

The Virtual Dental Home: A Community-Academic Model Utilizing Teledentistry to Improve Access to Oral Health Care for School Children in Rural Areas

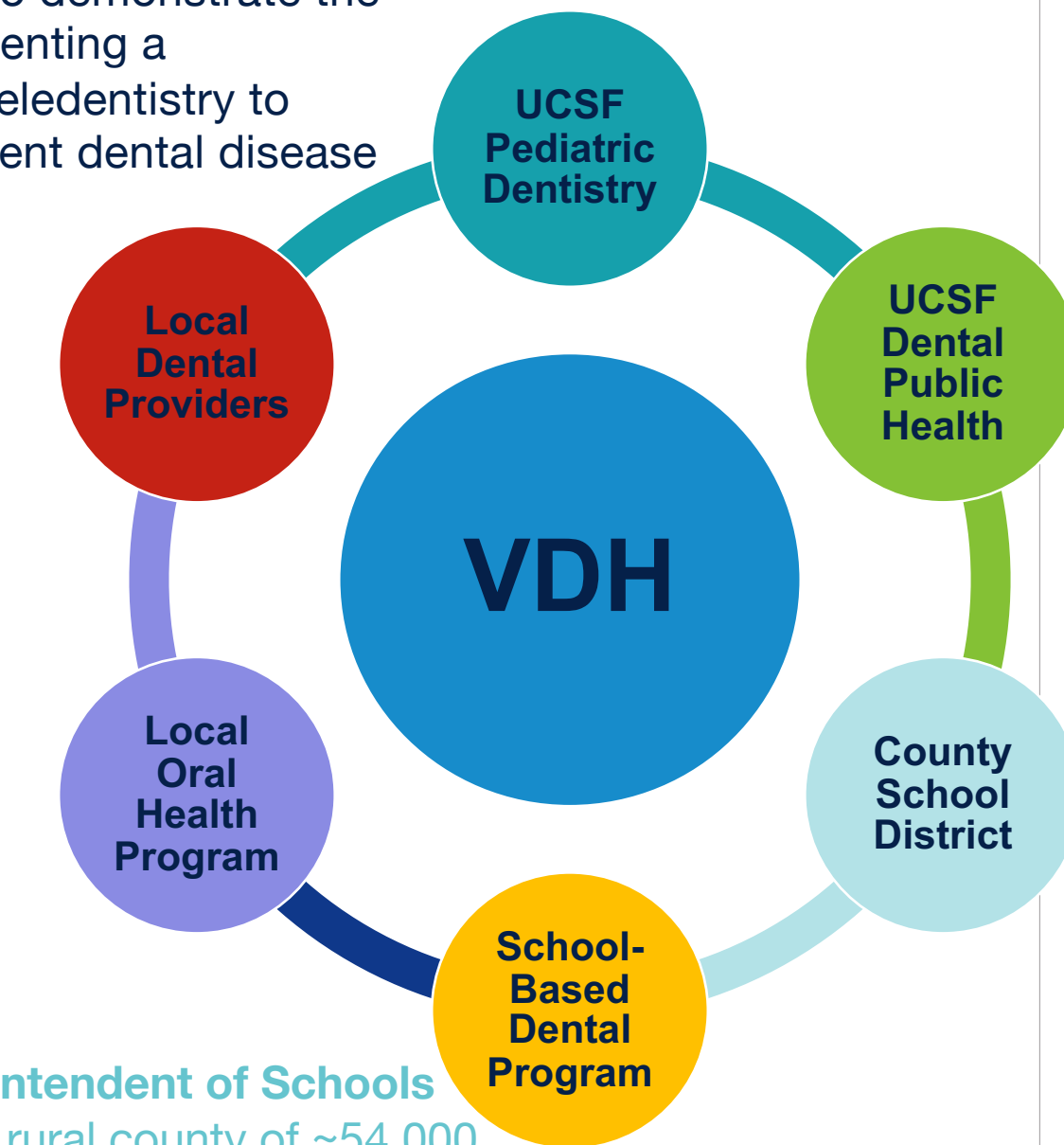
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Background

- Residents of rural areas have a higher prevalence of dental diseases compared to residents of urban areas. This can be attributed to lack of access to care due to lack of availability of dental providers, more residents with no dental insurance, fewer areas of community water fluoridation, and greater travel distance and time needed to access care.
- Teledentistry is the application of telehealth and its technologies in dentistry. This model has been shown to have the potential to improve access to oral health care in rural areas.
- The aim of this pilot project is to demonstrate the feasibility and efficacy of implementing a community-academic model of teledentistry to improve access to care and prevent dental disease for children in a rural community.

Benefits of Using Teledentistry

- Increased access to care
- Increased access to specialists for consultation and diagnostic services
- Reduced school absences
- Dental care in a child friendly environment



Methods contd.

Supplies:

- Mobile dental chair & unit with compressor
- Computer, sensors and mobile radiograph unit
- High speed wired internet connection
- Camera (extra-oral and intra-oral)
- Dental care supplies and disposa



Timeline

- July 2020; project funding & inception
- July 2020 → September 2021; agreements, establishing partnerships, and workflow design
- September 2021 → June 2022; Year 1 program promotion, recruitment and registration
- October 2021 → June 2022; Year 1 patient evaluation, care and referral.
- July 2022 → August 2022; School summer break, program review, year 1 evaluation and improvement plan
- September 2022 → Current; Year 2 patient evaluation, care and referral.
- October 2022: Data reporting exported from AXIUM EDR software using customized report for November 2022 through September 2023.



Results:



Patients and Visits November 2022 → September 2023

Children Enrolled	39
Age (mean years)	9.2
Total Visits	195
Children referred to local dental provider (N=, %)	N=14 35.9%
Children referred for sedation/general anesthesia (N=, %)	N=6 15.4%

Total Examination and Procedures Completed

Comprehensive Examination including Radiographs (asynchronous)	26
Recall Examination (asynchronous)	16
Prophylaxis	49
Fluoride Varnish	54
Silver Diamine Fluoride (total teeth)	119
Interim therapeutic Restoration (total teeth)	19

Diagnosis	
Caries Risk High (%)	97.3%
DMFT (mean ± SD)	3.3 ± 3.6
Caries Free Children (%)	38.5%
Dental Resident Training	
Ped Dental Residents trained in VDH (n=)	7
% PD at least moderately confident in their ability to work within a VDH	100%

Challenges:

- Even with the VDH; providing comprehensive dental care to children still often requires the family to travel out of their local community for dental care.
- Case management and individualized family support is frequently needed in helping families to obtain recommended dental care outside of the school site.
- Rural dental providers could benefit from increased exposure and training in treating children with dental caries, as many are not comfortable completing restorative and surgical procedures on children.
- The implementation of the VDH requires high speed internet access that is not available in all rural areas

Conclusions:

- A dental school, community partners, and a school district are able to form a collaboration to provide dental care to children in low-resourced rural settings where traditional dental care is hard to obtain.
- Current technology and policy supports the ability to evaluate, diagnosis, and treatment plan dental care of children remotely.
- Children in rural California have high dental needs, and high caries risk and can benefit from advances in care delivery models to improve their oral health.
- About half of children were able to have all of their dental needs addressed within the school setting
- A VDH associated with post-graduate training programs contributes to workforce experience and confidence in providing dental care in novel remote care models.

Next Steps:

- Grow the number of children enrolled and routinely receiving care at the pilot elementary school site.
- Expand the community-academic model of the VDH to other schools within the partner county.
- Establish efficient workflows to support a volume of patients to make the VDH a financially viable system beyond the grant funding period.

References:

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ACKNOWLEDGMENT

The virtual dental home is part of a project supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling \$3.2M with 0% percentage financed with non-governmental sources, grant #D88HP37553. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS or the U.S. government