ORAL HEALTH PROGRAMMES AND DENTAL AMALGAM USE IN JAMAICA

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CORE PRINCIPLES AND SERVICES

- Access
- Equity
- Quality

- Examination
- Basic Periodontal Screening
- Dental Prophylaxis
- Fluoride varnish/topical Fluoride
- Periodontal Scaling
- Dental Restorations – Nano-composites, Temps etc
- Exodontia
- Dental Emergencies

EPIDEMIOLOGICAL PROFILE

- DMFT 5-6 y.o = 1.0
- DMFT 12-13 y.o =1.08
- Caries Prevalence =40%
- SCI = 2.2
- CPI =35-44 =
- Oral Cancer survival rates < 2 years
- Case fatality rates =90%

- **Fungal, bacterial or viral infections in HIV**
- Almost half (40–50%) of people who are HIV-positive have oral fungal, bacterial or viral infections. These often occur early in the course of HIV infection.

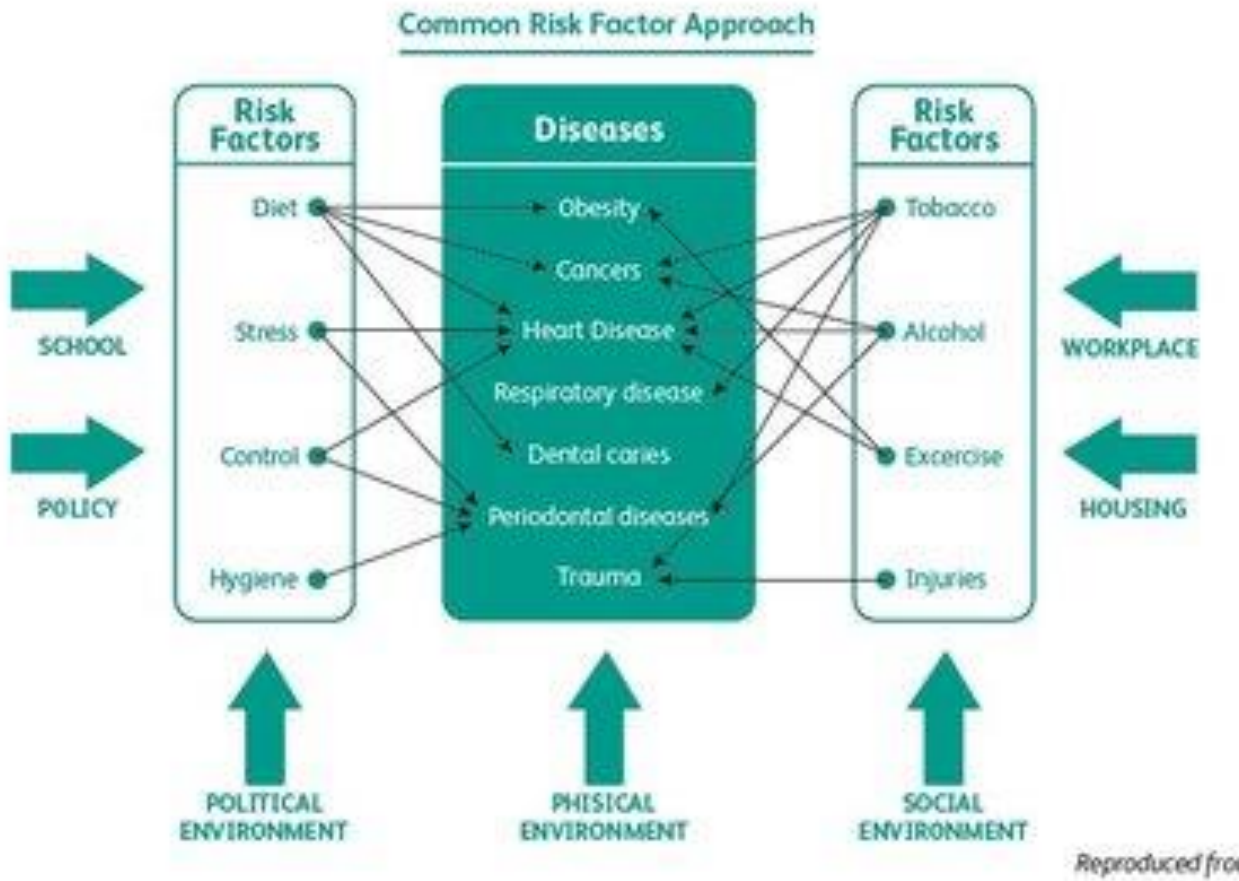
ORAL EPIDEMIOLOGICAL PROFILE

- **Oro-dental trauma**
- 16-40% of children in the age range 6 to12 years old are affected by dental trauma due to unsafe playgrounds, unsafe schools, road accidents, or violence
- 40 -60% of MVA results in head & neck injuries.
- Significant increases in Oro-dental trauma are noted in contact sports like Foot ball, Basket ball, Karate and Taekwondo (50-60%)

RISK FACTORS FOR ORAL DISEASES

- An unhealthy diet, tobacco use and harmful alcohol use. These are also risk factors for the four leading chronic diseases – cardiovascular diseases, cancer, chronic respiratory diseases and diabetes
- Poor oral hygiene is also a risk factor for oral disease.
- Social determinants in oral health are also very strong cause for .
- The oral disease burden is significantly higher among poor and disadvantaged population groups

COMMON RISK FACTOR APPROACH



FRAMEWORK

Services:

1) Operative dentistry
2) Oral Surgery
3) Paedodontics
4) Endodontics
5) Orthodontics
6) Prosthodontics
7) Periodontics

- Comprehensive care facilities (Referral Centers)

- 3-4 Dental Operatories/Unit
- Radiology –Intraoral & Panoramic
- Dental Surgical Instruments
- Autoclave & Statim Sterilizer
- Ultrasonic Cleaners
- Ultrasonic /Piezo Scalers
- Central suction Unit
- Diode Laser
- Light Cure Unit
- Handpieces -Fast & Slow
- Instrument washers
- Supplies and Sundries
- Small laboratory

- Infrastructure

STANDARD FACILITIES

Basic Services:

- Examination
- Basic Periodontal Screening
- Dental Prophylaxis –w/o Fluoride varnish/topical Fluoride
- Periodontal /Gross Scaling
- Dental Restorations –Nano-composites, Temps etc
- Exodontia
- Dental Emergencies

Infrastructure

- 1-2 Dental Operatories/Unit
- Radiology –intraoral
- Central suction
- Compressor
- Light Cure Unit
- Dental Instruments/surgical etc
- Supplies & Sundries
- Autoclave-Dedicated Unit
- Ultrasonic Cleaner
- Handpieces-Fast & Slow
- Ultrasonic & Piezo Scalers
- Intraoral camera

DENTAL INFRASTRUCTURE

ORAL HEALTH PROGRAMMES

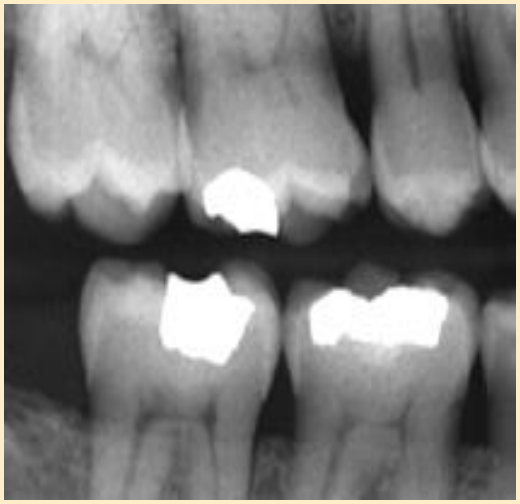
- Preventive inclusive of the "Caries free community initiative".
- Curative
- Diagnostic
- Rehabilitative
- Oral Health Education and Health Promotion
- Referral
- Integrated Disease Prevention module

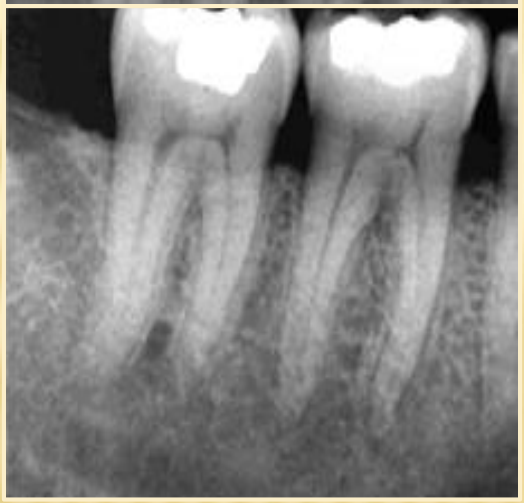
ORAL HEALTH PROGRAMMES

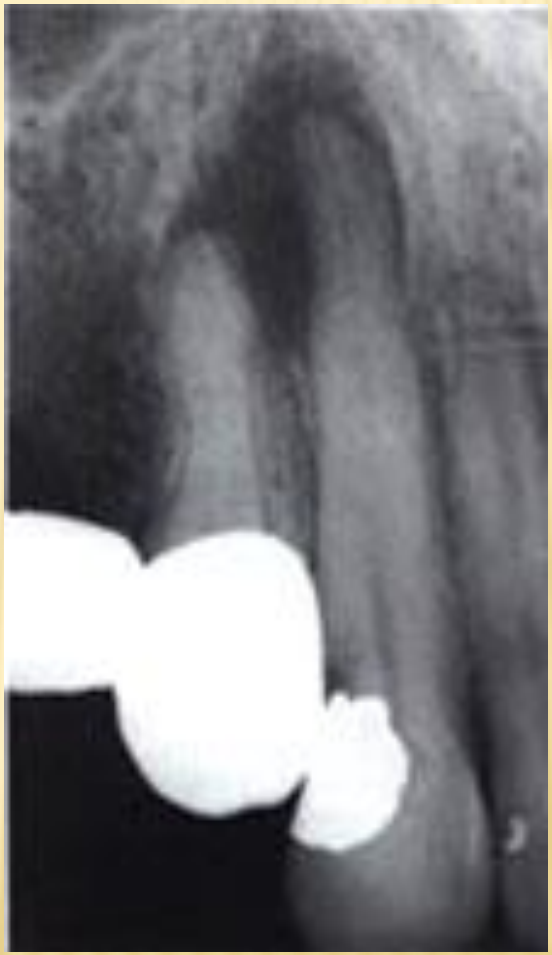
- Oral Public Health
- - Preventive
- a) Prophylaxis
- b) Sealant
- c) Fluoride Varnish
- d) other forms of topical Fluoride
- - Oral Cancer Screening Programme
- -Oral Disease Surveillance Programme

CURATIVE PROGRAMME

- Examination & Charting
- Basic Periodontal Charting
- Restorations
- a) Amalgams
- b) Composites
- c) Sedative Dressing
- Anaethetic & Pain Management
- Exodontias







Properties of Mercury

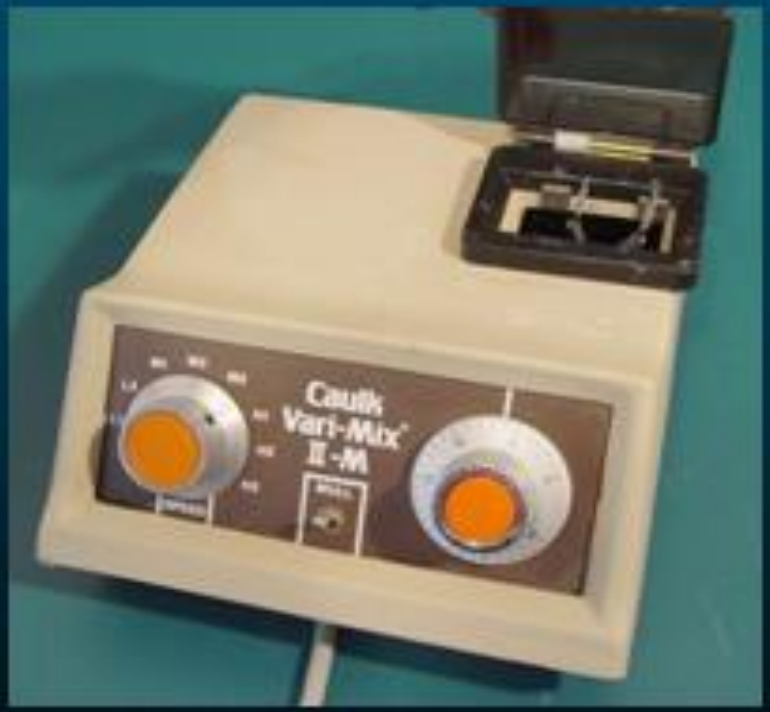
- Only liquid metal at room temperature
- Evaporation rate
  - Theoretical maximum is 57.9 $\mu g \cdot cm^2 \cdot s^{-1}$ from pristine, oxide-free surface into a vacuum (= 57,900 $ng \cdot cm^2 \cdot s^{-1}$)
  - Measured rate in vacuum is ~40 $\mu g \cdot cm^2 \cdot s^{-1}$ (= ~40,000 $ng \cdot cm^2 \cdot s^{-1}$)
  - Oxidation of Hg lowers rate by factor of 1000

Amalgam Capsules

- Contain (in separate compartments):
  - powdered amalgam alloy
  - liquid mercury
- Some are manually activated, others self-activated
- Pestle usually included

Amalgamator (Triturator)

- Speeds vary upward from 3000 rpm
- Times vary from 5–20 seconds
- Mix powder and liquid components to achieve a pliable mass
- Reaction begins after components are mixed



CURATIVE PROGRAMME

- Periodontal Scaling
- Periodontal Surgery
- Incision and Drainage
- Prosthodontics
- a) Dentures
- b) Crown and Bridge
- Endodontics
- Orthodontics

CLINICAL USE OF DENTAL AMALGAM

- 1.1 It is prudent to avoid the placement or removal of dental amalgam restorations during pregnancy, especially during the first trimester when the mother is breastfeeding, and its use in those patients with kidney disease.
- 1.2 Amalgam is a material suitable for larger restorations of posterior permanent teeth in children, young adults and adults.
- 1.3 Directly-placed tooth coloured restorative materials in permanent posterior teeth should be restricted to one surface restorations and small and medium sized two and
- three-surface restorations when adequate isolation can be achieved.

CLINICAL USE OF DENTAL AMALGAM

- 1.4 No conclusive, scientific validated evidence currently exists to justify the removal of dental amalgam restorations to relieve certain systemic symptoms, or treat particular medical conditions (other than proven allergy).
- 1.5 Only pre-capsulated amalgam is to be used.

CURRENT SALES & DISTRIBUTION

- Major suppliers – Optimum Trading Ltd
- - Cornwall Medical & Dental

- Major Consumer – Ministry of Health
- - 50% reduction in use of DA

- Usage: Mainly in Rural Communities

WASTE MANAGEMENT OF DENTAL AMALGAM

- 2.1 ‘Recommendations in handling Dental Amalgam should be followed to reduce occupational and patient exposure to mercury in dental practices from amalgam waste.
- 2.2 All public dental clinics in shall be equipped with specialist systems to trap waste amalgam to control the distribution into the general environment.
- 2.3 All reasonable measures should be taken to minimize the discharge of mercury into the environment

WASTE DISPOSAL OF AMALGAM

- 2.4 Amalgam and amalgam-filled extracted teeth must not be incinerated and should be recycled wherever possible
- 2.5 Waste amalgam should be stored in an air tight plastic container labeled “Amalgam for Recycling”1
- 2.6 It is recommended that mercury waste be returned to metal or precious metal recyclers for reclamation. If necessary the Environment Protection Authority should be contacted for specific requirements for disposal of mercury.

DENTAL INFRASTRUCTURE