam in a container marked "Amalgam Waste". Place any extracted teeth with amalgam fillings and anything caught in the chair filter in the Amalgam Waste container.

- Cover the contents of the Amalgam Waste container with antibacterial solution. Never use bleach or any chlorine.
- Empty the in-line suction filter in Amalgam Waste container.
- Smaller amalgam particles will be captured by the separator which is installed prior to the Municipal drain point.
- It is important to flush the dental unit with suction cleaner at the end of each day to kill micro-organisms. Do not use bleach as this will dissolve mercury out of the amalgam.
- The separator will eventually get full. Never open the separator. Cap it off and remove it. Place it in a container which you will then place in another container awaiting collection by the recycler.
- Never burn amalgam because it will release mercury fumes into the air, therefore never dispose amalgam in general rubbish.

6.1 Clinic Selection for Amalgam Separator for Project

- Separators to be used are known as Sedimentation Separators and certified as ISO 11143 compliant.
- To get ISO certification, separator must achieve a minimum efficient=y of capturing 95% of standard amalgam sample. Particles range in size from 100micron to 1micron.
- The separator works by water passing through baffles that will catch amalgam particles. Water flow is regulated by flow regulators or capacitors
- Installation requirements:
    - Should be near drain outlet
    - Suction system must be clean and free of debris and have no leaks
    - Piping used to connect separator must be kept straight and free of bends
    - Ensure there is a slight fall between suction system, waste header tank and separator or else amalgam will settle in pipes instead of separator
- Maintenance:
    - Weekly check for leaks
    - Replace separator when full or after 12 months of use
    - Flush chair with suction disinfectant to ensure disinfectant remains in separator

- Interim amalgam waste storage – interim waste storage may be necessary until commercially viable amount is ready for recycling.
- Recommendation:

Proving that dentists can manage amalgam waste is a way to keep amalgam in the dentist's tool to support amalgam storage

  - kit.

6.2 Question and Answer session:

1) Q: What is the cost of a separator?

   A: The separators shown during the presentation cost about $800 in Australia

   A local dental equipment supplier confirmed they would give cost separator in Kenya.

2) Q: Can an appeal be made to the government to reduce cost of separator which is an important but expensive piece of equipment

   A: There may be an opportunity for funding once this project is complete and needs have been analyzed. Funding can only come if it is identified as a real need and that it is vitally important.

3) Q: Are there separators available for alternative materials?

   A: There are no separators available yet for non amalgam materials.

7. Training of Dental Personnel on BMP/ESM of Waste Amalgam and its Alternatives

Jean-Luc Eisele, World Dental Federation.

Threat to Oral Health: Oral health is not mentioned in WHO 2014-2015 work plan.

FDI vision 2020 has 5 priority areas

- meet the increasing need and demand for oral healthcare
- expand the role of healthcare professionals
- shape a responsive educational model
- mitigate the impacts of socio-economic dynamics

- foster fundamental and translational research and technology

It was noted that the only caries that does not pollute is the caries that does not occur.

The Governing Council of UNEP tasked governments to negotiate the treaty through a series of five conferences, called Intergovernmental Negotiating Committee (INC) meetings.

The important decision about global oral health should not be compartmentalized within a narrow debate about individual products, but rather be comprehensive in its scope, and include a commitment to improving health and oral health, as well as protecting the environment.

FDI supports the WHO approach to amalgam phase down.

Points to be noted are:

- Draft INC5, article 6 only mentions phase out not phase down.
- Essential words are missing in the draft document including phase down, prevention , clinical indication.
- In article 20, health aspects, the definition of populations at risk need to be changed.

Unfortunately, in many countries, amalgam phase out will be equivalent to extraction phase up.

7.2 FDI Curriculum on dental amalgam BMP, prevention and alternative materials.

Target audience: Dentists in East Africa, technicians, dental students and educators.

Aim: Provide education, training and capacity on:

1. Mercury life cycle and global health and the UNEP political mandate. Responsible: Jean-Luc Eisele.
2. BMP on dental amalgam usage and waste management. Responsible: Su Naidoo, South Africa. Pam Clark, Australia.
3. Alternative filling material materials. Responsible: Dentist from Norway Dental Material Institute.
4. Importance of prevention of dental caries.

7.3 Question and Answer Session

1. Q: Who should be trained? How many should be trained?

   A: The following suggestions were given in response to this question:

   - One (1) person per country is appointed to take over the call for preventive dentistry. It was noted that there was already an initiator in the form of the research team that conducted the research.

- This is a joint dental and environmental project therefore it would be better to work with someone in government.
- The FDI curriculum should be included in the university curriculum not just for dentists but for technicians. The response to this was that though school curriculum introduction was important, it would take too long to see results. As such, it is better to start with the project so as to learn what makes preventive dentistry work, or not work, in a short time.

2. Q: Was the mercurial life cycle important? Are there toolkits for training?

    - A: It was stressed that Mercury Hygiene Essentials is already taught to students at the University of Nairobi Dental Hospital.
    - MEMR has a clear regulation in place.
    - Training and subsequent supervision of dentists could be conducted by the National Dental Associations

3. Q: How long will the curriculum take to train? Will the curriculum apply to any other countries where FDI decides to implement it?

    A: The main reason for FDI-WHO-UNEP partnership is to raise awareness on alternative materials. Dentists who trained in amalgam use for restorations are comfortable to continue using amalgam and not learn a new technique. Phase down encourages dentists to consider alternative materials even though there is a better historical knowledge of amalgam. It was also noted that composite restorations require maintenance, which provides a challenge in countries where patients do not go in for annual dental checkups.

The next step in the FDI training is to identify venues and select dates for the educational training.

19TH DECEMBER 2012, 2nd Day

Morning Session

The session opened at 8.30 with a word of prayer.

Overview of Day 1, Dr. Lucy

Points arising:

- UNEP emphasized that phase down of dental amalgam and phase out was proposed and not yet adopted. The necessary changes would be made.
- There will be provision of an email address through Ministry of Environment and Natural Resources through which to provide input for negotiation at INC5.

1. Awareness Raising on Materials Developed by the University of Copenhagen- WHO Collaborating Centre for Oral Health, Poul Erik Petersen.

The role of WHO is:

- To coordinate the development of awareness raising materials on alternatives available for dental restoration. These are targeted at patients, dentists, health authorities and oral policy makers.
- Encourage the development and use of restoration materials alternatives to dental amalgam

National Oral Health Programmes will be addressed at the following levels:

- Community
- Professional
- Individual

The public health interventions for oral health are:

- Healthy public policies and legislation are important upstream measures
- Healthy settings
- Risk factor approaches
- Healthy lifestyles
- Universal healthcare

The cornerstones in clinical preventive oral care are:

- Effect use of fluoride: clinical application and self care.
- Diet and Nutrition
- Fissure sealing. It is expensive and therefore may not be relevant in the East Africa setting.
- Dental Plaque control
- Choice of restorative materials

Oral health care and raising awareness about materials is targeted at:

- Patients
- Dentists
- National Dental Associations/FDI
- Ministry of Health – The Chief Dental Officer.

The structure of information is:

- Brochure and flyer/poster
- Relevant background
- Key information about use of dental materials
- Environment – BMP
- Dental care in the wider oral health context

Communication Strategy:

- Give materials to-
- Ministries of Health and Environment
- National Dental Associations
- Dental Schools
- Health colleges
- Media, TV, Radio, Newspapers etc
- WebPages
- Community leaders- they serve as useful gatekeepers.

Information to patients is via brochures.

Brochures were developed and have the following areas:

- Tooth decay
- Need for treatment
- Dental materials available
- Advantages and disadvantages of each material
- The role of the dentist
- Cost sharing and health insurance

- Prevention of oral diseases
- Importance of dental visits

The Ministry of Health through the Chief Dental Officer should consider the following:

- The burden of oral disease
- Population's need for oral care
- Phasing down the need of dental amalgam
- Alternatives to dental amalgam
- The advantages and disadvantages of dental materials
- Concern for the environment
- Protection of the environment
- Best Management Practices

National Dental Associations should consider:

- Dental restoration materials
- Best Management Practices
- Advocacy
- Capacity Building
- Dissemination of information

The Dentist should be well informed on:

- Burden of dental caries
- Restoration materials and alternatives to amalgam
- Prevention of dental caries
- Outreach care

Patient brochures:

- The brochure for patients is in different colors.
- The brochure is a draft and the three countries should use them immediately and give feedback to WHO.
- It would also be ideal to get them translated into the common local dialects.

Flyer 1:

- This is the WHO Global Oral Health Programme.
- It supports establishing national oral health policies on disease prevention and oral health promotion.

Flyer 2:

Focuses on BMP on safely managing amalgam waste.

Question and Answer Session:

1. It was noted that the wording on the brochures seems to be very conclusive. An example of this is to say that “new materials are available and may be more expensive than silver fillings”. (as opposed to “new materials are available, but more expensive than silver fillings”)
2. There is a need to have different brochures targeting different classes of dental patients. For example, brochures for illiterate patients.
3. Lack of accessibility to care may hamper accessibility to brochure information. It is best for patient to get the information when sitting in the dental chair so that consideration is made by the patient and cost consideration can be discussed with the dentist.
4. For the project, key persons need to use the brochures and then give feedback, preferably through a workshop, so that the brochures are revised and relevant to each country’s culture.
5. It was suggested that a Kiswahili version of the current brochure before forwarded to WHO in the shortest time possible so that they would be printed and available for use.
6. Experience was shared on brochures that have previously been used in the community to disseminate information. After looking at patients at two levels, the one who comes to the dental clinic and the one in the community, a focus group discussion was held to establish the community’s concern. These concerns were then included in the brochure.
7. WHO wants to see the dentist get the patient to change behavior. It is not within the scope of this project to reach the community. Trying to reach the community would widen the scope of the project and make it unmanageable.
8. It was suggested that the brochures be tested in the community for a week prior to printing the WHO final draft.
9. There was concern about wording used in patients’ brochures. It should be revised to say that “silver fillings have been used successfully for 150 years”.
   The mention of new materials and yet they have been around for 50 years.
   It was also stressed that the brochures do not mention anything negative about the tooth colored materials.
10. The brochures suggested to patients that they see their dentist for the information and yet dentists felt that the reality is that there may be no time for the dentist to sit and discuss the brochure within clinic hours. The amount of time that discussing the brochure would add to the consultation time was not quantified.
11. The other reality is that most patients do not visit the dentist. The effect of the brochures on these patients was questioned.
12. Most patients are more graphic and also many are illiterate. The brochure will need pictures showing the amalgam filling, the white fillings and caries. There should be a third section on the brochure showing oral hygiene instructions. Most patients brush their teeth to prevent caries yet they do it incorrectly.
13. It was strongly agreed on that the final brochure that is sent out to patients is able to give information that will actually make a difference.

14. The brochures should be reviewed by the Ministry of health, National Dental Associations and other stakeholder so that they come up with a realistic brochure.

2. Case Studies Demonstrating Phase Down Approach, Desiree Narvaez, UNEP Chemicals. (on behalf of Michal Bender)

Brief Recap of the EADAP project:

The objective of the EADAP project is to explore essential conditions for a phase down in the use of dental amalgam.

The project has the following components:

- Trade study and survey of dental amalgam waste practices
- Selection of a national project coordinator and social preparation
- Development of awareness raising material on disease prevention and available alternatives for dental restoration
- Inception workshop
- Demonstration activities.

Country level activities will be coordinated by the national project coordinator. The demonstration activities to be conducted after the inception workshop include:

Validation of the desk study results and revision of the national mercury inventories.

- Stakeholders meeting to present the desk study and proposed demonstrations in the phase down approach.
- Selection of 3 demonstration dental clinics with representation of government facility, private clinic and a teaching hospital.
- Coordination with local waste management provider and external provider as relevant.
- Capacity building of dental health sector in BMP in amalgam waste management
- Demonstration of best practices in environmentally sound management of amalgam waste.
- Raise awareness on oral health promotion and preventive care
- Encourage the appropriate use of alternative restoration materials.

The Ministry of Environment will coordinate local waste management and will need to inform dental health practitioners on how to manage amalgam waste.

Results and Analysis of Survey Conducted in 10 countries that have demonstrated phase down of dental amalgam.

Case study by Mercury Policy Project seeks to contribute to EADAP by presenting cases from other countries demonstrating amalgam phase down approach.

Mercury Policy Project consulted with UNEP and WHO. The countries surveyed are those identified by WHO and others that have phased down amalgam use. Denmark, Switzerland, Norway and Sweden have already given responses. Surveys were also sent to Japan, Finland, Vietnam, Russia, Singapore and Mongolia.

All countries that responded used the substitution principle approach. Amalgam phase out was effected in Norway in 2008 and in Sweden in June 2009.

Denmark's approach decrees that non-amalgam restoration is the first choice. Denmark has phased down to 5% with amalgam being used in large lesions, difficult cavities and where moisture control is difficult.

Switzerland has phased down to less than 10%.

Controlling mercury releases:

- Best management practice of amalgam waste
- Use of separators with maintenance of the separators in new and existing clinics.
- Mercury controls in crematoria as they are a major mercury emitter.
- Awareness raising and regulatory programs
- Ban on import and export of mercury
- Training in the use of alternative materials in dental schools.

Precautionary principle- amalgam use was drastically reduced in the surveyed countries and actually banned in Denmark.

Elements of a phase down approach:

- Privatization
- Substitution precautionary
- Dental schools
- Eliminate subsidies on amalgam
- Raise awareness
- Consultation with stakeholders

Obstacles to phase down:

- Questions about performance of non amalgam materials
- Cost of non amalgam materials

- Objection from dentists
- Subsidy schemes for amalgam fillings

Summary:

Overall, the countries found no negative effects. Initial investment is in training and equipment. There is a net benefit in reducing mercury releases.

2.1 Question and Answer Session

1. Q: Isn't the reason that Denmark still uses amalgam the same reason to continue using amalgam in East Africa as patients present late for treatment and therefore the lesions are large.

   A: There is emphasis that the reason that caries has been reduced globally is actually not through the health sector, which is set up because of the disease, but through population directed prevention which is more important. When prevention is introduced, then the lesions seen will be smaller, thus allowing use of alternative restoration material.
2. Q: What was the response to reduction of amalgam use? What was the campaign used? What is the stand of USA on the issue of phase down?

   A: Patients were happy as they liked the tooth colored materials. Dentists were less happy. In Norway, the ban on amalgam was introduced almost overnight so the Norwegian dentist had to quickly change care and there was frustration with use of alternative materials. Dentists in Denmark were happier as the change was slower.
   Point to learn is that we must go for planned action.

   In the USA, the trend of caries follows that of developed countries. Caries levels falling have decreased the use of dental amalgam. But there is no over-treatment as the population prefers the tooth coloured fillings leading to replacing of amalgams with the alternative materials.

3. Q: Was the phase down brought about because of environmental concerns?

   A: The phase down came as a response to less demand for amalgam fillings. The concern for the environment came later.
   From the first application of composites, it was noted that there was allergic reaction to composites amongst dental personnel and this raised awareness amongst patients as well. In Norway, data is collected on all negative reactions experienced and this is because of increased awareness amongst dentists who are using only alternative materials.

3. EADAP Management: Roles and Responsibilities of Project Partners and national project coordinators, Desiree Narvaez, UNEP Chemicals.

The organizational structure of the project is horizontal as opposed to vertical. All players will be working together.

Roles and Responsibilities:

3.1 iLima

This is the expert group on the project.

Roles and responsibilities:

- Desk study to gather information on current practices on dental waste management in the three countries.
- Gather and compile information on dental materials trade flows.
- Gather information on supply and distribution of alternative materials.
- Estimate environmental costs of the use of dental amalgam.

3.2 National Project coordinators

Roles and responsibilities:

- Validate results of country dental materials trade data and waste management practices.
- Gather information about current set up in dental clinics and local recyclers
- Community preparation, identify stakeholders, invitations to meetings/workshops.
- Coordinate training of dental personnel on BMP of amalgam waste.
- Coordinate demonstration activities.
- Contact local waste management company.
- Supervision of day-to-day work at national levels.
- Prepare project implementation report.
- Disseminate awareness raising materials to the health sector.
- Organize project inception (Kenya) and results workshop (Tanzania).

3.3 IDM and FDI

Roles and responsibilities:

- IDM will provide amalgam separators to 3 countries.
- Develop protocols through illustrative diagrams on BMP of dental amalgam waste which will include guidance from WHO on ESM of healthcare waste and the Basel technical guidelines on the ESM of mercury waste.
- FDI will conduct training of health personnel on the BMP of amalgam waste.

3.4 NATIONAL DENTAL ASSOCIATIONS AND NGOs

Roles and responsibilities:

- Assist in social preparation.
- Assist in dissemination of awareness raising materials on preventive care and use of alternative materials.

3.5 WHO

Roles and responsibilities

- Coordinate the development of awareness raising materials.
- Assist in development of training materials in ESM of amalgam waste.
- Provide information on WHO and its country offices.

3.6 UNEP and WHO

These are the overall project coordinators.

Roles and responsibilities:

- Synchronize with project steering committee and national project coordinators.
- Keep all stakeholders informed.
- Ensure quality reports from national project coordinators and project partners.
- Ensure timely and quality project implementation.
- Write the final project report.

The proposed work plan with the schedule of activities for 15 months was discussed.

- The project is currently in month 5.
- Selection of dental clinics and installation of separators will be conducted in January 2013.
- Training of dental personnel will be conducted at the same time as dissemination of information materials for raising awareness.
- Results workshop will be held in August 2013 in Arusha. Tanzania suggested that September would be the preferred month for the workshop. Kenya and Uganda also prefer September.
- UNEP would like to see more participants from Uganda and Tanzania at the workshop.
- Final report will be written in month 15.

3.7 Question and Answer Session:

i. Request for a soft copy of the brochure was made. This would aid in revision of the brochure.

ii. Request to know the timelines for submission of comments on the brochure. It was agreed that the soft copy would be sent by WHO by 4th January 2013. Suggested deadline for feedback is 14th January 2013.

iii. The budget was discussed. Budgetary constraints were cited as reason for countries not having more participants at this workshop.

iv. There was a question as to when monies would be availed to avoid delays in implementation. Countries already have 75% of the total budget .The remaining 25% would be availed after the final report.

4. Action planning by country. Kenya, Tanzania, Uganda.

The general objective will be stated. Then the following would be stated:

- Specific Objective
- Expected Output
- Activity
- Time Frame
- Resource Requirement
- Responsible

4.1 Kenyan Action Plan

	SPECIFIC OBJECTIVES	EXPECTED OUTPUT	ACTIVITIES	TIME FRAME	RESOURCES REQUIREMENT US$	RESPONSIBLE PERSON/ INSTITUTION
1	To gather information on dental materials trade and waste management	Representative situation of dental restorative materials trade and waste management	Reformatting questionnaire Validation of survey Data collection analysis Report writing	2month	905	Dr Kisumbi
2	To Sensitize Stakeholders of 3 countries on phase down of dental amalgam	stakeholders sensitized	Inception workshop Editing report/ printing and circulating to all	1 week	500	Coordinators
3	To Gather information about current setup in dental clinic s and local waste management systems	Information and data is gathered	Develop Checklist Visit sample clinic Gather information from waste companies Report writing	2months	884	Coordinators Dr Irungu Kihumba
4	To create awareness among stakeholders (communities, dentists, technician, trainers, policy makers)on phase down of dental amalgam	Awareness created on phase down of dental amalgam	Identify stakeholders Hold meetings with stakeholders Hold national stakeholder workshops non phase down of Feb, March,	4 months	2205	Coordinators
5	To train oral health personnel at three sites on BMP on dental amalgam waste	Oral health and personnel trained	Receive training materials from UNEP/WHO Identify officers to be trained Approve/ratifying curriculum Conduct training	4months(by march)	1205	Prof Gathece/Coordinator
6	To train TOTs on prevention and waste management	10 TOTs trained on prevention and waste management	Receive FDI Training Assistance	(By March)	FDI to say	FDI/Coordinators
7	To train oral heath personnel on	Oral Health Personnel	Identify officers to be trained	April	1205	FDI/Coordinators

	prevention, oral diseases at the pilot sites	trained prevention and BMPC county by county	Conduct the training at the three clinics			
8	To demonstrate ESM of dental restoration waste material	ESM demonstrated in Mathare Hospital, UON Dental School and a deserving private facility	Collection, waste management best practices activities Technology transfer NEMA Certificate Installation and launch Preparatory Meetings Sessions held	May, 2013	IDM plus 2312	Coordinators
9	To develop initial guidelines and draft regulations for disposal of collected/stored dental amalgam waste	Guidelines and draft regulations developed	Drafting regulations and guidelines Meetings	May/June	964	coordinators
10	To Monitor and evaluate	Monitoring and evaluation	Supervision Coordination 10 Field Visits Reports Develop monitoring and evaluation checklist Attend	Dec2012-Septermber 2013	1910	Coordinators
11	To disseminate country report	Project outcome disseminated	Prepare project implementation report Attend Results Workshop Hold a stakeholders meeting Write Final Report	July 2013 Sept 2013 Sept 2013	0	Coordinators

- Add to number 4 comments on flier and brochure that were sent by Dr Petersen. to be done by mid January.
- Number 6 TOTs are two and will train those in number 7.
- Need to be precise on dates for separators i.e. time and cost. Separators will be sent to the WHO offices of each country to ease clearing bureaucracy. Action Pam Clark. Letters for waivers should be sent out early.

4.2 Uganda- Action Plan Dr Margaret Wandera

Specific objective	Expected output	Activity	Time frame	Resource requirement/ budget	Responsible persons
1.a. Investigate the current supply and trade of dental amalgam and make recommendations for future information systems	Report on supply and trade flow data of all the dental restorative materials and recommendations for future information	Assisting in the trade and waste survey; validation of results of country dental amalgam trade data and waste management practices	2 weeks	**1,200**	National Project Coordinators 2 research assistants)
b.assess the current waste management practices in Uganda	Report on dental waste management practices of all dental restorative materials in Uganda				
c.Current information on dental amalgam management in dental clinics	Report on dental amalgam use in dental clinics	Gathering of information about current dental amalgam management in dental clinics and local waste management systems	2 weeks	1200	National Project Coordinators 2research assistants)
2.Raised awareness of al stakeholders involved in the regulation, use and management of dental amalgam	Reports on issues raised by the stakeholders	Community preparation, identifying stakeholders, inviting to meetings/workshops, including facilitation of the meetings and preparation of the reports, arrange logistics	1day meeting	800 x3 meetings	National Project Coordinators(other people to invited 25)

d. to collect		Contacting local waste management companies	4 days	**160**	Project Coordinators
e. to train trainers	Training Report	Training of trainers	2 days	-	FDI, WHO, Project Coordinators
f. to coordinate and train clinic personnel on dental amalgam waste	Training Report	Coordination of training of dental clinic personnel on BMP of dental amalgam waste	2 days	**1,200**	Project Coordinators and ToTs
g.To coordinate demonstration waste management activities	Collected , taken amalgam capsules and treated sludge	Coordination of demonstration waste management activities: collection, take back of dental amalgam capsules, on site-storage, treatment of sludge.	2 weeks days	**800**	Project Coordinators Clinics Waste handlers
h. To Coordinate, Supervise day – to-day work of project activities	Reports	Supervision of day-to-day work at national level	11 months-project preiod	**5,890**	Project Coordinators
i. To prepare project implementation reports.	Projects implementation reports	Preparation of project implementation reports	1 week	**950**	Project Coordinators
j.To disseminate awareness materials to the health sector	Developed awareness materials distributed to the health	In coordination with Ministries of Health, dissemination of awareness raising materials to health sector (Chief Dental Officers)	2 weeks	**1,200**	Project Coordinators

4.2.1Comments:

-When we have waste management it should be to all materials not only amalgam. Should reflect in all presentations.

- suggested they should have specific persons responsible such as coordinators- there are two project coordinators the team will liaise with other parties but the two main coordinators will run activities.

- To include brochures for awareness raising.

-to realign budget for shipment of amalgam separators

4.3 Tanzania Action Plan- Prof Kahabuka

S. N.	Specific objective	Expected output	Activity	Time frame	Resource requirement	Responsible
1.	Validation of trade and waste management practice study results with respect to the 3 participating countries and revision, where necessary, of their national mercury inventories	Data and information on newly filled questionnaires	Identify participants	Jan 2013		Project coordinator
			Face to face interview	Feb 2013		
			Telephone interview	Feb 2013	1,350	Project group
2.	Stakeholders'/interagency meeting to present the desk study and proposed demonstrations in the phase down approach	Information about the project, inception workshop and final activity plan between TDA, MoH&SW, Dean, Environment, Govt Chemist, Project group	Meeting and documentation of activities among Dean, Environment, Govt Chemist, Project group	Jan, April and August 2013	940	Project group
3.	Selection of 3 demonstration dental health clinics (one representing government hospital/facility, one private clinic, one University/teaching hospital) based on criteria set by the IDM	Three clinics selected	Identify one clinic representing government hospital/facility, one private clinic, one University/teaching hospital	Jan 2013		Project group
			Clearing and transporting amalgam separators	March 2013		

S. N.	Specific objective	Expected output	Activity	Time frame	Resource requirement	Responsible
4.	Coordination with local waste management provider/company	Reach agreement with local waste management provider/company	Telephone calls Physical visit Meeting	March 2013	560	Project group
5.	Training of trainers	Three participants from the selected sites		March 2013		Ugandan colleagues
6.	Capacity building/training of the dental health sector in the environmentally sound management of dental amalgam waste using training materials developed by WHO, FDI and IDM	Knowledge on Preventive dentistry and BMP of dental amalgam waste	Trainers to train more participants from the three sites	April 2013	4,630	Project coordinator
7.	Demonstration of best practices in the environmentally sound management of dental amalgam waste: source reduction, use of dental amalgam separators, collection of waste, take back of contaminated capsules by manufacturers/recyclers, on-site storage, and, where treatment facilities exist, the treatment of contaminated sludge	Environmental sound management of dental amalgam waste	Trainee under 5 above will apply the knowledge or demonstrate what they learnt	May 2013	4,125	Project coordinator
8.	Awareness raising activities to promote	Communication with WHO	Give feedback to WHO on the	Februar y 2013	3.395	Project coordinat

S. N.	Specific objective	Expected output	Activity	Time frame	Resource requirement	Responsible
	preventive dental care and encourage a switch to alternative materials for dental restoration amongst patients and dentists. This activity could be conducted and/or supported by local NGOs	about input on brochure and fliers	brochure and fliers			or
		Printing of brochure and fliers	Print the brochure and fliers	April 2013		
		Distribution of brochure and fliers	Distribute brochure	May 2013		
8.	Results workshop	Available data on the project	Workshop to discuss results of the project by the three demonstration countries	September 2013	8,500	Project coordinator

4.3.1Comments made on the Action Plans:

Concerns on budget differences for the three countries-same amounts were allocated to the three countries.

FDI- training time plan- Jean-Luc Eisele

- Feb 2013- to finalize curriculum and educational material onBMP ,waste management, alternative materials and preventive dentistry with WHO,UNEP and IDM.
- Early march-TOT workshop, 2days Uganda.FDI to invite 2national educators from each country and 3-4 international experts.
- March 2013-national educators to organize the local training workshop for the dentists/staff in the 3sites.
- 2013- Option to organize further national training using the material prepared/adapted for the pilot and create a wider awareness.

Comments-request to include a technician in the team to be trained-subject to availability of funds

Each country to send final work plans by 1st week of April to Desiree.

5. Closing session

On the closing ceremony the following made closing remarks

a) Desiree Narvaez

Conveyed very sincere thanks to the government of Kenya through the Ministry of Environment for a successful workshop. Knowing, storming, norming and performing process accomplished in the workshop. Thanks to WHO FDI, IDMand all the participants and looking forward to results in 2013.

b) D r Poul Erik Petersen

Meeting bridged concern for health and environment. There was good emphasis on global challenges through the three countries. These were very fruitful discussions for WHO. Look forward to feedback and what is expected from WHO.WHO is happy working with UNEP in important area of health and environment.

Thanks to local organizers for a successful workshop.

c) Dr Irungu

It has been a successful 2 day workshop. Thanks to all delegates and especially the international delegates.

Appealed to all participants to work together and finish the project together.

d) Mr Richard Mwendadu, Director Bilateral Agreements

Appreciated to support of UNEP and WHO on the support and assured them of the complete commitment of the Ministry on the project

e) Vote of thanks by Dr Gathece

Conveyed sincere gratitude to:

- UNEP, FDI, IDM , WHO
- Local organizers
- Regional participants
- ILIMA
- Working team
- Ministries of Health and medical services
- Technicians and COHOs
- Ministry of Environment

All presenters

Meeting closed at 5.15pm with a word of prayer from Mercy Kimani.

ANNEX 1

List of participants

No.	Name of Participant	Institution	Email Address	Telephone No.
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49	Mang'u K. Karen	MEMR	Karenkm82@yahoo.com	0711 552398

TIME TABLE

Time	Item	Content of Presentation	Responsible
Day 1 (18 December)			
9.00-9.30	Welcome and Opening Introduction of Participants		**Kenya MEMR,** **UNEP Chemicals,** **UNEP ROA, WHO**
9.30-10.15	Project overview	Mercury negotiations and partnerships. Project objectives, components, expected output.	**Desiree Narvaez, UNEP Chemicals**
10.15-11.00	WHO Oral Health Programme	WHO policies on oral health and dental restoration	**Poul Erik Petersen, WHO Oral Health Programme**
11.00-11.30	Break		
11.30-13.00 **13.00-14.00**	Dental amalgam and its alternatives trade and waste management practices survey Lunch	Results, analysis, conclusions of survey regarding a)trade b)waste management of dental amalgam and its alternatives	**Cecilia Nganga,** **Bernina Kisumbi** **iLima, NGO**
14.00-15.30	Selection of pilot dental facilities	Criteria for selection of dental facilities, provision of amalgam separators, logistical requirements	**Pam Clark, International Association of Dental Manufacturers**
15.30-16.00	Break		
16.00-17.30	Training of dental personnel)	Training of dental personnel on the best management practices (BMP) / environmentally sound management (ESM) of waste (amalgam and its alternatives)	**Jean-Luc Julian Fisher, World Dental Federation**
17.30	**Closure of day 1**		

Time	Item	Content of Presentation	Responsible
Day 2 (19 December)			
9.00-9.30	Recap of day 1		**Kenya MEMR**
9.30-10.15	Awareness raising on the alternatives and BMP of dental amalgam waste and its alternatives	Awareness raising materials developed by the University of Copenhagen- WHO Collaborating Centre for Oral Health	**Poul Erik Petersen, WHO Oral Health Programme**
10.15-11.00	Case studies demonstrating phase down approach	Results and analysis of survey conducted in 10 countries that have demonstrated phase down of dental amalgam	**Michael Bender ,Mercury Policy Project OR Desiree Narvaez, UNEP Chemicals**
11.00-11.30	Break		
11.30-13.00 **13.00-14.00**	Role clarification of national project coordinator ; Action planning by country Lunch		**Desiree Narvaez, UNEP Chemicals;**
14.00-15.30	Continuation of workshop by country	Action planning for actual project implementation	**National project coordinators; All 3 countries**
15.30-16.00	Break		
16.00-17.30	Presentation of workplans by country	Presentations and comments from participants	**All**
17.30	**Closure of the meeting**		**Kenya MEMR,** **UNEP Chemicals,** **UNEP ROA, WHO**