***Brightening Smiles: Transforming Oral Health for Aboriginal Children in NSW***

**Executive summary:**

Despite the preventive nature of oral diseases and their critical role in general well-being, poor oral health remains highly prevalent and has severe consequences for children globally. Aboriginal children in Australia face disproportionately high rates of early childhood caries compared to their non- aboriginal peers. (Poirier et al. 2022) Fifty-seven percent of Aboriginal Australians have untreated dental caries, compared to 25% of non-Aboriginal Australians. Aboriginal Australians have a mean decayed surfaces (DS) score of 2.7 compared 0.8 for non-Aboriginal people. (Dimitropoulos et al. 2018) This disparity underscores the urgent need for targeted interventions and policies to address these inequities. Poor oral health and untreated dental caries in childhood can hinder healthy growth and development. Advanced caries can result in suppressed growth due to dental pain and reluctance to eat, difficulty communicating due to impaired speech, low self-esteem from bad breath and an unsightly smile, and poor educational outcomes due to dental pain, interrupted sleep, difficulty concentrating, and missed school hours. (Cashmore et al .2010) Dental caries in children is largely preventable and can be reversed if detected early. This project aims to focus on five key modifiable risk factors include: frequent intake of high-sugar foods and drinks, poor oral hygiene, elevated levels of S. mutans in the primary caregiver's mouth, and limited access to fluoridated water. Consuming fluoridated water helps protect against caries by aiding in the replenishment of essential minerals to primary teeth and making them more resistant to decay-causing acids during their development. (Cashmore et al.2010)

***Background and needs assessment:***

According to the 2016 census, 798,400 individuals identified as Aboriginal and Torres Strait Islander, with more than one-third residing in major city areas. Aboriginal people have more younger population with the median of 23 years as compared to non-Aboriginal people and their Aboriginal children have twice the caries experience and more untreated carious lesion as compared to non-Aboriginal children. (Australian dental association) For many Aboriginal Children, accessing affordable dental care that is culturally and emotionally appropriate is a significant challenge. Dental visits are often driven by urgent issues rather than preventive care, leading to treatments that frequently involve tooth extraction rather than efforts to maintain oral health. This problem is exacerbated by barriers such as limited availability of culturally competent dental services as most population live in rural remote areas, limited access to good diet and the high cost of care. As a result, Aboriginal Australians experience higher rates of dental disease and tooth loss, highlighting the need for more accessible and holistic dental care solutions. (Australian Dental Association) The majority (80%) of Indigenous children who last visited the dentist for a dental problem had at least one tooth surface with caries experience in the primary dentition. (AIHW,2023). Aboriginal children living in New South Wales (NSW) experience on average 2.64 decayed, missing, or filled teeth (DMFT) due to dental caries. This is near double the dmft/DMFT rate of 1.54, experienced by non-Aboriginal children in New South Wales. (Dimitropoulos et al. 2018).

The prevalence of dental caries necessitates comprehensive and culturally sensitive interventions to improve oral health outcomes and quality of life for these children.

There is a need to instil regular oral hygiene habits among Aboriginal children. We aim to address this through daily in-school toothbrushing supervised by trained personnel. Many Aboriginal families may lack access to essential dental care products. By providing free fluoride toothpaste and toothbrushes to both children and their families at three-monthly intervals could improve their oral hygiene practice. There is also need for increased oral health literacy among children, parents, and guardians. The program includes in-school and community dental health education sessions delivered by an Oral Health Therapist and a local Aboriginal Dental Assistant. Promoting the consumption of water over sugary drinks is crucial for preventing dental caries. The program includes the installation of refrigerated and filtered water fountains and a structured school water bottle program to encourage water consumption. The involvement of local Aboriginal Dental Assistants in the educational sessions ensures that the program is culturally relevant and sensitive to the needs of the community. To ensure the program’s success and sustainability, there is a need for a thorough evaluation. The process evaluation will assess the efficiency, feasibility, and effectiveness of the pilot program. ( Dimitropoulos et al. 2018) The key stakeholders include dental healthcare professionals, Aboriginal community health centres, schools, the NSW Department of Health, the Australian Dental Association, and social media platforms. Effective stakeholder engagement will involve regular consultations, culturally appropriate communication, and collaborative planning. If dental caries not treated and oral hygiene becomes worse this could lead to a range of serious diseases and conditions, such as heart and lung diseases, stroke, low birthweight, and premature births (AIHW). The project will utilize the socio-ecological model, emphasizing the interaction between individual, interpersonal, community, and policy-level factors. Additionally, the Ottawa Charter principles of health promotion will guide the development of supportive environments, strengthening community action, and developing personal skills.

***Project design and implementation plan***

**Project goal:**

To mitigate the high incidence of dental caries among Aboriginal children in New South Wales (NSW), a comprehensive intervention program has been developed. This program aims to promote better oral hygiene practices, enhance access to essential dental care products, and provide culturally sensitive dental health education.

**Objectives:**

1. Increase oral health awareness and education among Aboriginal children and their families.
2. Improve access to preventive dental care and treatments.
3. Promote the use of fluoride and other preventive measures.
4. Providing community-controlled services that can be delivered by local aboriginal community by giving them training for dental assisting and oral health therapy.

This project will conduct school-based workshops, distribute oral hygiene kits, and develop culturally relevant educational materials. Regular dental check-ups and fluoride varnish applications will be implemented, with mobile dental clinics reaching remote areas. Local Aboriginal health workers and dental assistants will receive training, and community elders will be involved in health promotion activities. Collaboration with the NSW Department of Health will secure funding and policy support, and advocacy for water fluoridation and nutritious food access will be pursued. A similar strategy was conducted in NSW over a period of 12 months as fluoride varnish application which concluded if these programs are co-designed with local Aboriginal communities, may be a feasible approach to oral health promotion aimed at improving the oral health of Aboriginal children. (Dimitropoulos et al. 2019)

**HEALTH PROMOTION INTERVENTION STRATEGIES AND KEY PROJECT ACTIVITIES.**

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| --- | --- |
| **Output description** | **Key project activities** |
| Oral Health Educational programs. | Conducting school-based educational workshops to teach children proper brushing techniques and the importance of oral hygiene. Distribute oral hygiene kits, including toothbrushes and fluoride toothpaste, to students and their families. Develop and distribute culturally relevant educational materials, such as pamphlets and posters, to raise awareness about oral health. (Poirier et al. 2022).Implement a reward system to encourage consistent oral health practices among children, reinforcing positive behaviours with incentives.(Dimitropoulos et al. 2019) |
| Preventive Dental Care: | Establish regular dental check-ups and cleanings for children to monitor and maintain their oral health. Apply fluoride varnishes and sealants to children's teeth to prevent cavities and strengthen enamel. Train local Aboriginal community members in basic dental care procedures to ensure they can provide preventive treatments and support within the community. ( Dimitropoulos et al.2018) |
| Community involvement and training. | Organize training sessions for local Aboriginal individuals in dental assisting and oral health therapy, empowering them to take an active role in improving community health. Ensure that dental health services provided are controlled and managed by the community to enhance trust and engagement. Encourage local ownership and participation in the program, fostering a sense of responsibility and commitment to oral health improvement. ( Dimitropoulos et al. 2018) |

These strategies and activities are designed to improve oral health outcomes for Aboriginal children in New South Wales by meeting their unique needs and challenges through culturally respectful and community-driven approaches.

**Project management:**

This project is managed by the Project Manager who will oversee the overall implementation and coordination of the oral health program in Aboriginal children of New south Wales. They will ensure that they have enough funding and resources project stays on schedule, within budget, and meets all set objectives. Limited resources may hinder the project. There Responsibilities include interacting with stakeholders, managing resources, and addressing any issues risks. Many Aboriginal communities in New South Wales are in remote areas, making it challenging to provide consistent dental care and education services. Travel logistics, costs, and the availability of dental professionals willing to work in these areas can be significant barriers. The Dental Health Coordinator will coordinate with local dental professionals, schools’ Aboriginal community organization NSW health government and to provide training of preventive treatments and involve in any advocacy or policy ensure that dental services are accessible to Aboriginal children. They will also oversee the distribution of oral hygiene kits and manage fluoride treatment programs. Aboriginal Community controlled officer will facilitate engagement with the Aboriginal community and other stakeholders. Their role is crucial in building trust and ensuring that the project’s initiatives are culturally sensitive, and community led as misunderstanding and cultural insensitive can lead to resistance from the community and low engagement. They will act as a bridge between the project team and the community, ensuring that feedback is incorporated, and that the community is actively involved in the program. Health Educator will develop and implement the oral health education program. They will create culturally relevant educational materials, such as pamphlets and posters, and conduct school-based educational workshops. They will also develop a reward system to encourage consistent oral health practices among children.

**Evaluation plan:**

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| --- | --- |
| **Evaluation methods and data sources\*** | **Frequency of data collection** |
| Pre and post intervention survey | *This is taken at the start of the project to evaluate the prevalence dental caries, oral hygiene, and diet before intervention and at the end of the project to see the results and effect of intervention.* |
| Dental health records and clinical assessment every six months  | *To monitor incidence and severity of disease on every visit or twice a year when they are seen by dental health professional to record the number of decayed, missing, and filled teeth (DMFT) and surfaces (DMFS) in children.* |
| Focus group /workshops | *Conducting a focus groups/workshops with parents, community members, and healthcare providers every year to gather qualitative data on their perceptions of the program's impact and areas for improvement.* |
| Reporting to the stakeholders, healthcare professional and Aboriginal community leaders and funding bodies. | *Interim report: Providing regular update to stakeholders, healthcare professional, community leaders and funding bodies how the project has been going every 6 months.**Final reports: Compile a comprehensive report detailing the findings, including statistical analyses, success stories, challenges faced, and recommendations for future programs.* |
| Community Feedback and follow up session. |  Organise session to share results and get feedback from the community at the end and follow up every year to see the sustainability of the project. |

**BIOGRAPHY**

We are an organisation dedicated to improving oral health in Aboriginal communities, we strive to bridge the gap in dental care access and education. Our mission is to reduce dental caries among Aboriginal children in New South Wales through culturally sensitive, community-led initiatives. By collaborating with local leaders and health professionals, we design and implement preventive programs, conduct educational workshops, and provide essential dental care resources. Our holistic approach aims not only to improve oral health outcomes but also to empower communities with the knowledge and tools needed for long-term health and well-being.

**PROJECT TEAM:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Team members** | **Biography** | **Strengths and skills** | **Roles and responsibilities** |
| Project Manager  | With over 8 years o experience in public health, he sees all aspects of project ensuring timely and successful implementation of project.  | Excellent leadership, project management and strategic planning skills. | Coordinates with all project activities, manages timelines and budget and stakeholders’ communication. |
| Dental health coordinator | Dental health professional with extensive experience in community dental health, focuses on preventive measures and extensive outreach. | Expertise in dental health education, preventive care strategies, and community health. | Develops and implements dental health programs, conducts training sessions for dental health workers, and oversees dental care services. |
| Aboriginal community-controlled officer | Specializes in building a relationship with aboriginal population ensuring culturally sensitive and effective communication | Strong communication, cultural competency, and community engagement skills. | Acts as a ridge between project team and community . provides feedback of the community engage with them in frontline gains there trust so that they get involve in the intervention. |
| Health educator | Design and deliver educational program to improve oral health literacy in children and parents  | Has good knowledge of health promotion and experience in developing curriculum | Create educational materials like pamphlets, organise workshops and training sessions for educating people |
| Data Analyst  | Collecting and analysing the data to assess the project impact. | Proficiency in data collection, statistical analysis, and public health research | Analysis data to provide insight on continuous improvement. |

**Budget**

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| --- | --- | --- |
| **Cost type** | **1 YEAR** | **Total** |
| Salaries and Wages:Project managerDental health professionals (4)Health educator Community control officerData Analyst | $20000$10000$20000$20000$10000 | $60,000/ANNUALLY |
| Education training program for dental health professional  | $10,000 | $10000/ANNUALLY |
| School campaign Toothbrushes Floride toothpasteDental kits  | $3000$5000$7000 | $15000/ANNUALLY |
| Posters and pamphlets  | $2000 | $2000/ANNUALY |
| Organising seminar and workshop for community:Hall booking Kits provided | $1000$2000 | $3000 |
| TOTAL |  | $90,000/ANNUALLY |

**ACADEMIC INTEGRITY AND HONESTY:**

This tender is complied with the University’s Academic Honesty Policy by accurately referencing the review based on the APA guidelines. A thorough understanding of the topic was captured through prior learning, and background information attained from AIHW WEBSITE, ADA WEBSITE AND LIBRARY PEER REVIEWED ARTICLES. Various research was conducted online. I ensure that I have made this review entirely individually by reading all the articles and taking references from them. Below are all the article references mentioned from where ideas were taken.

***References:***

**1.Poirier, B. F., Hedges, J., Smithers, L. G., Moskos, M., & Jamieson, L. M. (2022). Child-, Family-, and Community-Level Facilitators for Promoting Oral Health Practices among Indigenous Children. International journal of environmental research and public health, 19(3), 1150.** [**https://doi.org/10.3390/ijerph19031150**](https://doi.org/10.3390/ijerph19031150)

**2.Dimitropoulos, Y., Gunasekera, H., Blinkhorn, A., Byun, R., Binge, N., Gwynne, K., & Irving, M. (2018). A collaboration with local Aboriginal communities in rural New South Wales, Australia to determine the oral health needs of their children and develop a community-owned oral health promotion program. Rural and Remote Health, 18(2)**[**https://doi.org/10.22605/RRH4453**](https://doi.org/10.22605/RRH4453)

**3.Dimitropoulos, Y., Gwynne, K., Blinkhorn, A., & Holden, A. (2020). A school fluoride varnish program for Aboriginal children in rural New South Wales, Australia. Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals, 31(2), 172–176.** [**https://doi.org/10.1002/hpja.266**](https://doi.org/10.1002/hpja.266)

**4.Australian Institute of Health and Welfare. (2023). Oral health and dental care in Australia. Retrieved from** [**https://www.aihw.gov.au/reports/dental-oral-health/oral-health-and-dental-care-in-australia**](https://www.aihw.gov.au/reports/dental-oral-health/oral-health-and-dental-care-in-australia)

**5.Cashmore, A. W., Phelan, C., & Blinkhorn, A. S. (2010). Dental caries in children. N S W Public Health Bulletin, 21(7–8), 184–185.**

**6.Australian Dental Association.( 2020).** **Policy Statement 2.3.5 - Aboriginal and Torres Strait Islander Australians.** [**https://ada.org.au/policy-statement-2-3-5-aboriginal-and-torres-strait-islander-australians**](https://ada.org.au/policy-statement-2-3-5-aboriginal-and-torres-strait-islander-australians)

**7.Dental Caries in children. (2010).** **Aaron W. CashmoreA, Claire PhelanB**

**and Anthony S. BlinkhornC.** **| Vol. 21(7–8) NSW Public Health Bulletin** [**https://www.phrp.com.au/wp-content/uploads/2014/10/NB09043.pdf**](https://www.phrp.com.au/wp-content/uploads/2014/10/NB09043.pdf)

**Annexes**

**Stakeholder analysis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Stakeholders | Description of involvement in the Issue | Interest in the issue | Influence /power | Position | Impact of issue on stakeholder |
| Dental healthcare professional | Their expertise is needed to providing preventive and treatment services | High | High | supportive | High |
| Aboriginal community health centre | Role is important in developing culturally appropriate strategies and effective strategies for prevention and treatment | High | High | Supportive | High |
| Schools | They have role in promoting oral health education and preventive measure among children. | Low | High | Supportive | Moderate |
| NSW department of health | Giving funding, policy making  | Low | High | Supportive | Low |
| Dental association | Advocating oral health  | High | High | Supportive | High |
| Social media | Oral health promotion | Low | High | Supportive | Low |

**LOGIC MODEL**

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| --- | --- | --- | --- |
| ACTIVITIES | OUTPUT | IMPACT  | OUTCOME |
| SCHOOL BASED EDUCATION PROGRAMS  | Dental kitsTeacher training Educational material (pamphlets, posters)Workshops | Improve oral hygiene practice among students, lower rate of dental caries, enhance toothbrushing technique. | Number of new dental caries cases identified during school dental screenings.The percentage of students who brush twice daily.TARGET:70% of aboriginal children in NSW within one yearBaseline: 30% of aboriginal children in NSW. |
| EDUCATIONAL WORKSHOPS | Increased use of toothbrushes and fluoride toothpaste.Reduced consumption of sugary foods and beverages.Use of fluoride | Raises immediate awareness about the importance of nutrition AND creates positive attitude towards nutrition and oral health, motivating participants to adopt healthier dietary choices for immediate benefits. | Measure the percentage of workshop participants who demonstrate improved knowledge and reduced sugary snacks about the impact of diet on oral health through pre- and post-workshop surveys. Target: Increase awareness by at least 20% within six months of workshop implementation.Oral health outcome in people participated in workshop. Target :10%improvement in NSW aboriginal children in one year.Baseline: 30% had the knowledge about sugar consumption negative effect and water fluoridation. |
| COMMUNITY LED ORAL HEALTH PROGRAMS | Improves access to dental care services and fluoride services. | Promoting localized, sustainable practices and reducing the need for travel to centralized facilities. | Number of community members trained, and number of communities led clinics:Target: Train at least 50 community members annually and establish a minimum of 5 community-led dental clinic by 2025 for Aboriginal in NSW.Baseline: Number of communities led dental clinic in 2024 |
|  |  | Intermediate impact: Reduction of caries prevalence to 60% in aboriginal of NSW by 2025and increase access to dental care facilities. |  |
|  |  | Long-term outcome: Improve oral health status for aboriginal |  |

***Project Activity Schedule (Gannt chart)***

 **FINANCIAL YEAR 12 MONTH**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| QUARTERS | 1 | 2 | 3 | 4 |
| CONDUCTING NEEDS ASSESMENT | X |  |  |  |
| PARTNERSHIP WITH STAKE HOLDERS | X |  |  |  |
|  CREATING DETAILED ACTION PLAN | X |  |  |  |
| CREATING BUDGET | X |  |  |  |
| IMPLEMENTATION OF GOALS |  | X | X |  |
| EVALUATION |  |  |  | X |
|  FOLLOW UP |  | X |  | X |