

Tele-dentistry programme helps more than 350 kids over 3 years

NUH initiative boosts oral health of pre-schoolers from lower-income families

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Over the past three years, more than 350 pre-school children from lower-income families have taken part in a tele-dentistry programme, with findings showing a reduced risk of tooth decay.

It led to earlier dental intervention and improved follow-through on treatment recommendations compared with an earlier study. More parents also brought their children for regular dental care at primary care clinics.

Launched in January 2023, the initiative is part of the National University Hospital's (NUH) Health and Development Support in Pre-school Partnerships (HEADS-UPP) programme. The collaboration with social service agency Care Corner Singapore and pre-school operator PCF Sparkletots is funded by the Ministry of Health.

The programme is targeted at children aged 18 months to six years. As at Jan 20, 355 children from 17 PCF Sparkletots pre-schools in western Singapore have benefited, NUH said on April 22.

Nurses and case management officers visited the children in school



Two-year-old Rhianna Lee with her grandmother Peggy Tan, who learnt how to better manage the toddler's dental health. With them are (from left) Associate Professor Catherine Hong, NUS dentistry vice-dean for research, innovation and enterprise; Dr Ishreen Dhillon, a HEADS-UPP programme participant; and Adjunct Associate Professor Chong Shang Chee, programme lead of HEADS-UPP.
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to take intraoral images – photographs of the inside of the mouth.

Parents were asked to complete a questionnaire on matters such as their children's oral hygiene and dietary habits, frequency of dental visits and family history of caries, or tooth decay.

Each questionnaire was reviewed by a paediatric dentist from the dentistry faculty of NUS, who assessed the photographs for signs of

dental plaque and caries.

A personalised report was generated for each child. It indicated areas of concern and the level of risk of decay, as well as recommended follow-up actions. The report was then reviewed with parents, focusing on key recommendations and preventive practices.

High-risk children were referred to the National University Centre for Oral Health Singapore (NU-

COHS) for specialist care, while those at lower risk were referred to appropriate primary care.

The reports showed that 93.3 per cent of the children were at moderate to high risk of dental caries, with the images showing that 30.7 per cent had inflamed gums and 54.9 per cent had poor oral hygiene.

About six to nine months later, parents completed another questionnaire to assess whether they

had followed recommendations such as arranging dental visits.

The programme led to earlier intervention, with 57.5 per cent of the children receiving specialist dental treatment between four and six months after it was recommended.

This is an increase from the 13.3 per cent of children from lower-income families who received such treatment in a 2019 National University Health System study.

About 51 per cent of parents followed recommendations for regular dental care for their children at primary care clinics, up from 28.9 per cent in the earlier study.

Two-year-old Rhianna Lee was assessed to be at high risk of dental caries, with signs of inflamed gums.

Her grandmother, Madam Peggy Tan, said she learnt how to better manage the toddler's dental health.

"Even though Rhianna still cries when brushing, we try to comfort her, and I plan to check with the dentist on how to make the routine more comfortable," said the 65-year-old part-time customer service officer.

The programme involved experts from NUS dentistry, NUCOHS and the NUS Yong Loo Lin School of Medicine.

Associate Professor Catherine Hong, NUS dentistry vice-dean for research, innovation and enterprise, said: "By bringing dental assessment and clinical advice closer to where children are, we are able to identify risks earlier and support lower-income families who might otherwise face barriers to timely care."

Prof Hong noted that compared with a mobile dental clinic – which would require a dentist and specialised equipment – tele-dentistry is more efficient and cost-effective.

Adjunct Associate Professor Chong Shang Chee, programme lead of HEADS-UPP, said the team aims to benefit another 300 children over the next three years. They aim to use artificial intelligence to review intraoral images, evaluate responses and generate reports.

"These enhancements will streamline the dental screening process, enabling the programme to reach more children and expand to additional pre-schools, while reducing reliance on manual processes," said Prof Chong, who also heads the developmental and behavioural paediatrics division at NUH's paediatric arm.