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November 26, 2021

Michael MacAulay
Manager of Allied Health, Interior Health
3306A 32nd Ave
Vernon, BC V1T 5M8

Dear Mr. MacAulay,

Attached is my report, Expanding the “Lift the Lip” Fluoride Varnish Program. This report examines the need for increased dental resources within the community, especially fluoride varnish programs for infants and toddlers.

The purpose of this report is to investigate the need for these programs at Interior Health and identify possible solutions. Important data such as primary and secondary research was analyzed and interpreted in order to produce recommendations that can be implemented.

Thank you for taking the time to read this report. I hope you find this report helpful and informative. Please do not hesitate to contact me at helenet@student.ubc.ca with any questions.

Sincerely,

Helene Tran

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Expanding the ‘Lift the Lip’ Fluoride Varnish Program at

for
Michael MacAulay
Manager of Allied Health, Interior Health
Kelowna Community Health Services Centre, Kelowna BC

by
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Introduction

Background Information

‘Lift the Lip’ is a fluoride varnish program offered by Interior Health. It is a free program that is available for children 12-47 months of age and provides preventative education and fluoride varnish applications for children that meet the eligibility requirements. Currently, children are referred to the program through public health nurses, dental offices, and self-referrals.

Fluoride is commonly used in dentistry to prevent cavities by strengthening enamel, which is the outer layer of the teeth (Health Canada). When bacteria in the mouth break down sugar and carbohydrates, they produce acids that remove minerals in the tooth enamel. This loss of minerals is called demineralization. Weakened tooth enamel leaves teeth vulnerable to bacteria that can cause cavities (Azarpazhooh, A. et al). Therefore, fluoride helps to re-mineralize tooth enamel, which can prevent cavities and reverse early signs of tooth decay (Weintraub, J. A. et al). As a result, fluoride varnish applications can help to prevent early childhood caries (cavities).

Early childhood caries (ECC) is a complex and multifactorial chronic disease that is influenced by diet, bacteria, and social determinants of health (Mishra, P. et al). The disease is infectious, transmissible, diet-dependent, and may progress rapidly. It has a lasting detrimental impact on both baby and adult teeth. In fact, ECC is the most common childhood disease and dental surgery for ECC under general anesthesia is the most common day surgery procedure at

most pediatric hospitals in Canada (Azarpazhooh, A. et al). Some of the potential consequences of ECC are acute and chronic pain; interference with the child's eating and sleeping; tooth loss and misaligned teeth; increased expenses for dental care throughout life; and compromise of general health. The prevalence of ECC in Canadian preschool children is a growing concern.

Purpose of Report

The purpose of this report is to propose the solution of expanding the 'Lift the Lip' fluoride varnish program to include daycares and preschools. 'Lift the Lip' is currently available to children 12-47 months of age; however, the referral sources are limited. By offering the program to more locations and facilities, the program will be able to garner increased attention and hopefully, this will entice families to participate. More parents will have access to oral health information and more children will have the opportunity to have fluoride varnish applied, which will ultimately lower the overall risk of ECC.

Methods

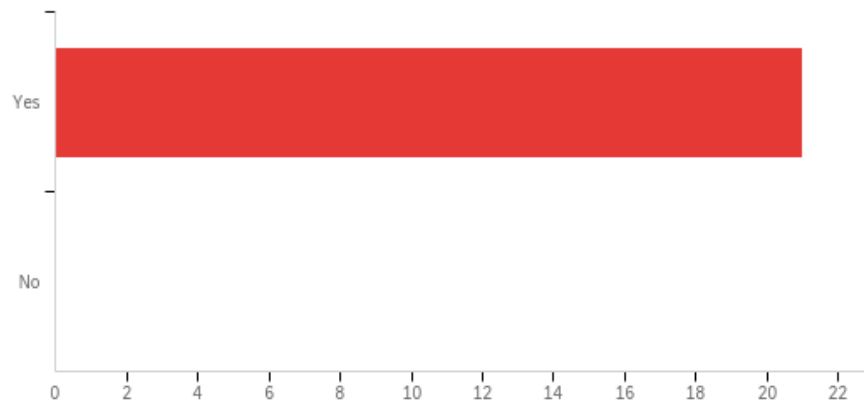
One of the methods utilized was the distribution of surveys to parents of children attending daycare and preschool in order to gauge the interest in expanding the fluoride varnish program. Additionally, interviews from dental program staff at Interior Health also serviced as a source of data. Secondary research comprised of studies comparing fluoride efficacy in reducing ECC and reference to publications regarding the effectiveness of fluoride varnish programs.

Data Section

A survey regarding the relevancy of the 'Lift the Lip' fluoride varnish program and the need for its expansion was conducted at a daycare and preschool. According to the survey distributed (Appendix A), Fig.1 indicates that all of the respondents had children that were attending daycare or preschool.

Fig. 1

Q1 - Do you have a child currently in daycare or preschool?

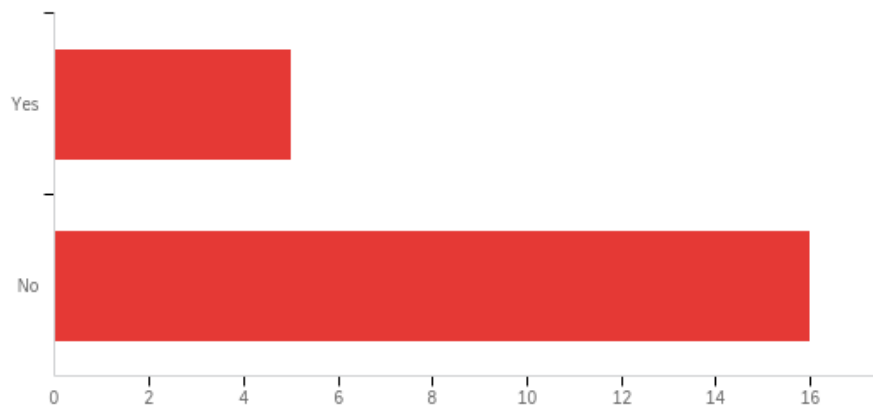


#	Answer	%	Count
4	Yes	100.00%	21
5	No	0.00%	0
	Total	100%	21

According to Fig. 2, the majority of the survey respondents (76.19%) did not have a family dentist.

Fig. 2

Q2 - Do you have a family dentist?

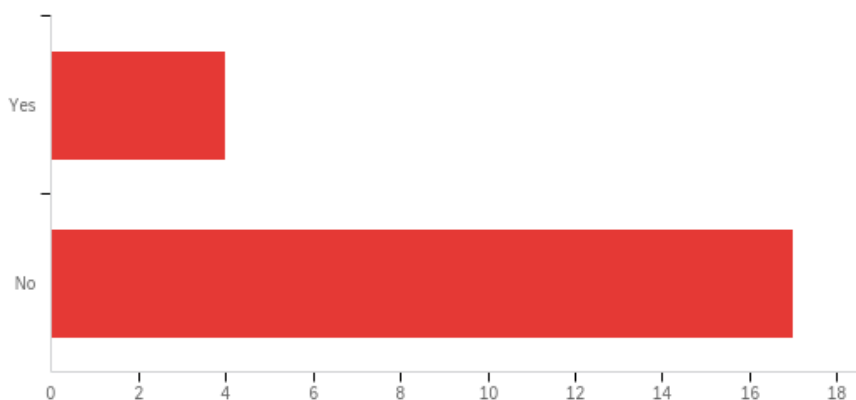


#	Answer	%	Count
1	Yes	23.81%	5
2	No	76.19%	16
	Total	100%	21

In Fig. 3, the majority of survey respondents have not heard of the 'Lift the Lip' fluoride varnish program offered at Interior Health.

Fig. 3

Q3 - Have you heard of the 'Lift the Lip' fluoride varnish program at Interior Health?



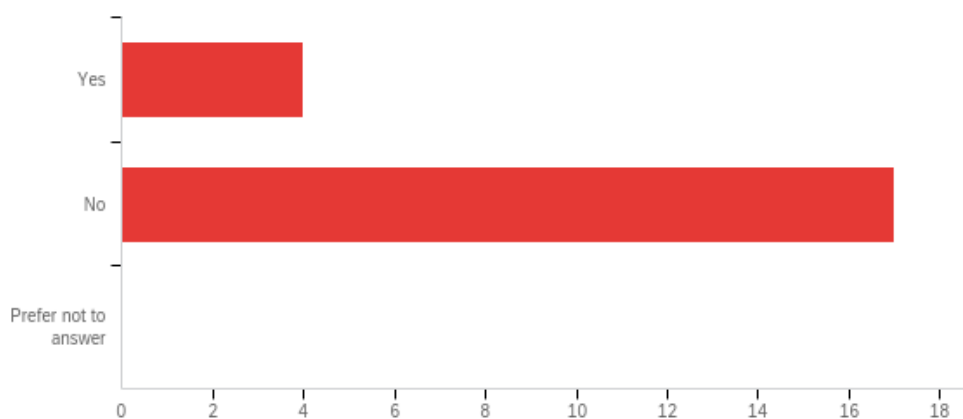
#	Answer	%	Count
1	Yes	19.05%	4

2	No	80.95%	17
	Total	100%	21

In Fig. 4, the majority of the survey respondents indicate that their children are not currently in a fluoride varnish program.

Fig. 4

Q4 - Is your child currently in a fluoride varnish program?

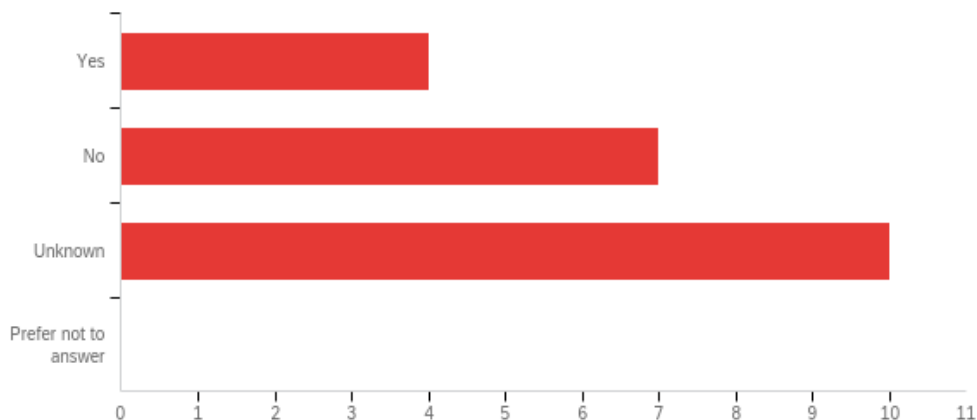


#	Answer	%	Count
1	Yes	19.05%	4
2	No	80.95%	17
3	Prefer not to answer	0.00%	0
	Total	100%	21

In Fig. 5, the majority of survey respondents (47.62%) do not know if their children have cavities. 33.33% report that their children do not have cavities and 19.05% report that their children have unrepaired cavities.

Fig. 5

Q5 - Does your child currently have unrepaired cavities?



#	Answer	%	Count
1	Yes	19.05%	4
2	No	33.33%	7
3	Unknown	47.62%	10
4	Prefer not to answer	0.00%	0
	Total	100%	21

Additionally, interview questions (Appendix B) were asked to staff at the dental program at Interior Health – Kelowna Community Health & Services Centre. From the staff surveyed, 100% agreed that the ‘Lift the Lip’ fluoride varnish program was a necessary program at Interior Health. Some noted that a negative aspect about the program was that it is based on age and not need per se. For instance, the children age out of the program at 4 years old, however there are many socioeconomic factors such as parental income and employment that prevent the children from having access to dental treatment beyond 4 years old. Therefore, it was suggested that in addition to expanding the program to different locations, it could be offered to children above 4 years old based on criteria for need.

One of the most cost-effective ways to deliver fluoride is through community water fluoridation, however in Kelowna, the water is not fluoridated (City of Kelowna). Therefore, there is a need for fluoride varnish programs in the community. It was also shown that two or more applications of fluoride varnish per year are effective in reducing the caries prevalence in high-risk populations. Fluoride varnish applications take less time, create less patient discomfort and achieve greater patient acceptability, especially in preschool-aged children (Azarpazhooh, A. et al).

Conclusion

Summary and Interpretation

According to the survey results, it was shown that:

- The majority of the survey respondents (76.19%) did not have a family dentist
- The majority of survey respondents (80.95%) have not heard of the 'Lift the Lip' fluoride varnish program offered at Interior Health
- The majority of the survey respondents (80.95%) indicated that their children were not currently in a fluoride varnish program
- The majority of survey respondents (47.62%) did not know if their children had cavities. 33.33% reported that their children did not have cavities and 19.05% reported that their children have unrepaired cavities

Therefore, it can be concluded that children of daycare and preschool age are a critical group that is at risk for ECC, however the majority of parents of these children are lacking the resources or information to ensure prevention of ECC.

Additionally, dental staff at Interior Health believe that the 'Lift the Lip' fluoride varnish program is a necessary program in the community. They even elaborated that the program could benefit from expanding not only to other locations, but to allow disadvantaged children above the age of 4 to take part in the program as well.

Recommendations

Cavities are the most common chronic childhood disease in Canada, with more than 50% of children between the ages of 6 to 11 having had a cavity (Azarpazhooh A., et al). Cavities are also increasing in toddlers between the ages of 2 to 4 years. Prevention is a key component to reducing the risk of ECC. Therefore, it is necessary to provide more resources such as oral health education and expanding fluoride varnish programs to include daycares and preschools in order to help to achieve this goal.

Works Cited

- Azarpazhooh, A. et al. "Fluoride Varnish in the Prevention on Dental Caries in Children and Adolescents: A Systematic Review." *Canadian Dental Association*, <https://www.cda-adc.ca/jcda/vol-74/issue-1/73.pdf>.
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- "Water Quality." *City of Kelowna*, 20 Oct. 2021, <https://www.kelowna.ca/city-services/water-wastewater/city-water-utility/water-quality>.
- Weintraub, J A, et al. "Fluoride Varnish Efficacy in Preventing Early Childhood Caries." *Journal of Dental Research*, U.S. National Library of Medicine, Feb. 2006, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2257982/>.

Appendix A: Survey Questions

1. Do you have a child currently in daycare or preschool?
 - a. Yes
 - b. No
2. Do you have a family dentist?
 - a. Yes
 - b. No
3. Have you heard of 'Lift the Lip' fluoride varnish program at Interior Health?
 - a. Yes
 - b. No
4. Is your child currently in a fluoride varnish program?
 - a. Yes
 - b. No
 - c. Prefer not to answer
5. Does your child currently have unrepaired cavities?
 - a. Yes
 - b. No
 - c. Unknown
 - d. Prefer not to answer

Appendix B: Interview Questions

1. What is your position at Interior Health?
2. What is your opinion of the 'Lift the Lip' fluoride varnish program?
3. What are some positive and negative aspects about the program?
4. Do you believe that this is a necessary program at Interior Health?
5. Are there any changes to the program that you would like to see implemented?