

Preventing Dental Caries for Hong Kong Kindergarten Children

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Knowledge Exchange Lunch Seminar

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Faculty of Dentistry

The University of Hong Kong

Tomorrow's Dentistry.....Today

Preventing Dental Decay for Kindergarten Children



Hong Kong is a metropolitan city with water fluoridation

Preventing Dental Decay for Kindergarten Children

School Dental Care Service SDCS



not covering preschool children

Oral Health Education Unit

Aims at promoting oral health to the public through educational and promotional activities.

- Organising oral health education activities.
- Supplying or lending oral health education resources to the public. The resources include posters, leaflets, booklets, exhibits, slides, videos, and games etc.
- 24-hour Oral Health Education Hotline service.
- "Brighter Smile Playland" visitation programmes.
- Maintaining homepage. [Tooth Club](#)



Early Childhood Caries (ECC)



- ❖ 51% of 5-year-old children suffered from ECC
- ❖ over 90% found ECC were left untreated

Department of Health, 2002

Early Childhood Caries (ECC)



Poor dentition significantly affects children's nutrition, the growth and development and general health

Early Childhood Caries (ECC)



ECC causes pain and infection

Advanced dental caries will progress into the tooth pulp and form dental abscess

Early Childhood Caries (ECC)



6% of preschoolers suffered from dental abscess associated with extensive decay

Early Childhood Caries (ECC)

washingtonpost.com > Metro > Maryland



The Breaking News Blog

All the latest news from the District, Maryland and Virginia

For Want of a Dentist

By Mary Otto

Washington Post Staff Writer

Wednesday, February 28, 2007

Twelve-year-old Deamonte Driver died of a toothache Sunday.

A routine, \$80 tooth extraction might have saved him.

If his mother had been insured.

If his family had not lost its Medicaid.



Deamonte Driver, sitting next to his mother, Alyce, shows the scars from incisions for his brain surgery. (By Linda Davidson — The Washington Post)

Dental care service utilization



Utilization of dental care service of preschoolers was low, 72% of them had never visited a dentist

Department of Health, 2002

Oral Health Awareness

Table 2 Dental caries experience of preschool children according to their household income, parents' education level, dental knowledge and attitudes

Independent variables	Group	N (%)	Mean dmft (SD)	Significance
Monthly household income (\$HK)	< 10,000	108 (18%)	2.7 (3.7)	$P < 0.001$
	10,000–15,000	126 (21%)	1.7 (3.0)	
	15,001–20,000	75 (12%)	1.7 (2.5)	
	20,001–25,000	56 (9%)	1.2 (2.9)	
	> 25,000	248 (40%)	0.9 (2.1)	
Father's education level	Primary or below	87 (15%)	2.1 (3.1)	$P < 0.005$
	Secondary	332 (57%)	1.6 (2.8)	
	Post-secondary	166 (28%)	1.0 (2.4)	
Mother's education level	Primary or below	110 (19%)	2.1 (3.0)	$P < 0.005$
	Secondary	366 (63%)	1.4 (2.8)	
	Post-secondary	107 (18%)	0.8 (2.0)	
Parents' dental knowledge	Poor	181 (27%)	2.2 (3.5)	$P < 0.005$
	Moderate	290 (44%)	1.5 (2.8)	
	Good	187 (29%)	1.0 (2.1)	
Response to child's toothache	Visit a dentist	543 (86%)	1.3 (2.5)	$P < 0.005$
	Give pain-killer	22 (3%)	2.6 (3.3)	
	Give herbal medicine	36 (6%)	2.7 (2.8)	
	Others	29 (5%)	2.3 (4.7)	

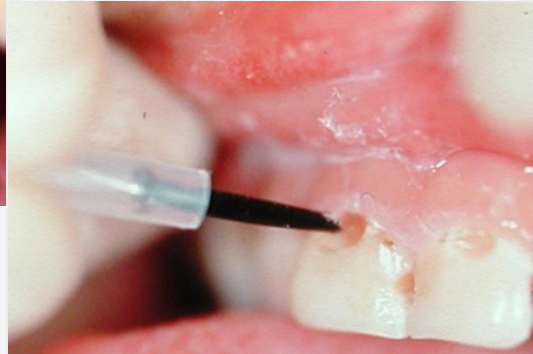
Oral health education (OHE)

Epidemiological study:

Poor dental knowledge & awareness amongst
HK preschoolers with ECC

Kindergarten teachers can be trained to provide
oral health education to them

Silver diamine fluoride application



Simple, Scalable, Sustainable Care

Young or difficult to manage kid

Those cannot afford conventional dental care

Silver diamine fluoride application



Hardened or Slow down ECC

No significant complication

Receive care from SDCS in future

Silver diamine fluoride application

**Effectiveness of silver diamine fluoride and
sodium fluoride varnish in arresting dentine caries**

submitted by Chu Chun Hung

for the degree of Doctor of Philosophy
at the University of Hong Kong
in May 2003

Objectives

- ❖ To work with a NGO to set up a dental service for prevention and control of ECC among preschool children.
- ❖ To transfer knowledge and skills to the NGO so that it can sustain the dental service.

Outreach dental service for kindergarten children

- ❖ Received support from a seed funding scheme of Health Care & Promotion Fund in 2008
- ❖ Launched in 2009
- ❖ Served a total of 19 kindergartens



食物及衛生局
Food and Health Bureau

Methods

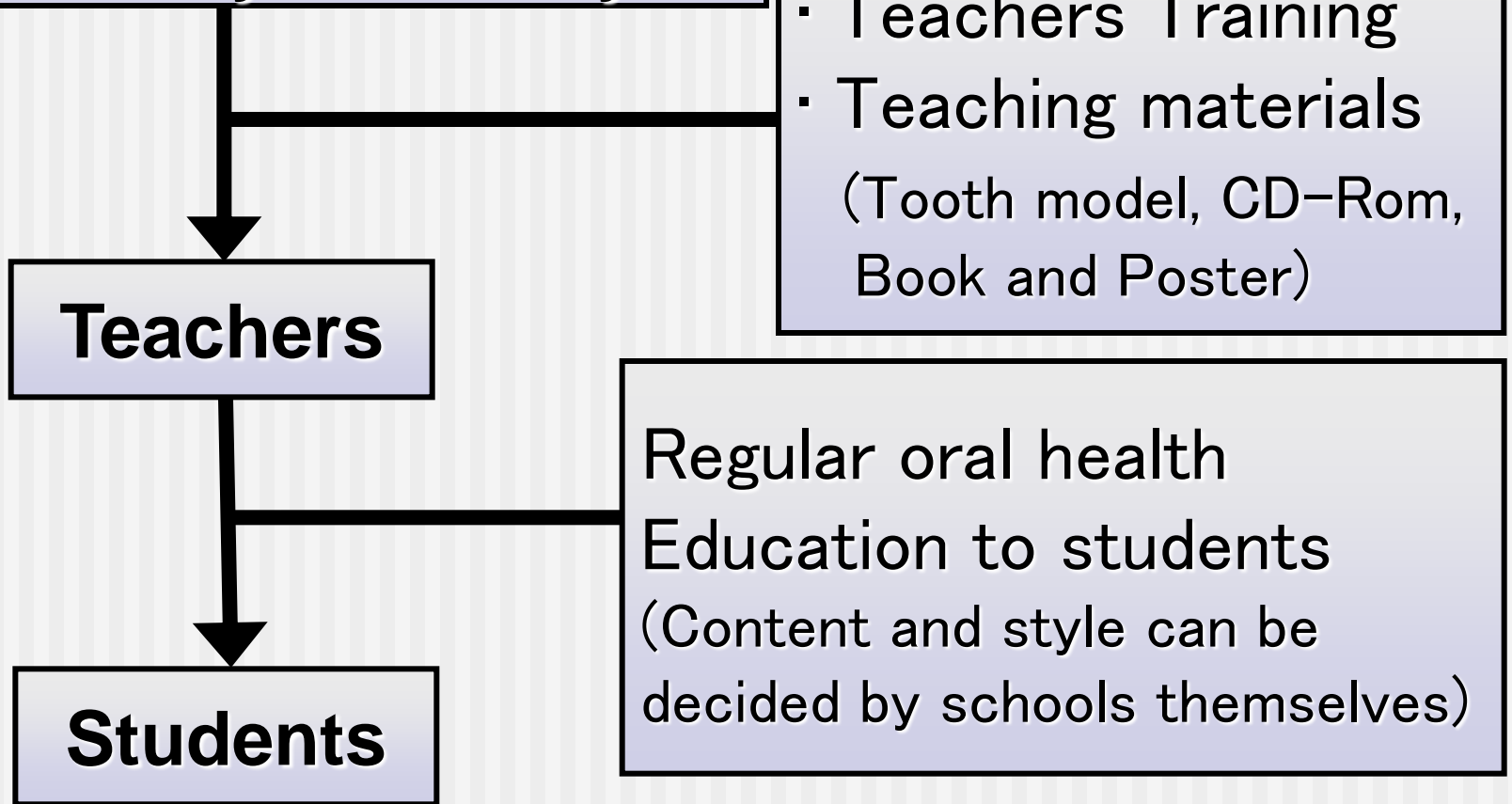
**The University of Hong Kong –
The Faculty of Dentistry**

- Teachers Training
- Teaching materials
(Tooth model, CD-Rom,
Book and Poster)

Teachers

Regular oral health
Education to students
(Content and style can be
decided by schools themselves)

Students



Pathway

**HKU's
Dental
Faculty**

Kindergarten teachers
(Provided with training,
directions and teaching
materials)

Kindergarten K3 students
(Educated depending on the needs of
individual kindergartens)

Expansion of service

- ❖ Post-service evaluation showed positive response amongst kindergartens
- ❖ S K Yee Medical Fund granted >\$1,000,000 to serve more children in need in future



Hong Kong Christian Service (HKCS)

- ❖ A non-profit-making organisation serving the community
- ❖ We shared experiences to HKCS and expected them to sustain the service in future



Other NGOs partnerships

- Tung Wah Group of Hospitals (TWGH)
- The Baptist Convention Hong Kong (BCHK)
- The Lutheran Church Hong Kong (LCHK)
- Hong Kong Ling Liang Church (HKLLC)
- Po Leung Kuk (PLK)
- Hong Kong Federation of Youth Groups (HKFYG)

100 selected kindergartens

- Outreach dental services provided to children
- Oral health seminars provided to teachers



Support from industry

Dental models,
Posters,
Teacher manual
Video CD,
Stickers,
Leaflets



Faculty of Dentistry
The University of Hong Kong

<http://facdent.hku.hk>

Oral Health Education Workshop

Equip teachers with knowledge and skills in ECC prevention

More than 1,000 teachers directly or indirectly benefited

Also provided teaching aids to help trained teachers indirectly deliver oral health message and knowledge of ECC prevention to preschool children

Profile of survey respondents

Respondent position	No. of respondents
Principal	27 (34%)
Vice-principal / Panel	46 (57%)
Teacher	7 (9%)
Total	80 (100%)

Advancement of Knowledge

Knowledge Advancement	No. of pre-schools
Absolutely no	0
Just a little	0
Some	1 (1%)
Quite a lot	36 (45%)
Very much	43 (54%)
Total	80 (100%)

Raised awareness

Raised awareness	No. of pre-schools
Absolutely no	0
Just a little	0
Some	1 (1%)
Quite a lot	28 (35%)
Very much	51 (64%)
Total	80 (100%)

Examination

- ❖ Children with parental consent were clinically examined by dentist in kindergarten
- ❖ A written report was given to the parent



Treatment

- Children with ECC might be
 - treated with SDF solution by dentist; or
 - advised to visit a dentist for treatment at HKCS clinic



Summary 2011 - 2012

- ❖ 100 kindergartens has been served
- ❖ 12,428 kindergarten children received oral health education
- ❖ 11,816 children were examined
- ❖ 5,131 (43%) of them was suffering from ECC
- ❖ 4,446 (87%) accepted SDF treatment

Item	N1	K1	K2	K3	Total
Number of children participated in the service	212	2,784	4,144	5,288	12,428
Number of children accepted SDF if needed	195	2,431	3,622	4,526	10,774
% of children accepted SDF if needed	92%	87%	87%	86%	87%
Number of children examined	158	2,559	3,978	5,121	11,816
Number of children with untreated decay	19	1,020	1,657	2,435	5,131
Number of children received SDF treatment	15	863	1,417	2,151	4,446
% children received SDF treatment	79%	85%	86%	88%	87%
Number of untreated decayed teeth	47	4,735	7,754	11,317	23,853
Number of decayed teeth treated with SDF	38	4,131	6,786	10,105	21,060
% of decayed teeth treated with SDF	81%	87%	88%	89%	88%

Conclusions

- ❖ Trained and set up an outreach team to serve the community
- ❖ Partnered with NGOs and industry to successfully implement dental outreach service for kindergarten children as planned
- ❖ Targeted successfully to children in need
- ❖ Won the Faculty's Knowledge Exchange Award
- ❖ Received another \$1.25 Million donation to HKU to continue the service

FDI World Congress 2012



Thank you!

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