Oral Health in Armenia
Part 1 – Overview

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Schools of Dentistry and Public Health
Factors Influencing Dentistry

- Disease levels
- Science and Technology
- Population Demography
- Societal Beliefs
- Delivery Systems
Historical Perspectives

Dentistry not viewed as a health profession

Relationship between dental health and physical health was not understood

Few people (or dentists) understood the importance of preventative dental care

Dentists extracted teeth and produced dentures to improve cosmetic appearance
Earliest dental bridges, dating to 500 B.C. have been identified among the Etruscans, Romans, and Phoenicians.
Commonly held belief that toothache and decay were caused by a toothworm that infected roots and ate away tooth material.
Impact of Changes in Dentistry

- Demand
- Content
- Mix of Services
- Environment of Practice
NEED

POTENTIAL
DEMAND

EFFECTIVE
DEMAND
Determinants of Demand

Knowledge
Attitudes
Past Dental Experience
Availability of Service
What do we know about Armenia?

• Oral Health Data for Armenia is quite limited and not comprehensive for the country as a whole.

• Several small studies done focusing on specific areas using convenience samples.
Ministry of Health 2008

- Registered Dentists 1755
- 1110 Active Practice  645 Government
- 350 Graduates/year  5 Dental Schools
- 5 years of study plus 1 year internship
- Licensure and CE are required
- No data on population dental visits
- No financial data on costs or expenditures
- No data on practice location or distribution

Ter-Poghosyan YSU, Ministry of Health 2008
Sisian 12 year olds 2005

- 126 children
- 86% caries prevalence
- DMFT 2.84 (1.95)
- 79% need oral hygiene instruction
- Schools and dental clinics not focusing on oral health

- Tadevosyan DDS, MPH AUA
Preventive Measures Tavoush 2012

- Five years post preventive program
- 334 urban and rural 6, 12 and 15 yrs.
- DMF was 96.8% for 6 yr old
- 96% for 12 yr old
- 90.8% for 15 yr old
- Periodontal problems such as bleeding and calculus ranged from 11.1 to 69.8%
- Only 27% of children had healthy gums

Manrikyan, Yerevan State Medical University
Armenian Children?
NO!
NO!
Armenian Schoolchildren
Armenian Children-Yes!
Voskehask (Gumryi) 2010
Klatchoian, et al AUA
Caries Destruction of Primary and Permanent Dentition
Caries Prevalence in 338 Children in Selected Areas of Karabaugh 2014

Primary/Baby teeth 70.7%
Permanente teeth 72.8%
Both (baby&permanent) 95.6%

Source- Hand in Hand Survey 2014
<table>
<thead>
<tr>
<th>Age</th>
<th>Percent (%)</th>
</tr>
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<tbody>
<tr>
<td>5</td>
<td>75.0</td>
</tr>
<tr>
<td>6</td>
<td>100.0</td>
</tr>
<tr>
<td>7</td>
<td>97.8</td>
</tr>
<tr>
<td>8</td>
<td>100.0</td>
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</tbody>
</table>
Dental Treatment Needs of Children

- Fillings: 95.0%
- Urgent care-pain and/or infection: 12.9%
Oral Hygiene Instructions

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>No</td>
<td>15.5%</td>
</tr>
<tr>
<td>Yes, needed</td>
<td>84.2%</td>
</tr>
<tr>
<td>Excluded</td>
<td>0.3%</td>
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</table>
Summary

• Serious gum problems are rare in children
• However, signs of gum diseases in the form of bleeding gums was present in 25% of children
• 90% of children not brushing their teeth properly and need instruction.
• More than one half (52.5%) of children need their teeth cleaned
Summary and Conclusions

- More than 95% of children have caries
- Each child has more than 6 caries (on average)
- Dental care minimal - only 0.73 of baby teeth treated
- 0.29 permanent teeth have fillings
- 95% of children need fillings
- 13% need urgent care for pain and/or infection
Dental Caries in Armenia

- Epidemic Levels
- High Levels in Children
- High Levels in Adults
- Limited Preventive Methods
Dental Caries in USA

- Marked Decline in Children
- Decline in Adults
- Indication of new increase
Periodontal Disease in Armenia

High Prevalence of Gingivitis and Periodontitis

• No official data for prevalence of periodontitis in Armenia. One study reported increasing periodontal tissue lesions in Tavush region. A significant number of diagnosed cases of periodontal pockets with the depth of 4-5mm among teenagers. (Manrikian Me. et al., 2012)

• According to the World Health Organization (WHO) diabetes is a growing public health concern in Armenia. Moreover, according to the International Diabetes Federation (IDF) estimates, the diabetes morbidity rate is projected to increase by 0.9% annually in Armenia from 2010 to 2030.
Periodontal Disease
## Oral Condition Self-report Scale Validation Study (n=60/184)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Periodontitis</th>
<th>Without</th>
<th>p-value*</th>
<th>Total %, mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male,%</td>
<td>67.9</td>
<td>56.3</td>
<td>.430</td>
<td>61.3</td>
</tr>
<tr>
<td>Female,%</td>
<td>32.1</td>
<td>43.8</td>
<td></td>
<td>38.3</td>
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<tr>
<td>Age, mean(SD)</td>
<td>32.1</td>
<td>41.4</td>
<td></td>
<td>46.0</td>
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<tr>
<td>Number of natural teeth:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>– Less than 10%</td>
<td>32.1</td>
<td>28.1</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>– From 10 to 20%</td>
<td>28.6</td>
<td>9.4</td>
<td></td>
<td>18.3</td>
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<tr>
<td>– More than 20%</td>
<td>39.3</td>
<td>62.5</td>
<td></td>
<td>51.7</td>
</tr>
<tr>
<td>Diabetic status, %</td>
<td>71.4</td>
<td>28.1</td>
<td>.002</td>
<td>48.3</td>
</tr>
</tbody>
</table>

* Exact sig. (2-sided)    Khachatryan, M. 2015 AUA, SPH, MPH Project
Conclusion and Recommendations

- Oral hygiene and periodontitis status was studied in 184 Yerevan patients with Type 2 Diabetes Mellitus.

- Independent dose-response relation between frequency of cleaning teeth and oral health was established.

- Cleaning teeth at least twice a day is a critical preventive measure against periodontitis and effective in patients with high risk diabetes mellitus.
Recommendations continued:

- Prevention and timely treatment of other chronic health conditions is recommended to prevent developing periodontitis.

- This validation study for the self-assessment tool conducted in Armenia demonstrated it could be used to screen and gather prevalence data for periodontitis status.
Armenia’s Oral Health Dilemma

• Armenia has a high rate of untreated caries and periodontal disease and lacks adequate access to care particularly in rural areas where manpower and resources are unavailable.

• What can be done and what should be prioritized given the limited funds, lack of facilities and manpower?