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Ruehe, Amita Sung

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Oral health education and appointment reminders through text  
messaging

by

Amita Sung Ruehe, DDS

THESIS

Submitted in partial satisfaction of the requirements for the degree of

MASTER OF SCIENCE

in

Oral and Craniofacial Sciences

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO



Does Text Messaging Oral Health Information and Appointment Scheduling Reminders  
Improve Appointment Attendance and Dental Knowledge at the UCSF Pediatric Dental  
Clinic?

Amita Ruehe

**Purpose:** This longitudinal study determines the effectiveness of text messaging to communicate appointment reminders and oral health information to parents of children who present as new patients to the University of California, San Francisco (UCSF), Pediatric Dentistry Clinic.

**Methods:** A convenience sample of 95 parent/child pairs was recruited from the UCSF Pediatric Dentistry clinic. Children were aged 1-6 years, new patients, healthy (American Society of Anesthesiologists (ASA) classification 1 or 2), and parents were able to give consent in Spanish or English. The pairs were randomized into 2 groups. Parents in the experimental group received appointment-scheduling reminders and oral health information by text messages every 3 weeks. The control group received appointment-scheduling reminders by the conventional postcard system and no supplemental educational information was transmitted. Data was collected regarding appointment attendance, demographics, oral health knowledge, oral hygiene and dietary practices, and preferences for mode of appointment reminders.

**Results:** During the year prior to initiation of this study, the UCSF Pediatric Dentistry clinic had a 6-month, periodic oral examination (POE) appointment attendance rate of 36%. For subjects recruited in this study, an increased POE appointment attendance rate was seen in both the control (47%) and experimental groups (44%), although these increases did not differ significantly from the baseline rate of 36% ( $p =$

0.0526). Twenty-two of 47 control group subjects and 21 of 48 experimental group subjects returned for their POE appointment. On average, the control group patients returned later for their scheduled POE than the experimental group patients (1.90 months versus 1.05 months late), although the difference was not statistically significant ( $p = 0.1694$ ). When surveyed, parents in the experimental group reported better adult supervision while brushing compared to the intervention group ( $p = 0.0217$ ). All other responses regarding dental hygiene and diet habits were not significantly different between the control and experimental groups.

**Conclusions:** Although oral health education occurs during a new patient comprehensive oral examination there is a need for delivering additional oral health messages to parents of pediatric patients. Text messaging oral hygiene information did improve parents' reported supervision of their child's tooth-brushing but did not significantly improve reported diet practices of the children. Text messaging did not significantly improve timeliness of POE appointment scheduling or attendance rates. Text messaging may be a valuable adjunct to improving appointment attendance rates and oral health knowledge but it needs to be supplemented with other tools. Further research needs to be conducted to explore the effect of text messaging on oral health and long-term follow-up care.

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## INTRODUCTION

Dental caries is an infectious disease resulting from cariogenic bacteria, primarily mutans streptococci, that metabolize fermentable carbohydrates to produce acid, which, over time, demineralizes tooth structure.<sup>1</sup> This disease process is defined as a balance between protective factors and destructive factors. When destructive factors, such as cariogenic bacteria, frequent ingestion of fermentable carbohydrates or lack of saliva outweigh protective factors, for example fluoride, calcium, phosphate, saliva or antibacterial agents, the tooth surface is demineralized and eventually enough enamel and dentin is destroyed forming a cavitation or cavity. Recent surveys have shown that even though dental caries has been reduced in most demographics since the 1960s, it still is a major health problem.<sup>2</sup> In children, caries continues to be the most common chronic disease and is 5-8 times more prevalent than childhood asthma.<sup>3</sup> According to the national NHANES survey, childhood caries is on the rise in children ages 2-5 years old.<sup>4</sup>

The American Association of Pediatric Dentists defines early childhood caries (ECC) as any child under the age of 6 having one or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces.<sup>1</sup> Severe early childhood caries (S-ECC) is defined as any smooth-surface caries in children under the age of 3.<sup>1</sup> “From ages 3 through 5, one or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of  $\geq 4$  (age 3),  $\geq 5$  (age 4), or  $\geq 6$  (age 5) surfaces also constitutes S-ECC”.<sup>1</sup>

The rise in ECC is especially troubling because childhood caries has been shown to cause dental pain, missed days of school and difficulty in eating, swallowing and speaking.<sup>5</sup> This process results in “increased hospitalizations or emergency room visits, increased treatment costs, risk for delayed physical growth and development, loss of school days and increased days with restricted activity, diminished ability to learn and diminished oral health-related quality of life”.<sup>6</sup>

Management of ECC includes preventive and therapeutic treatments.<sup>3</sup> Treatment modalities include fluoride, interim therapeutic restorations (ITR), and dental restorations. To perform these treatments safely, the patient may need advanced behavior management (protective stabilization, sedation and/or general anesthesia).<sup>6</sup> However, the best management of ECC is prevention. ECC is completely preventable if a dental home is established by the time a child is 12 months old, caries risk factors are identified and preventive oral health practices are implemented. A preventive plan can be placed after a dental examination appointment is completed. At this appointment, the dental provider examines the patient and performs a caries risk assessment. Three factors are evaluated during this assessment; biological risk factors (lifestyle factors), protective factors (healthy behaviors) and disease indicators (presence of carious lesions, plaque, dry mouth, etc.).<sup>7</sup> After a patient’s caries risk is appropriately diagnosed, a dental prophylaxis or cleaning is completed, the patient is given a fluoride treatment and the parent receives anticipatory guidance and counseling on diet and oral hygiene.<sup>7</sup> If a patient has a high caries risk, the protocol at the University of California, San Francisco (UCSF) Pediatric Dentistry Clinic is to initiate a 3-month preventive appointment

schedule in order to closely monitor the patient and guide the parent about practices that will improve their child's oral health.

Studies indicate that children who miss their dental appointments have higher caries recurrence,<sup>8</sup> suggesting that regular dental appointments and parental guidance are crucial to managing early childhood caries. Some children are at even greater risk because about 75% of all ECC occurs in 8% of children between the ages of 2 and 5 years.<sup>7</sup>

Additionally, approximately 40% of children with S-ECC develop new carious lesions within 12 months of restorative treatment. Therefore, current prevention methods, practitioner interviewing and verbal parental guidance may not be sufficient for lowering ECC risk.<sup>8-13</sup> Consequently, it is important to be innovative when searching for new ideas to improve dental appointment attendance rates, encourage good oral habits and reduce ECC in these vulnerable populations.

Studies have found that the majority of the US population owns a cell phone that has text messaging capabilities. Text messages or short message service (SMS) is beneficial as a communication tool because it can reach all demographics, is inexpensive, is portable, allows two-way communication, can be used as an alerting or surveillance tool and allows immediate action.<sup>14</sup> In medicine, both medical providers and pediatric patients' parents showed positive attitudes towards the utilization of text messages as appointment and vaccination reminders.<sup>15, 16</sup> In a lower income population, text messaging has been researched as an innovative modality to engage parents and caregivers under the age of 45.<sup>17</sup> Text messaging reminders have improved both vaccination rates and resulted in

fewer missed medical appointments.<sup>18-20</sup> When looking at motivational counseling, text messaging for a smoking cessation intervention increased the long-term quit rates compared to conventional interventions.<sup>21</sup> Additionally, text messaging labor costs are significantly lower than telephone or postcard reminders.<sup>20</sup>

In dentistry, text messaging has shown mixed results. Multiple studies performed outside the United States revealed reduced missed appointments with text messaging reminders.<sup>22-24</sup> On the other hand, a study performed at the University of Washington concluded that text-messaging reminders in a pediatric dentistry university setting did not result in lower missed appointments.<sup>25</sup> However, almost half of the participants at the latter study preferred voice reminders at the study's onset and no diet counseling or hygiene instructions were provided via text messages.

**The following study was performed by Dr. Stacy Baker, DDS, MS in 2010:<sup>28</sup>**

To assess the feasibility of using text messaging with the population attending the UCSF Pediatric Dentistry Clinic, a survey approved by the UCSF Committee for Human Research was administered to a consecutive sample of 47 parents from August 2010 to November 2010. These parents were asked to complete the self-administered survey if they had children aged 1-5 years old who were scheduled to have dental treatment completed under general anesthesia. Information was collected about parent demographics, cell phone availability and text-messaging usage, and preferences for mode of appointment reminders.

The survey response rate was 98% (47/48). Many families were low income (91% had government dental insurance – Denti-Cal, California Children’s Services, Healthy Kids/Healthy Families), 49% of parents were aged 20-29 years and 51% were  $\geq 30$  years old. The average distance traveled by the parents to attend UCSF for pediatric dental treatment was 29.7 miles (range 1.1 - 106 miles). Ninety percent of participants had a cell phone, and of those, 95% were able to receive a text message. Also, 98% of participants with a cell phone were interested in receiving text message reminders for upcoming dental appointments and 84% were interested in text messages with oral health information. There were no statistically significant differences amongst cell phone availability or willingness to receive text messages between parents aged 20-29 years and parents  $\geq 30$  years old (all  $p > 0.05$ ).

Based on these data, the majority of parents of children who present to the UCSF Pediatric Dentistry Clinic have cell phones and are able to use text messaging. Therefore, text messaging may be feasible to use in a pediatric dentistry population to send appointment reminders and educational information.

A pilot study tested the feasibility of using text messaging in a sample of 21 parent/child pairs recruited from the UCSF Pediatric Dentistry clinic.<sup>28</sup> Children were aged 1-6 years, classified as American Society of Anesthesiologists (ASA) 1 or 2, and were scheduled to have dental treatment completed under general anesthesia. The pairs were randomized into 2 groups. Parents in the experimental group received appointment

reminders and oral health information by text messages bi-weekly. The control group received appointment reminders by the conventional system using personal phone messages and no supplemental educational information. Data was collected regarding demographics, oral hygiene and dietary practices, and preferences for mode of appointment reminders.

Most of the families were low income (90% Medicaid dental insurance). An average estimated distance of 28 miles was traveled to reach the clinic, and text messaging was the preferred method for appointment reminders (67%). Attendance at the 2-week post-op exam appointments was 60% for parents who received text messages (n=11) and 80% for those who received a personal phone call (n=10), both significantly higher than baseline attendance rates in this clinic (43%). There were 7 participants (32%) who returned for the 3-month follow-up appointment, 2 from the experimental group and 5 from the control group.

With this small pilot study, there were no statistically significant differences in follow-up attendance rates between participants receiving text messages as compared to phone calls. There was better attendance at the 2-week post-op visit than the 3-month appointment. However, both groups exhibited elevated attendance rates when compared to historical rates for this clinic. A confirmatory study needs to be performed with a larger sample size to investigate text messaging use in a pediatric dentistry population for sending appointment reminders and educational information.

## PURPOSE AND AIMS

The purpose of this randomized prospective cohort study is to analyze the effects of text messaging oral health information and appointment scheduling reminders to parents of children who are new patients at the UCSF Pediatric Dentistry Clinic. The study is designed to evaluate the effectiveness of these text messages on appointment attendance and dental knowledge of parents and the oral health of the pediatric patients at the UCSF Pediatric Dentistry Clinic.

### AIMS

Aim 1: Determine the UCSF Pediatric Dentistry Clinic's baseline appointment attendance rates for 6-month periodic oral examinations (POE) for the calendar year 2012 using the currently administered appointment reminder approaches, which include front desk personnel reminder phone calls and postcards sent prior to appointment due dates. Perform demographic and geographic analysis of these patients.

Aim 2: In a randomized prospective cohort study, analyze the influence of text messaging oral health information and appointment reminders on the POE appointment attendance rate and changes in parental dental knowledge. Two groups will be used, one group will receive text messages and the other group will continue to receive conventional reminders using the existing protocol at the UCSF Pediatric Dentistry Clinic. Perform demographic and geographic analysis of these patients.



## HYPOTHESIS

Text messaging oral health information and dental appointment reminders to parents of pediatric patients will increase the attendance rate of patients returning for preventive appointments, increase the dental knowledge of parents and improve the oral health of the pediatric patients at the UCSF Pediatric Dentistry Clinic.

## **AIM 1: BASELINE CLINIC FOLLOW-UP RATES AND DATA**

## MATERIALS AND METHODS

The study was approved by the UCSF Committee for Human Research (IRB # 13-11998). Study participation was completely voluntary.

A retrospective chart review was performed to calculate the number of new patient comprehensive oral examinations (COE) performed at the UCSF Pediatric Dentistry clinic in the calendar year 2012 and to determine how many of those patients returned for a 6-month POE. The clinic had approximately 25 different providers during this time period, consisting of pediatric dental residents and attendings. Demographic information for the pediatric patients seen during 2012 was collected and analyzed. The existing appointment reminder system entails sending a postcard approximately 3-4 weeks prior to when the POE visit is due. The postcard has the clinic phone number and reminds parents to call to schedule their child's next visit. A staff member from the clinic telephones and leaves a reminder message one or two days prior to scheduled appointments.

## STATISTICAL ANALYSIS

Descriptive statistics were used to summarize the demographic data of the patient population at the UCSF Pediatric Dentistry Clinic during 2012. Frequencies and proportions of the demographic variables were also calculated.

## AIM 1 RESULTS

### BASELINE CLINIC FOLLOW-UP RATES

During the 2012 calendar year, the UCSF Pediatric Dentistry Clinic performed 1102 COEs – Figure 1. Of those, 316 patients returned for a POE while 786 did not. Some patients received treatment under general anesthesia and sedation (a total of 213) and none of these patients returned for their POE. For the purposes of this study, we are assuming these patients have a dental home elsewhere and presented to UCSF for a one-time only general anesthesia appointment. Excluding these 213 patients, 316 of 889 patients who initially presented for COE returned for a POE, for an appointment attendance rate of 35.5% for our non-referred or comprehensive care patients.

### DEMOGRAPHICS

The majority of the new patients seen at UCSF Pediatric Dentistry for the calendar year 2012 were under the age of seven (79%) – Table 1. Slightly more males (54%) than females (46%) were seen as new patients and the primary insurance provider was Denti-Cal (86%). The language and race was not collected and/or reported for all new patient

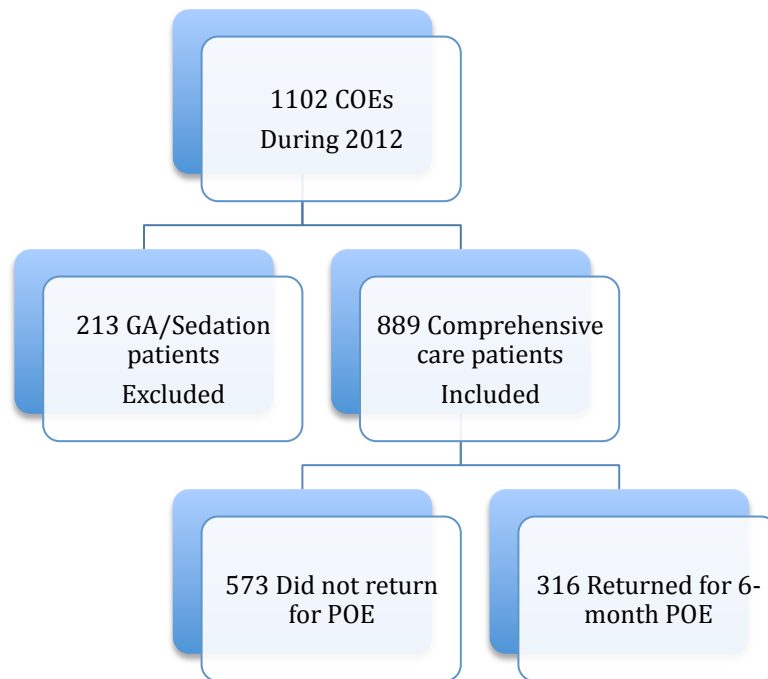
families. For those patients whose families reported the language and race, the majority of the families spoke English (32%) and identified as Other Hispanic (23%).

Table 1: AIM 1 Baseline Demographics N=1102

		Number	Percentage
<b>Age of Child</b>	<1 year old	12	1%
	1 year old	126	11%
	2 years old	176	16%
	3 years old	206	19%
	4 years old	166	15%
	5 years old	125	11%
	6 years old	63	6%
	7 years old or greater	228	21%
<b>Child Gender</b>	Male	597	54%
	Female	504	46%
<b>Child's Dental Insurance</b>	Denti-Cal	974	86%
	Healthy Families	10	1%
	Cash	48	4%
	Private Insurance	59	5%
	Other	11	1%
<b>Language of Family</b>	English	349	32%*
	Spanish	179	16%*
	Cantonese	17	0.2%*
<b>Race</b>	Other Hispanic	249	23%*
	African American	148	13%*
	Caucasian	115	10%*
	Asian	87	8%*
	Mexican American	89	8%*

\* Not all patients reported language and race.

Figure 1: AIM 1 Follow-up attendance rates, N=1102



## AIM 1 DISCUSSION

The purpose of the AIM 1 chart review was to describe the current patient population attending the UCSF Pediatric Dentistry clinic and assess the 6-month POE appointment attendance rate of these patients. The results showed that the baseline 6-month POE appointment attendance rate of 35.5% at the UCSF Pediatric Dentistry was lower than that seen in other high-risk patient populations.<sup>27</sup> Geography may play a role in patient follow up as those patients who have to travel long distances to reach a health care clinic may have less frequent visits.

These differences in POE appointment attendance rates may also be attributed to differences in patient insurance, as it has been demonstrated that patients paying cash or having private insurance have higher follow-up rates than those on Medicaid.<sup>31</sup> On average, the UCSF patient population is 90% Denti-Cal insured, which may have contributed to the lower follow-up rates.

The primary limitation of these results was not knowing why parents did not bring their children back for a POE appointment at the UCSF Pediatric Dentistry Clinic. At this clinic, the schedule is not open 6 months in advance therefore scheduling constraints could be a reason for parents not returning. Having to see multiple providers rather than being able to schedule an appointment with the same provider could be another reason. Dissatisfaction with treatment received could also contribute to the decision not to return. Without being able to directly ask parents, the exact reasons for not bringing their children back for the 6-month POE visits remains unknown and warrants further investigation.

The significance of determining the baseline POE appointment attendance rate for the UCSF Pediatric Dentistry Clinic is that this rate may now be used for comparison with other pediatric clinics and patient populations, and for evaluating the effectiveness of this study's AIM 2 intervention, where appointment reminders and educational information are sent by text messages to parents.

## **AIM 2: TEXT MESSAGE STUDY**

## MATERIALS AND METHODS

### **Screening and Enrollment**

All participants were recruited from the population of patients seen at the UCSF Pediatric Dentistry Clinic at 707 Parnassus Ave., San Francisco, California. Parents of children presenting for dental care were screened for entry into the study based on the following inclusion and exclusion criteria.

The inclusion criteria were as follows:

- Parent/guardian of a child age 1-6 years who presents to the UCSF Pediatric Dentistry Clinic as a new patient
- Parent/guardian wants child to return to UCSF Pediatric Dentistry Clinic for comprehensive dental care
- Parent/guardian is willing to participate and receive text messages from UCSF Pediatric Dentistry Clinic
- Parent/guardian is able to give written informed consent and complete questionnaire in English or Spanish
- Parent/guardian has a personal cell phone

The exclusion criteria were as follows:

- Child has another primary dental home and does not plan to return to UCSF for care after dental treatment is completed
- Parent/guardian will be leaving the area and not available for POE exams
- Child is medically-compromised (ASA III or higher)

If the child and parent/guardian met the inclusion criteria, study personnel explained the study and obtained informed consent prior to enrollment into the study (Appendix F).

Following enrollment, parents then completed a baseline dental knowledge questionnaire (Appendix H), which obtained demographic information, oral hygiene and diet practices, as well as text message preferences and usage.

### **Comprehensive Oral Examination (COE) Visit - Time 0**

The COE appointment represents Time 0. Following the completion of this comprehensive oral examination of the new patient, parent/child pairs were randomized to either control or experimental groups based on computer-generated random numbers. Those in the experimental group received appointment reminders and oral health information by text messages every 3 weeks at variable times, a text message reminder to schedule their 6-month POE and a personal phone call 1-2 days prior to the appointment with a voice mail message left if no-one answered. The control group received appointment reminders by the conventional system with a post-card followed by a personal phone call 1-2 days prior to the appointment and a voice mail message was left if necessary. No supplemental educational information was given to the control group outside of the clinic setting.

### **First Six-Month Periodic Oral Evaluation (POE) - Time 24 weeks**

This 6-month POE visit is the standard of care for all patients seen at the UCSF Pediatric Dentistry Clinic and is not a study-specific visit. The child returned in 6 months for a

POE visit at which time a dental exam, cleaning (prophylaxis) and fluoride varnish treatment was performed. Additionally, at this time oral hygiene (brushing and flossing) and diet was discussed with the parent and child. Due to scheduling constraints and parent preference, this visit may have occurred between 5-8 months after the COE. A post-questionnaire (Appendix I) was given to all parents to determine their dental knowledge. If the parent did not keep the 6-month POE appointment, they received a letter in the mail informing them of the failed appointment. If the parent did not subsequently schedule the 6-month POE appointment, the current protocol was followed and no further attempt was made by UCSF Pediatric Dentistry Clinic to schedule this appointment.

The primary outcome measured for this study was attendance at the 6-month POE visit. The secondary outcome was change in parental dental knowledge from baseline to the 6-month POE visit.

### **Text Messages**

The experimental group received text messages every 3-weeks following the date at which the COE was completed. The messages sent were age-appropriate educational information directed at the parents (Appendix F, G).

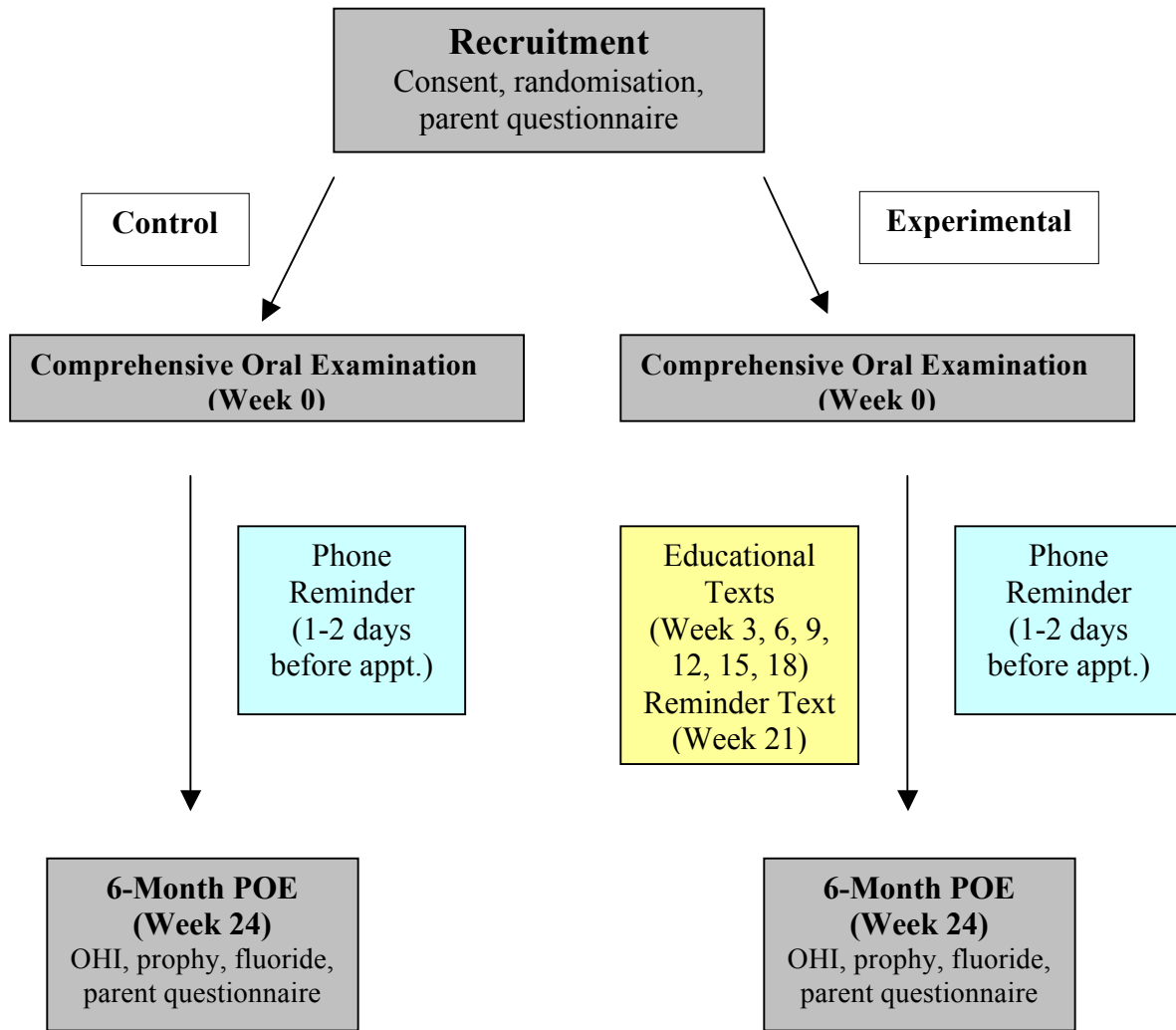
A total of eight messages were sent to the experimental group on the following schedule:

- Enrollment text message at 1-2 days after COE
- Educational text at weeks 3, 6, 9, 12, 15, 18
- Reminder text to schedule 6-month POE appointment at week 21



The content of the educational text messages addressed topics such as oral hygiene, non-cariogenic diet, caries prevention and fluoride. All messages were limited to 160 characters, in order to be sent as one standard size text message (Appendix H).

FIGURE 2: STUDY FLOW DIAGRAM



#### STATISTICAL ANALYSIS

Descriptive statistics were used to summarize the demographic data of the participants such as frequencies and proportions for demographic variables.

Depending on the scale of the measurement, demographics data and questionnaire items were compared between groups using chi-square test, Fisher's exact test, Wilcoxon rank sum test and t-test. All statistical tests were made at 0.05 significance level.

The sample size was calculated at .80 power with a significance level of 0.05 (two tailed). The detectable difference is 0.2 in attendance rate: 0.3 in one group and 0.1 in another group, where the average attendance rate  $\pi = 0.2$ .

$$n_i = Z_{1-\alpha/2}^2 \pi(1-\pi) + Z_{1-\beta}^2 \pi_1(1-\pi_1) + \pi_2(1-\pi_2) = 1.96^2 \times 0.2 \times 0.8 + 0.84^2 (0.3 \times 0.7 + 0.1 \times 0.9)$$

$$.3 - 0.12 = 62 / \text{group}$$

Then the total sample size  $N = 62 \times 2 = 124$  participants.

Pilot study enrolled 26 patient/parent groups and 22 completed the study.

Drop – out rate =  $26/22 = 15\%$

Therefore in order to account for the dropout rate and to have 124 patients complete the study I will have to increase my sample size by 15%.

$$124 \times 15\% = 18.6 \sim 19$$

Sample size =  $124 + 19 = 143$  total participants

In AIM 2, results for dental knowledge, oral hygiene and diet practices, as well as text message preferences and usage both before and after education, were analyzed with descriptive statistics.

## AIM 2 RESULTS

A total of 759 comprehensive examinations were performed at the UCSF Pediatric Dentistry clinic during the study period. Of these patients 143 parent-child pairs were screened for enrollment into Aim 2. Of those, 95 were enrolled in the study and 43 completed the study (Figure 3). The two main exclusion criteria for parents-child pairs were parents declining to participate in the study and patients presenting to UCSF for a one-time only dental treatment (Table 2).

Table 2: Participants excluded from Aim 2 based on criteria

	Number
Parent unable to read and write in English	6
Patient was ASA III	7
Parent declined to participate	22
Parents do not receive free text messages	4
Sibling was in the study	1
At UCSF Pediatric Dentistry for treatment only	8
<b>Total Number</b>	<b>48</b>

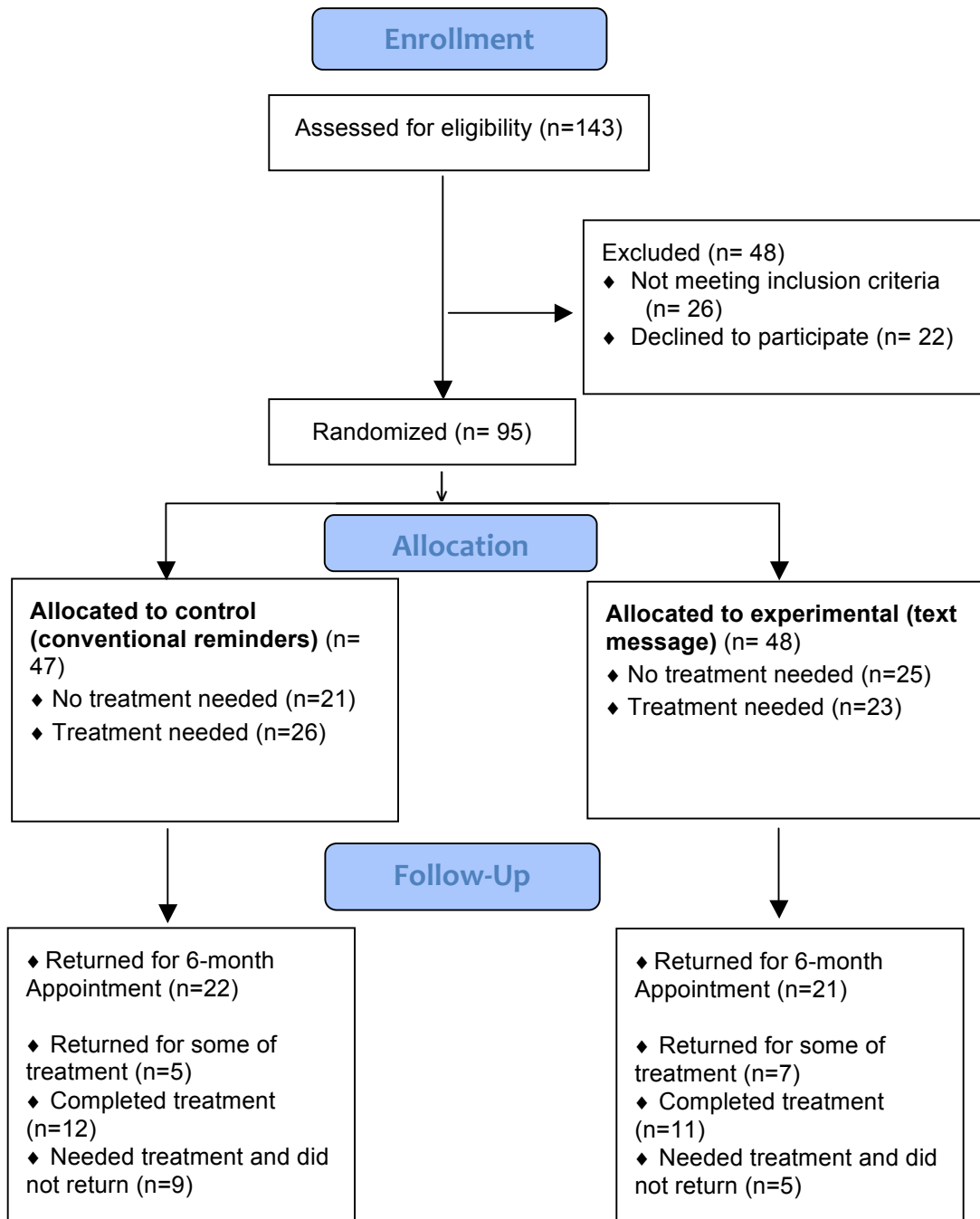
Additional reasons for not participating were parents travelling and not wanting to receive text messages from UCSF at that time, not wanting text messages at all and preferring communication from health care providers via email.

Of the 95 parent-child pairs enrolled into the study, only 43 pairs returned for the 6-month POE. Of the 43 pairs that returned for their POE, 6 parents were inadvertently not

given a 6-month post-questionnaire by the resident who provided care to the patient.

Two of these patients were in the control group and four were in the experimental group.

Figure 3: AIM 2 Study Enrollment and Participation Diagram, N=95



The majority (46%) of parents who participated in the study were aged 30-39 years (control group: 32.5±5.9, range 18-45 years; experimental group: 33.4±8.3, range 20-56 years). Most families spoke English at home (75%). The average distance that the parent-child traveled to get to UCSF from home was 9 miles, as calculated by home zip code (SD- 14.3, Median-3.1, range 1.1 – 89.6 miles). Seventy-six percent of parents travelled less than 10 miles to get to UCSF.

The majority of children in the study were less than 2 years of age (control group: 2.9±1.7, range 1-6 years; experimental group: 2.6±1.3, range 0-6 years). The predominant race for the children in this study was Hispanic (38%) and Asian (22%). Most of the children had government dental insurance, either Denti-Cal or Healthy Kids (99%), and 1 patient had private insurance.

Table 3: Aim 2 Demographics, N=95

	Total N=95	Control N=47	Experimental N=48
<b>Parent Age</b>			
20-29 years	27 (28%)	13	14
30-39 years	44 (46%)	22	22
40-49 years	14 (15%)	7	7
<b>Age of Child</b>			
<1 year old	1	0	1
1 year old	24 (25%)	15	9
2 years old	24 (25%)	10	14
3 years old	16 (17%)	4	12
4 years old	15 (16%)	7	8

<b>5 years old</b>	10 (11%)	7	3
<b>6 years old</b>	5 (5%)	4	1
<b>Child Race</b>			
<b>Hispanic</b>	36 (38%)	16	20
<b>Black</b>	17 (18%)	11	6
<b>Asian</b>	21 (22%)	9	12
<b>Arab</b>	6 (6%)	2	4
<b>Caucasian</b>	9 (10%)	5	4
<b>Unknown/Mixed</b>	6 (6%)	4	2
<b>Child's Dental Insurance</b>			
<b>Denti-Cal</b>	92 (97%)	45	47
<b>Healthy Kids</b>	2 (2%)	2	0
<b>Blue Cross</b>	1 (1%)	0	1
<b>Preferred Language</b>			
<b>English</b>	71 (75%)	34	37
<b>Spanish</b>	24 (25%)	13	11
<b>Distance to UCSF</b>			
<b>0-10 miles</b>	72 (76%)	37	35
<b>11-20 miles</b>	14 (15%)	5	9
<b>21-30 miles</b>	3 (3%)	3	0
<b>31-40 miles</b>	3 (3%)	2	1
<b>41-50 miles</b>	2 (2%)	1	1
<b>&gt;51 miles</b>	2 (2%)	0	2

## REMINDER PREFERENCES

Table 4: Parents Most Preferred Reminder Method, N=37

		Total N=37	Control Group N=20	Experimental Group N=17
<b>#1 Preference for Reminder</b>	Text Message	10 (27%)	4	6
	Phone Call	22 (60%)	15	7
	Email	1 (3%)	1	0
	Postcard	3 (8%)	0	3
	Other	0	0	0
	None	1 (3%)	0	1

Table 5: Text Message Utilization, N=37

		Total N=37	Control Group N=20	Experimental Group N=17
<b>Received text messages?</b>	Yes	17 (46%)	1	16
	No	20 (54%)	19	1
	Do not know	0 (0%)	0	0
		N=17	N=1	N=16
<b>Read text messages?</b>	Always	16(94%)	1	15
	Sometimes	0	0	0
	Rarely	0	0	0
	Never	1(6%)	0	1
<b>Did you use information in text message?</b>	Always	11(30%)	1	10
	Sometimes	4(11%)	0	4
	Rarely	0	0	0
	Never	2(5%)	0	1

At the 6-month POE, participants answered questions regarding the text messages sent. Sixteen participants in the experimental group stated that they received the text message reminders and educational information and 15 of them “always” read the information

from the message. One participant responded that they “never” read the message. Ten participants reported “always” using the information from the messages to help care for their child’s teeth, four participants reported “sometimes” using the information and two participants reported “never” using this information. One control group subject reported receiving text messages and “always” reading and using the messages, despite no texts being sent to the control group.

#### DENTAL KNOWLEDGE

A questionnaire to assess baseline dental knowledge of parents in the study was given. The same questionnaire was repeated at the 6-month POE appointment and answers for both the experimental and control groups are presented in Table 6.

Table 6: Aim 2 Dental Knowledge, Baseline N= 95 and 6-Month POE N= 37

Dental Knowledge		Baseline N= 95	6 Month Control N=20	6 Month Exp N=17	P- value
<b>Child’s teeth brushed?</b>	Never	1	0	0	0.2648
	Some, not daily	8	3	0	
	1x/day	23	3	5	
	2x/day	53	14	12	
	> 2x/day	10	0	0	
<b>Fluoride toothpaste?</b>	Yes	56	17	13	0.8340
	No	18	1	2	
	Don’t know	21	2	2	
<b>Adult helps child brush?</b>	No	6	0	0	<b>0.0217</b>
	Yes, some	30	11	3	



	Yes, mostly	15	3	2	
	Yes, always	43	6	12	
	Do not know	1	0	0	
<b>How often child eating sweet foods?</b>	Never	6	1	0	0.8459
	1x/week-not	31	11	7	
	1x/day	28	6	7	
	2x/day	11	1	2	
	3x/day	12	1	1	
	4+x/day	4	0	0	
	Do not know	3	0	0	
<b>How often child drinking sweet liquids?</b>	Never	12	4	0	0.2419
	1x/week-not	22	9	9	
	1x/day	31	5	6	
	2x/day	14	1	1	
	3x/day	8	0	0	
	4+x/day	6	0	1	
	Do not know	2	1	0	
<b>Frequency of visits if child at high caries?</b>	As needed	4	1	0	0.9456
	Every 12	2	0	0	
	Every 6 months	38	8	9	
	Every 3 months	31	8	6	
	Do not know	20	3	2	
<b>What age can child brush alone?</b>	1-2 yr	15	1	1	0.6079
	3-4 yr	31	7	2	
	5-6 yr	25	7	6	
	7 yrs or older	20	5	8	
	Don't know	4	0	0	
<b>What child drinks when thirsty?</b>	Milk	13	2	2	1.0000
	Juice	4	1	0	

	Water	78	17	15
	Soda	0	0	0

There was a statistically significant difference between the two groups when asked about adult supervision during brushing at the 6-month POE appointment compared to baseline ( $p = 0.0217$ ). There was a trend of more frequent brushing in the experimental group when compared to the control group, however, this was not statistically significant ( $p = 0.2648$ ). With regards to the questions relating to their child eating and drinking a high cariogenic diet, frequency of dental appointments if their child has a high caries rate, and use of fluoridated toothpaste, there were no significant changes between the answers given at the baseline and 6-month POE appointments.

#### APPOINTMENT ATTENDANCE

Another outcome of AIM 2 was to assess participants' attendance rates at their 6-month POE appointments after the child was seen for their COE appointment (Table 7). The 6-month POE appointment attendance rates were very similar between the control and experimental groups, with the control group attendance rates slightly higher at 47% compared to the 44% for the experimental group. However this difference was not statistically significant ( $p = 0.8378$ ). Both of these attendance rates were higher than the historical post-op attendance rate of 36% discovered in AIM 1, however this difference was not statistically significant ( $p = 0.0526$ ) - Figure 1.

Table 7: 6-Month POE Appointment Attendance Rates, N=95

		Control Group N=47	Experimental Group N=48	p- value
<b>6-Month POE</b>	YES	22 (47%)	21 (44%)	0.8378
<b>Attendance</b>	NO	25	27	
<b>POE Delay in Months</b>		1.90	1.05	0.1694

Table 7 also shows the average delay in appointment scheduling between the two groups. On average, the subjects in the control group returned almost 2 months later than their 6-month POE appointment was supposed to be scheduled, while the experimental group returned 1 month later for the same appointment. However, this difference was not statistically significant. Figure 4 illustrates the scheduling delay in months for the two groups.

Figure 4: 6-Month POE appointment delay in Months, N=43

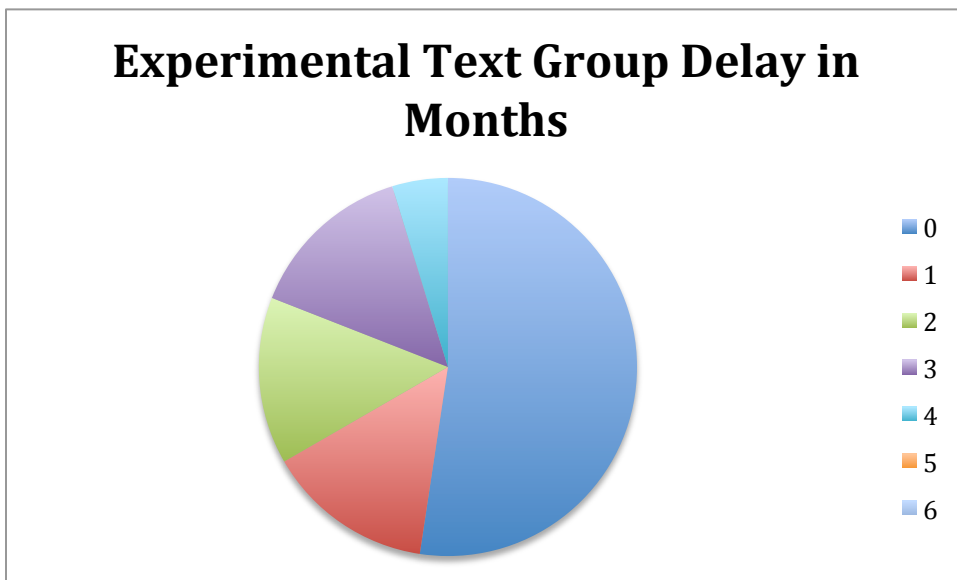
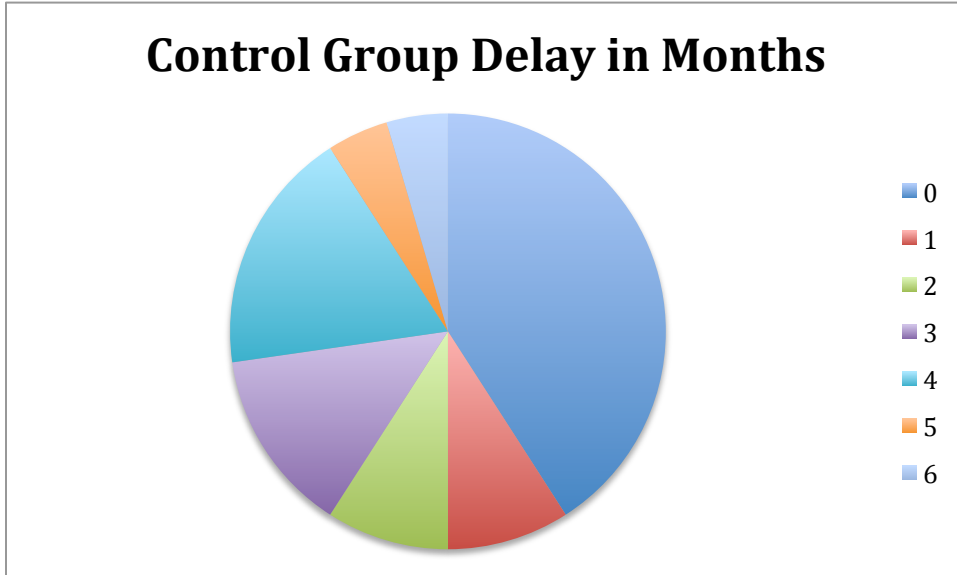
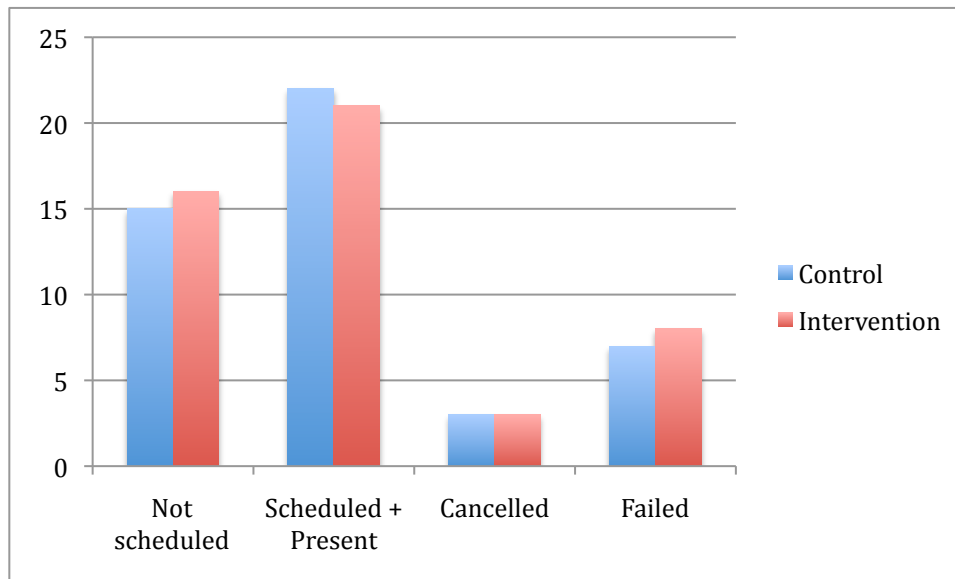


Figure 5: 6-Month POE appointment status, N=95



There were equivalent amounts of not scheduled, cancelled and failed appointments in the control and experimental groups (Figure 5).

## AIM 2 DISCUSSION

The increase in dental caries in children of age 2-5 years previously described has now begun to decline.<sup>4,29,30</sup> While this trend is promising, dental caries continues to be one of the most common infectious diseases in children, affecting 5-8 times more children than childhood asthma.<sup>3</sup> Novel methods of improving oral hygiene, diet practices and encouraging low income parents to bring their children to preventive dental appointments need to be continuously researched.

The purpose of AIM 2 was to determine for parents whose children have presented to the UCSF Pediatric Dentistry clinic for a COE if using a text message reminder system

increased follow-up attendance at 6-month POE appointments more than using the conventional phone reminder system. Overall, the attendance rate was higher for both control and text groups compared to the attendance rate for POE appointments in the previous calendar year ( $p = 0.0526$ ). Although the phone call group had increased POE appointment attendance (47%) over the text message group (44%), it was not statistically significant ( $p=0.8378$ ). These results were similar to the study by Nelson et al., which showed that there was a lower no-show rate in the phone call group in a study completed in a university pediatric population.<sup>25</sup> However, in the Nelson study the intervention was only a reminder message for an already scheduled upcoming appointment in the clinic, whereas in this study, reminder text messages were sent to schedule the POE appointment and oral health educational test messages were sent to participants in the experimental group. The most significant issue with the study design for AIM 2 is that participants had to call in to the UCSF clinic at a later date to schedule the 6-month POE, because the appointment was not made upon completion of their COE appointment. Unfortunately, 33% of the participants did not call UCSF to schedule this appointment (Figure 5). This was a significant limitation to the study design and future research should examine the effect of having an appointment scheduled for the 6-month POE upon the completion of the COE, with reminders sent to keep this appointment.

Participants may have been discouraged from calling UCSF to schedule the 6-month POE because of encountering difficulty when contacting the reception office for the clinic, either being placed on hold or the participants finding it hard to reach a staff member to make an appointment. Also, if they did not call when they received the prompt to

schedule the 6-month POE visit and waited a few weeks, due to the wait time in the clinic schedule, they may have been scheduled outside the study “window” to be considered a 6-month POE.

When participants returned for the 6-month POE visit, they were asked to complete a questionnaire identical to the baseline questionnaire regarding dental knowledge and home habits. There was a statistically significant difference for experimental group participants indicating more adult supervision while brushing the child’s teeth at the 6-month POE visit compared to the control group participants ( $p = 0.0217$ ). However, other variables were relatively unchanged between the groups, and due to the small sample size definitive conclusions can not be made about the effect of the educational messages sent by text message to the participants. When looking at individual results for the questionnaire, 3 participants were able to correctly answer all questions at their 6-month POE. These 3 participants were in the experimental group. Overall, there was improvement in oral health knowledge in both groups in most of the categories.

Participants’ preferred method of appointment reminder was an important finding in this study. At the 6-month POE, only 6 out of 17 participants in the experimental group indicated text messaging as their preferred method. The control group had 15 out of 20 participants prefer phone call, four prefer text message and one prefer email reminders. When participants were recruited, they had to be scheduled with mock appointments in order to receive text messages through the automated text messaging software. One participant in the experimental group was mistakenly not assigned a mock appointment

and therefore did not receive text messages, while one parent in the control group stated receiving messages even though s/he was not scheduled with mock appointments. A previous study using text messaging in the health field addressed whether text messages sent to the patient are impersonal.<sup>25</sup> Overall, there was positive feedback from the experimental group who reported that they received the text messages, with just one parent stating that s/he did not read the messages. Only two parents reported that they never used the information in the text messages. However, even though our study found phone calls to be the most preferred method of communication, it also found that parents in the experimental group were more likely to prefer text messages as an appointment reminder compared to parents in the control group.

There are limitations to the results of AIM 2 due to the small sample size of this pilot study, particularly with regards to the small number of parents returning for the 6-month POE. Ninety-five subjects were recruited for the study compared to the 143 subjects that were calculated for the sample size of AIM 2. This was in part due to the resident researchers' inability to be present in clinic for all the COEs that occurred during the recruitment phase of the study. The resident researchers at this teaching institution have other clinical obligations and could not solely focus on study recruitment. Another unexpected difficulty with recruitment for participants in AIM 2 was that many of the parents screened did not speak or understand English or Spanish. Future studies should address this population of Chinese-speaking parents by including text messages and consent forms translated into Chinese.



The comparison of the responses of the questionnaire was performed between 95 subjects who initially presented for the COE and 37 subjects who returned for their POE and were given a survey. The low 6-month POE return rate of 43 of 95 (45%) was similar to the 36% POE attendance rate found during the year prior to initiating this study ( $p = 0.0526$ ). Six subjects were inadvertently not given the surveys, four from the experimental group and two from the control group. This occurred because the resident researchers could not be present at all the patients' POE appointments. Even though multiple reminders were put in place for other residents to give the surveys when the parents returned for the patient's POE, 6 surveys were accidentally not given to the parents. Since the POE sample size was small to begin with, this loss of additional survey data could have significantly impacted the results.

Finally, those participants who returned for the 6-month POE could perhaps be more responsible and knowledgeable about their children's oral health than those who didn't return, which may have influenced the findings. Although the results did not show statistically significant differences due to the small sample size in all the categories, observations and trends in the data were established.

## CONCLUSION

Text message technology is fast becoming an important method of communication with patients and their families. The results of this study show that both phone and text

messages reminders can be used in a university pediatric dental population to increase attendance at 6-month POE visits. The attendance rates at the 6-month POE appointments were slightly higher for the phone call group. Overall, attendance rates for both groups were higher than the historical attendance rates at this clinic however, due to the small sample size of this study, the difference was not statistically significant.. In regards to texting oral health information, this study found statistically significant improvement in parents reporting adult supervision during brushing their children's teeth in the experimental group compared to the control group.

Parents participating in this study accepted receiving text message reminders. However, phone calls were the most preferred appointment scheduling reminder method for the participants who returned for their POEs. Positive feedback was received from participants in the experimental group showing that the participants who returned were receiving, reading and using the information provided through text messages.

Future research should be directed towards enrolling a larger sample size of participants, studying the influence of text messages on the patient's clinical measures of oral health, including Chinese-speaking participants, and to determine for those parents who did not return for the 6-month POE the reasons behind why they did not return to the clinic.

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## APPENDIX A: AIM 2 CHR APPROVAL



### Human Research Protection Program Committee on Human Research

#### Notification of Expedited Review Approval

*Principal Investigator*  
Susan Hyde

*Co-Principal Investigator*

**Type of Submission:** Initial Review Submission Packet

**Study Title:** Does Text Messaging Oral Health Information and Appointment Scheduling Reminders Improve Appointment Attendance, Dental Knowledge, and Oral Health at the UCSF Pediatric Dental Clinic?

**IRB #:** 13-11998

**Reference #:** 076517

**Committee of Record:** Parnassus Panel

**Study Risk Assignment:**

**Approval Date:** 02/11/2014

**Expiration Date:** 02/10/2017

**Regulatory Determinations Pertaining to this Approval:**

**This research satisfies the following condition(s) for the involvement of children:**

45 CFR 46.404, 21 CFR 50.51: Research not involving greater than minimal risk.

**Parental Permission and Assent:**

The permission of one parent or guardian is sufficient.

Individual Research HIPAA Authorization is required of all subjects. Use the Permission to Use Personal Health Information for Research form.

A waiver of HIPAA Authorization is acceptable for the recruitment procedures to identify potential subjects. The recruitment procedures involve routine review of medical or other records, do not adversely affect the rights and welfare of the individuals, and pose minimal risk to their privacy, based on, at least, the presence of the following elements: (1) an adequate plan to protect the identifiers from improper use and disclosure; (2) an adequate plan to destroy the identifiers at the earliest opportunity consistent with conduct of the research, or a health or research justification for retaining the identifiers was provided or such retention is otherwise required by law; (3) adequate written assurances that the requested information will not be reused or disclosed to any other person or entity, except as required by law, for authorized oversight of the research study, or for other research for which the use or disclosure of the requested information would be permitted by the Privacy Rule; (4) the research could not practicably be conducted without the waiver; and (5) the research could not practicably be conducted without access to and use of the requested information.

## APPENDIX B: AIM 2 INFORMED CONSENT

### UNIVERSITY OF CALIFORNIA, SAN FRANCISCO CONSENT TO PARTICIPATE IN A RESEARCH STUDY

**Study Title:** Does Text Messaging Oral Health Information and Appointment Scheduling Reminders Improve Appointment Attendance, Dental Knowledge, and Oral Health at the UCSF Pediatric Dental Clinic?

This is a research study about sending appointment reminder messages and other dental health information by text message. The study researchers, Amita Ruehe DDS., Neha Das DDS., and Susan Hyde DDS. MPH. PhD, from the UCSF Dental Clinic, will explain this study to you.

Research studies include only people who choose to take part. Please take your time to make your decision about participating, and discuss your decision with your family or friends if you wish. If you have any questions, you may ask the researchers.

You are being asked to take part in this study because you are a parent of a child who is enrolling as a new patient in the UCSF Pediatric Dentistry Clinic.

#### **Why is this study being done?**

The purpose of this study is to evaluate whether sending text messages with appointment reminders and dental information to parents of children who are patients at the UCSF Pediatric Dentistry Clinic helps to improve future dental outcomes.

#### **How many people will take part in this study?**

194 parents will take part in this study.

#### **What will happen if I take part in this research study?**

**First,** you will be asked some questions today to find out if you can participate in the study.

To be in this study:

- Your child must be a new patient at the UCSF Pediatric Dentistry Clinic.
- You must have a personal cell phone.
- You are willing to participate and receive text messages from UCSF Pediatric Dental Clinic.
- You plan to return to UCSF Pediatric Dental Clinic for dental check-ups.
- You can read and write in English or Spanish.

**If you are eligible for the study and you choose to continue, this is what will happen next:**

- Study researchers will explain this study to you and you will be able to ask questions about this study.
- You will be asked to complete a questionnaire about your dental knowledge, beliefs and habits. This will take approximately 15 minutes.
- A study researcher will examine your child's teeth and write down the number of cavities that are present.
- You will be randomized into one of two study groups described below.  
Randomization means that you are put into a group by chance. A computer program will place you in one of the two groups. Neither you nor your doctor can choose the group you will be in. You will have an equal chance of being placed in either group.
  - **If you are in Group 1**, you will not receive text messages
  - **If you are in Group 2**, you will receive text messages about once a month with educational information and a reminder to schedule your child's 6-month dental cleaning and exam appointment.

**Group 1:** After the first study visit, your child will continue to be seen at the UCSF Pediatric Dentistry Clinic as necessary. If your child requires dental treatment, you will schedule these appointments at our clinic and you will receive phone call reminders for these appointments.

These phone calls will happen on the following schedule:

- Reminder (phone-call) 1-2 days before 6-month exam appointment

**Group 2:** After the first study visit, your child will continue to be seen at the UCSF Pediatric Dentistry Clinic as necessary. If your child requires dental treatment, you will schedule these appointments at our clinic and you will receive phone call reminders for these appointments. In addition, you will begin to receive text messages with dental health information and a reminder to schedule your child's 6-month dental check up.

These phone calls or text messages will happen on the following schedule:

- Educational text messages at weeks 3, 6, 9, 12, 15, and 18 of the study
- Reminder to schedule the 6-month exam appointment 21 weeks after the COE
- Reminder (phone-call) 1-2 days before the scheduled 6-month exam appointment
- At the first 6-month visit you will be asked to complete an additional questionnaire
- Repeated educational text messages at weeks 3, 6, 9, 12, 15 and 18 following the first 6-month exam appointment
- Reminder to schedule the second 6-month exam appointment 21 weeks after the first 6-month exam
- Reminder (phone-call) 1-2 days before the scheduled 6-month exam appointment
- At the second 6-month visit a study researcher will examine your child's teeth and write down the number of cavities that are present.

All appointments and exams are the standard of care and are not specific to this study. This study ends following the second 6-month visit. (Total of 12 months)



- Study location: All these procedures will be done at the UCSF Pediatric Dental Clinic at 707 Parnassus Ave. and the Ambulatory Surgery Center at 400 Parnassus Ave., San Francisco CA.

### **How long will I be in the study?**

You will be asked to participate for 12 months after your child's first dental visit. You will return for any treatment your child needs during this study. You will also return for two 6-month exams, cleanings and fluoride treatments. After the second 6-month visit, you will have completed your participation in this study.

### **Can I stop being in the study?**

Yes. You can decide to stop at any time. Just tell the study researcher or staff person right away if you wish to stop being in the study. Also, the study researcher may stop you from taking part in this study at any time if he or she believes it is in your best interest, if you do not follow the study rules, or if the study is stopped.

### **What side effects or risks can I expect from being in the study?**

- A computer will assign your child to a treatment group (either phone calls or text messages) by chance. The treatment your group receives may be less effective than the other group.
- By agreeing to receive 8-10 text messages in this study, you may have an additional charge to your cell phone plan if you do not have unlimited text messages as part of your plan.
- Your child's dental treatment will not be affected by your participation in this study.
- For more information about risks and side effects, ask one of the researchers.

### **Are there benefits to taking part in the study?**

There may or may not be a direct benefit from participating. One group will receive additional dental educational information by text messages that may help your child have better dental health and fewer cavities. We also hope that the information learned may allow health professionals to help other parents and their children prevent tooth decay.

### **What other choices do I have if I do not take part in this study?**

You are free to choose not to participate in the study. If you decide not to take part in this study, there will be no penalty to you and you will receive the same care with only reminder phone calls and not receive text messages. You will not lose any of your regular benefits, and you can still get your care from our institution the way you usually do.

## **Will information about me be kept private?**

We will do our best to make sure that the personal information gathered for this study is kept private. However, we cannot guarantee total privacy. Your personal information may be given out if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

## **What are the costs of taking part in this study?**

You will not be charged to participate in this study. The study will not cover your child's dental treatment costs. You will be responsible for dental treatment costs (if they are not covered by insurance). By agreeing to receive text messages in this study, you may have an additional charge to your cell phone plan for each text message received if you do not have unlimited text messages as part of your plan.

## **Will I be paid for taking part in this study?**

You will not be paid for taking part in this study.

## **What are my rights if I take part in this study?**

Taking part in this study is your choice. You may choose either to take part or not to take part in the study. If you decide to take part in this study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you in any way. You will not lose any of your regular benefits, and you can still get your care from our institution the way you usually do.

## **Who can answer my questions about the study?**

You can talk to the researcher(s) about any questions, concerns, or complaints you have about this study. Contact the researcher(s) Dr. Susan Hyde, Dr. Neha Das or Dr. Amita Ruehe at (415) 476-3276 or (415) 476-6011.

If you wish to ask questions about the study or your rights as a research participant to someone other than the researchers or if you wish to voice any problems or concerns you may have about the study, please call the Office of the Committee on Human Research at (415) 476-1814.

## **CONSENT**

You have been given a copy of this consent form to keep. You will be asked to sign a separate form authorizing access, use, creation, or disclosure of health information about you.

**PARTICIPATION IN RESEARCH IS VOLUNTARY.** You have the right to decline to be in this study, or to withdraw from it at any point without penalty or loss of benefits to which you are otherwise entitled.

If you wish to participate in this study, you should sign below.

---

Date

---

Participant's Signature for Consent

---

Date

---

Person Obtaining Consent

## APPENDIX C: SPANISH INFORMED CONSENT

### UNIVERSIDAD DE CALIFORNIA, SAN FRANCISCO CONSENTIMIENTO PARA PARTICIPAR EN UN ESTUDIO DE INVESTIGACIÓN

**Título del estudio:** ¿Los mensajes de texto con información sobre la salud oral y recordatorios de citas mejoran la asistencia de la cita, conocimiento dental y la salud oral de la UCSF Odontología Pediátrica Clínica?

Esto es un estudio de investigación sobre el envío de mensajes del recordatorio de cita y otra información de la salud dental por el mensaje de texto. Los investigadores de estudio, Amita Ruehe DDS, Neha Das DDS, y Susan Hyde DDS, MPh, PhD, de la Clínica Dental UCSF, le explicará este estudio.

Estudios de investigación incluyen solamente las personas que decidan tomar parte. Por favor, tómese su tiempo para tomar su decisión sobre la participación y discutir su decisión con su familia o amigos, si lo desea. Si tiene alguna pregunta, puede preguntar a los investigadores.

Se le ha pedido a tomar parte en este estudio debido a que usted es el padre de un niño que se inscribe como un nuevo paciente en la UCSF Odontología Pediátrica Clínica.

#### **¿Por qué se está haciendo este estudio?**

El propósito de este estudio es evaluar si enviar mensajes de texto con recordatorios de cita e información dental a padres de niños que son pacientes en la Clínica de la Odontología Pediátrica UCSF ayuda a mejorar futuros resultados dentales.

#### **¿Cuántas personas participarán en este estudio?**

194 padres participarán en este estudio.

#### **¿Qué pasará si participo en este estudio de investigación?**

**Primero**, le harán algunas preguntas hoy para averiguar si puede participar en el estudio.

Estar en este estudio:

- El niño debe ser un nuevo paciente en la Clínica de la Odontología Pediátrica UCSF.
- Debe tener un teléfono celular personal.
- Quiere participar y recibir mensajes de texto de la Clínica Dental Pediátrica UCSF.
- Planea volver a la Clínica Dental Pediátrica UCSF para chequeos dentales.
- Puede leer y escribir en inglés o español.

**Si es elegible para el estudio y decide seguir, esto es lo que pasará después:**

- Los investigadores de estudio le explicarán este estudio y será capaz de hacer preguntas sobre este estudio.
- Le pedirán completar un cuestionario sobre su conocimiento dental, creencia y hábitos. Esto tomará aproximadamente 15 minutos.
- Un investigador de estudio examinará los dientes de su hijo y anotará el número de caries que están presentes.
- Se aleatorizará en uno de dos grupos de estudio descritos abajo. La randomización significa que se pone en un grupo por casualidad. Un programa de ordenador le colocará en uno de los dos grupos. Ni usted ni su doctor pueden elegir el grupo en el cual estará. Tendrá una posibilidad igual de colocar en el uno o el otro grupo.
  - **Si está en el Grupo 1**, no recibirá mensajes de texto
  - **Si está en el Grupo 2**, recibirá mensajes de texto sobre una vez al mes con la información educativa y un recordatorio para programar la limpieza dental de 6 meses de su hijo y la cita del examen.

**Grupo 1:** Después de la primera visita de estudio, su hijo continuará a ser visto en la Clínica de la Odontología Pediátrica UCSF si es necesario. Si su hijo requiere el tratamiento dental, programará estas citas en nuestra clínica y recibirá recordatorios de llamada telefónica para estas citas.

Estas llamadas telefónicas se encontrarán con el horario siguiente:

- Recordatorio (llamada telefónica) 1-2 días antes de cita del examen de 6 meses

**Grupo 2:** Después de la primera visita de estudio, su hijo continuará a ser visto en la Clínica de la Odontología Pediátrica UCSF si es necesario. Si su hijo requiere el tratamiento dental, programará estas citas en nuestra clínica y recibirá recordatorios de llamada telefónica para estas citas. Además, comenzará a recibir mensajes de texto con la información de la salud dental y un recordatorio para programar el cheque dental de 6 meses de su hijo.

Estas llamadas telefónicas o mensajes de texto va a suceder en el siguiente horario:

- Mensajes de texto educativos en semanas 3, 6, 9, 12, 15, y 18 del estudio
- Recordatorio para programar la cita del examen de 6 meses 21 semanas después del nuevo examen paciente
- Recordatorio (llamada telefónica) 1-2 días antes de la cita del examen de 6 meses prevista
- En la primera visita de 6 meses le pedirán completar un cuestionario

- adicional
- Mensajes de texto educativos repetidos en semanas 3, 6, 9, 12, 15 y 18 después de primera cita del examen de 6 meses
- Recordatorio para programar la segunda cita del examen de 6 meses 21 semanas después del primer examen de 6 meses
- Recordatorio (llamada telefónica) 1-2 días antes de la cita del examen de 6 meses prevista
- En la segunda visita de 6 meses un investigador de estudio examinará los dientes de su hijo y anotará el número de cavidades que están presentes.

Todas las citas y los exámenes son el estándar de cuidado y no son específicos para este estudio. Este estudio finaliza después de segunda visita de 6 meses. (Total de 12 meses)

- Estudio ubicación: Todos estos procedimientos se harán en la Clínica Dental Pediátrica UCSF en 707 Parnassus Ave. y el Centro de la Cirugía Ambulatorio en 400 Parnassus Ave, San Francisco CA.

### **¿Cuánto tiempo estaré en el estudio?**

Le pedirán participar durante 12 meses después de la primera visita dental de su hijo. Devolverá para cualquier tratamiento sus necesidades del niño durante este estudio. También volverá para dos exámenes de 6 meses, limpiezas y tratamientos del fluoruro. Después de la segunda visita de 6 meses, habrá completado su participación en este estudio.

### **¿Puedo dejar de estar en el estudio?**

Sí. Puede decidir pararse en cualquier momento. Sólo diga al investigador de estudio o persona de personal en seguida si desea dejar de estar en el estudio. También, el investigador de estudio le puede parar de participar en este estudio en cualquier momento si él o ella creen que está en sus intereses, si no sigue las reglas de estudio, o si el estudio se para.

### **¿Qué efectos secundarios o riesgos puedo esperar de estar en el estudio?**

- Un ordenador asignará a su hijo a un grupo de tratamiento (llamadas telefónicas o mensajes de texto) por casualidad. El tratamiento que su grupo recibe puede ser menos eficaz que el otro grupo.
- Consintiendo en recibir 8-10 mensajes de texto en este estudio, puede tener un suplemento a su plan del teléfono celular si no tiene mensajes de texto ilimitados como la parte de su plan.
- El tratamiento dental de su hijo no será afectado por su participación en este estudio.
- Para más información sobre riesgos y efectos secundarios, pregunte a uno de los investigadores.

### **¿Hay beneficios de tomar parte en el estudio?**

Puede haber o no un beneficio directo para la participación en el estudio. Un grupo recibirá más información sobre la educación dental por medio de mensajes de texto que pueden ayudar a que su hijo tenga una mejor salud dental y menos caries. También esperamos que la información aprendida puede permitir que los profesionales de la salud para ayudar a otros padres y sus hijos prevenir la caries dental.

### **¿Qué otras opciones tengo si no participo en este estudio?**

Es libre de decidir no participar en el estudio. Si decide no participar en este estudio, no habrá ninguna pena a usted y recibirá el mismo cuidado con sólo llamadas telefónicas del recordatorio y no recibirá mensajes de texto. No perderá ninguna de sus ventajas regulares, y todavía puede conseguir su cuidado de nuestra institución de la manera por lo general hace.

### **¿Va la información sobre mí guardarse privada?**

Haremos todo lo posible asegurarnos que la información personal juntada para este estudio se guarda privada. Sin embargo, no podemos garantizar la intimidad total. Su información personal se puede presentar de ser requerido según la ley. Si la información de este estudio se publica o se presenta en reuniones científicas, su nombre y otra información personal no se usarán.

### **¿Cuáles son los gastos de participación en este estudio?**

No se ordenará que participe en este estudio. El estudio no cubrirá los gastos de tratamiento dentales de su hijo. Será responsable de gastos de tratamiento dentales (si no son cubiertos por el seguro). Consintiendo en recibir mensajes de texto en este estudio, puede tener un suplemento a su plan del teléfono celular para cada mensaje de texto recibido si no tiene mensajes de texto ilimitados como la parte de su plan.

### **¿Pagarán por mí participar en este estudio?**

No pagarán por participar en este estudio.

### **¿Cuáles son mis derechos si participo en este estudio?**

La participación en este estudio es su opción. Puede decidir participar o no participar en el estudio. Si decide participar en este estudio, puede dejar el estudio en cualquier momento. Pase lo que pase decisión que hace, no habrá ninguna pena a usted de ningún modo. No perderá ninguna de sus ventajas regulares, y todavía puede conseguir su cuidado de nuestra institución de la manera por lo general.

### **¿Quién puede contestar a mis preguntas sobre el estudio?**

Se puede dirigir al investigador(es) sobre cualquier pregunta, preocupaciones o quejas que tiene sobre este estudio. Póngase en contacto con los investigadores Dr. Susan Hyde, la Dr. Neha Das o la Dr. Amita Ruehe al (415) 476-3276 o (415) 476-6011.

Si desea hacer preguntas sobre el estudio o sus derechos como un participante de investigación a alguien además de los investigadores o si desea expresar algún problema o preocupaciones puede tener sobre el estudio, por favor llame la Oficina del Comité de la Investigación Humana al (415) 476-1814.

## **CONSENTIMIENTO**

Le han dado una copia de esta forma de consentimiento para guardar. Le pedirán firmar un acceso de autorización de la forma separado, uso, creación o revelación de la información de salud sobre usted.

LA PARTICIPACIÓN EN LA INVESTIGACIÓN ES VOLUNTARIA. Tiene el derecho de rehusar estar en este estudio o retirarse de ello a cualquier punto sin pena o pérdida de ventajas a las cuales por otra parte tiene derecho. Si desea participar en este estudio, debería firmar abajo.

\_\_\_\_\_  
Fecha

\_\_\_\_\_  
Firma del Participante de consentimiento

\_\_\_\_\_  
Fecha

\_\_\_\_\_  
Persona que obtiene consentim

APPENDIX D: ENGLISH PERMISSION FOR PERSONAL HEALTH  
INFORMATION

IRB Approval Number 13-11998

**University of California**  
**Permission to Use Personal Health Information for Research**

Study Title (or IRB Approval Number if study title may breach subject's privacy):

Does Text Messaging Oral Health Information and Appointment Scheduling Reminders Improve Dental Recall Attendance Rates and Oral Health at the UCSF Pediatric Dental Clinic?

---

Principal Investigator: Amita Ruehe, DDS., Neha Das, DDS. Sponsor/Funding Agency (if funded): None

**A. What is the purpose of this form?**

State and federal privacy laws protect the use and release of your health information. Under these laws, the University of California San Francisco (UCSF) or your health care provider cannot release your health information to the research team unless you give your permission. The research team includes the researchers and people hired by the University or the sponsor to do the research. If you decide to give your permission and to participate in the study, you must sign this form, as well as the Consent Form. This form describes the different ways that the researcher, research team and research sponsor may use your health information for the research study. *The research team will use and protect your information as described in the attached Consent Form. Once your health information is released it may not be protected by these privacy laws and might be shared with others. However, other laws protecting your confidentiality may still apply. If you have questions, please ask a member of the research team.*

**B. What Personal Health Information will be released?**

If you give your permission and sign this form, you are allowing Dr. Ruehe/Dr. Das to release the following medical records containing your Personal Health Information. Your Personal Health Information includes health information in your medical records and information that can identify you. For example, Personal Health Information may



include your name, address, phone number or social security number.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Entire Medical Record     | <input type="checkbox"/> Radiology Reports                 | <input type="checkbox"/> Laboratory Reports        |
| <input type="checkbox"/> Outpatient Clinic Records | <input type="checkbox"/> Radiology Images                  | <input type="checkbox"/> Psychological Tests       |
| <input type="checkbox"/> Progress Notes            | <input type="checkbox"/> Diagnostic Imaging Reports        | <input checked="" type="checkbox"/> Dental Records |
| <input type="checkbox"/> Consultations             | <input type="checkbox"/> Operative Reports                 | <input type="checkbox"/> Discharge Summaries       |
| <input type="checkbox"/> History & Physical Exams  | <input type="checkbox"/> Pathology Reports                 | <input type="checkbox"/> Health Care Billing       |
| <input type="checkbox"/> EKG                       | <input type="checkbox"/> Emergency Medicine Center Reports |  |
| <input type="checkbox"/> Other: _____              |  |  |

**C. Do I have to give my permission for certain specific uses?**

Yes. The following information will only be released if you give your specific permission by putting your initials on the line(s).

- \_\_\_\_\_ I agree to the release of information pertaining to drug and alcohol abuse, diagnosis or treatment.
  - \_\_\_\_\_ I agree to the release of HIV/AIDS testing information.
  - \_\_\_\_\_ I agree to the release of genetic testing information.
  - \_\_\_\_\_ I agree to the release of information pertaining to mental health diagnosis or treatment as follows:
- 

**D. How will my Personal Health Information be used?**

Your Personal Health Information may be released to these people for the following purposes:

1. To the research team for the research described in the attached Consent Form;
2. To others at UC who are required by law to review the research;
3. To others who are required by law to review the quality and safety of the research, including: U.S. government agencies, such as the Food and Drug Administration, the research sponsor or the sponsor's representatives, or government agencies in other countries. These organizations and their representatives may see your Personal Health Information. They may not copy or take it from your medical records unless permitted or required by law.

### **E. How will my Personal Health Information be used in a research report?**

If you agree to be in this study, the research team may fill out a research report. (This is sometimes called a “case report”.) The research report will **not** include your name, address, or telephone or social security number. The research report may include your date of birth, initials, dates you received medical care, and a tracking code. The research report will also include information the research team collects in the study. The research team and the research sponsor may use the research report and share it with others in the following ways:

1. To perform more research;
2. Share it with researchers in the U.S. or other countries;
3. Place it into research databases;
4. Use it to improve the design of future studies;
5. Use it to publish articles or for presentations to other researchers;
6. Share it with business partners of the sponsor; or
7. File applications with U.S. or foreign government agencies to get approval for new drugs or health care products.

### **F. Does my permission expire?**

This permission to release your Personal Health Information expires when the research ends and all required study monitoring is over. Research reports can be used forever.

### **G. Can I cancel my permission?**

You can cancel your permission at any time. You can do this in two ways. You can write to the researcher or you can ask someone on the research team to give you a form to fill out to cancel your permission. If you cancel your permission, you may no longer be in the research study. You may want to ask someone on the research team if canceling will affect your medical treatment. If you cancel, information that was already collected and disclosed about you may continue to be used. Also, if the law requires it, the sponsor and government agencies may look at your medical records to review the quality or safety of the study.

## H. Signature

If you agree to the release and use of your Personal Health Information, please sign below. You will be given a signed copy of this form.

---

\_\_\_\_\_  
Name of Subject (print)

---

\_\_\_\_\_  
Signature of Subject

---

\_\_\_\_\_  
Date

**Note: if the subject is a minor, an individual signing with an “X”, an adult incapable of giving consent, or is unable to read the authorization, fill out and attach the “special signatures” page (sections “I” and “J”).**

University of California  
Permission to Use Personal Health Information for Research

**SPECIAL SIGNATURES PAGE**

**I. If the subject is a minor, or an individual signing with an “X”, or an adult incapable of giving consent (where IRB approved), the legally authorized representative or witness signs here:**

Name of Legally Authorized Representative or Witness to the “X” (print)	Relationship to the Subject
Signature of Representative or Witness	Date

**J. If the subject is unable to read the authorization, the translator or reader and a witness sign here:**

I have accurately and completely read this Authorization to \_\_\_\_\_ (subject’s name) in \_\_\_\_\_ (language), the subject’s primary language. **The subject has verbally affirmed his/her Authorization to me and to the witness.**

Name of Translator or Reader (print)	
Signature of Translator or Reader	Date



APPENDIX E: AIM 2 SPANISH PERMISSION FOR PERSONAL HEALTH  
INFORMATION

**Universidad de California**  
**Permiso para Usar Información de Salud Personal para Investigación**

Study Title (or IRB Approval Number if study title may breach subject's privacy ):  
13-11998

Sponsor/Funding Agency (if funded):  
\_\_\_\_\_

**A. ¿Cual es el propósito de este formulario?**

Las leyes estatales y federales de privacidad protegen el uso y la publicación de los datos sobre la salud de usted. Bajo estas leyes, ni la Universidad de California ni su proveedor de asistencia médica puede difundir sus datos de salud al equipo de investigación sin su permiso. El equipo de investigación incluye los investigadores y las personas empleados por la Universidad o por el patrocinador para hacer la investigación. Si usted decide dar su permiso y participar en el estudio, usted tiene que firmar este formulario tanto como el Formulario de Consentimiento. Este formulario describe las diferentes maneras en que el investigador, el equipo de investigación y el patrocinador de la investigación pueden utilizar sus datos de salud para el estudio de investigación. El equipo de investigación usará y protegerá sus datos tal como se describe en el Formulario de Consentimiento adjunto. Sin embargo, una vez divulgada la información de su salud, puede que no esté protegida por las leyes de privacidad y pudiera ser compartida con otros. Si tiene alguna pregunta diríjala a un miembro del equipo de investigación.

**B. ¿QUÉ INFORMACIÓN PERSONAL DE SALUD SE DIVULGARÁ?**

Si usted da su permiso y si firma este formulario, usted está permitiendo a \_\_\_\_\_ *[insert UC campus or name of health care provider(s) releasing medical records]* que comparta los siguientes expedientes médicos conteniendo su Información Personal de Salud. Su Información Personal de Salud incluye datos sobre su salud que se encuentran dentro de sus expedientes médicos e información que puede identificarle a usted. Por ejemplo, la Información Personal de Salud

puede incluir su nombre, su dirección, su número telefónico o número de seguro social.

- |                                       |                                    |                                     |
|---------------------------------------|------------------------------------|-------------------------------------|
| 🍏 Expediente médico completo          | 🍏 Reportes de Laboratorio          | 🍏 Reportes de Centros de Urgencias  |
| 🍏 Estados de Cuenta de cuidado médico | 🍏 Expedientes Dentales             | 🍏 Exámenes físicos                  |
| 🍏 Reportes de Patología               | 🍏 Reportes Quirúrgicos             | 🍏 Reportes de Imagen Diagnóstica    |
| 🍏 Electrocardiograma                  | 🍏 Reportes de Radiología           | 🍏 Consultas                         |
| 🍏 Notas de Progreso                   | 🍏 Imágenes de Resonancia Magnética | 🍏 Expedientes Clínicos Ambulatorios |
|                                       | 🍏 Resumen del Alta                 | 🍏 Exámenes Psiquiátricos            |
- 🍏 Otros (describa) \_\_\_\_\_

### C. ¿Tengo que dar mi permiso para algún uso específico?

Sí. La siguiente información solamente será divulgada si usted específicamente da su permiso al escribir sus iniciales sobre la(s) línea(s).

- \_\_\_\_\_ Consiento a la divulgación de datos pertinentes al diagnóstico o tratamiento de abuso de alcohol o de drogas.
- \_\_\_\_\_ Consiento a la divulgación de datos de la prueba de VIH/SIDA.
- \_\_\_\_\_ Consiento a la divulgación de datos sobre estudios genéticos.
- \_\_\_\_\_ Consiento a la divulgación de datos pertinentes al diagnóstico o tratamiento de salud mental de acuerdo con lo siguiente:

\_\_\_\_\_.

### D. ¿De qué manera será utilizada mi información personal de salud?

Su información personal de salud puede divulgarse a estas personas por las razones siguientes:

4. Al equipo de investigación descrita en el Formulario de Consentimiento adjunto.
5. A otras personas en la Universidad de California quienes por ley se requiere que revisen la investigación.
6. A otras personas o entidades con la obligación legal de examinar la calidad y la eficacia de la investigación, incluyendo: Agencias del gobierno de los Estados Unidos, tales como la "FDA" (Dirección de Alimentos y Medicamentos), el patrocinador de la investigación o los representantes del patrocinador, o agencias gubernamentales en otros países. Estas organizaciones y sus representantes pueden ver su Información de Salud Personal. Ellos no pueden fotocopiarla ni sacarla de su expediente médico a menos que sea permitida o mandada por la ley.

**E. ¿De qué manera será utilizada mi información personal de salud en un reporte de investigación?**

Si usted consiente participar en este estudio, el equipo de investigación puede llenar un reporte de investigación. (Esto a veces se llama un “reporte de caso.”) El reporte de investigación **no** incluirá su nombre, dirección, número telefónico, ni su número de seguro social. El reporte de investigación puede incluir su fecha de nacimiento, las iniciales de su nombre, las fechas cuando recibió atención médica y un código de seguimiento. El reporte también incluirá datos que el equipo de investigación recaba para el estudio. El equipo investigativo y el patrocinador de la investigación pueden utilizar el reporte de investigación y compartirlo con otros de las siguientes maneras:

8. Para llevar a cabo más investigación;
9. Compartirla con otros investigadores en los Estados Unidos u otros países;
10. Colocarla dentro de fondos de datos investigativos;
11. Utilizarla para mejorar el diseño de estudios en el futuro;
12. Utilizarla para publicar artículos o para presentar a otros investigadores;
13. Compartirla con socios del patrocinador; o
14. Entregar solicitudes con los Estados Unidos o con agencias de otros gobiernos para obtener autorización para nuevas drogas o nuevos productos de cuidado de salud.



### **F. ¿Se vence mi permiso?**

Este permiso para divulgar su Información Personal de Salud se vence cuando se acaba la investigación y cuando se haya terminado todo el monitoreo. Los reportes de investigación pueden ser usados para siempre.

### **G. ¿Puedo cancelar mi permiso?**

Usted puede cancelar su permiso en cualquier momento. Esto lo puede hacer de dos maneras. Usted puede escribir al investigador o puede pedir que alguien del equipo de investigación le dé un formulario para llenar para cancelar su permiso. Si usted rescinde su permiso, puede ser que ya no podrá participar en el estudio de investigación. Tal vez usted debiera preguntar a alguien del equipo de investigación si al cancelar se le afecta su tratamiento médico. Si usted cancela, cualquier información que ya había sido recabada y divulgada se podrá continuar usando. Además, si la ley lo requiere, las agencias gubernamentales y patrocinadoras pueden continuar teniendo acceso a sus expedientes médicos para revisar la calidad o la seguridad del estudio..

### **H. Firma**

Si usted está de acuerdo con el uso y la divulgación de su Información Personal de Salud, por favor firme a continuación. Usted recibirá una copia firmada de este formulario.

\_\_\_\_\_  
Nombre del Participante (letra de molde)

\_\_\_\_\_  
Firma del Participante

\_\_\_\_\_  
Fecha

**H. Si el participante es menor de edad, o si es un individuo firmando con una “X”, o un adulto incapaz de dar su consentimiento (en casos autorizados por el IRB), el representante o testigo legalmente autorizado firma aquí:**

\_\_\_\_\_  
Nombre del Representante Legalmente Autorizado o del Testigo a la marca “X” (letra de molde)

\_\_\_\_\_  
Parentesco con el Participante

Firma del Representante o Testigo

Fecha

**H. Si el participante es incapaz de leer la autorización, el traductor o lector y un testigo firman aquí:**

Yo he leído completamente y con exactitud a \_\_\_\_\_ (nombre del participante) en \_\_\_\_\_ (idioma), el idioma principal del participante. **El participante ha declarado su Autorización a mí y al testigo.**

\_\_\_\_\_  
Nombre del Traductor o Lector (letra de molde)

\_\_\_\_\_  
Firma del Traductor o Lector

\_\_\_\_\_  
Fecha

\_\_\_\_\_  
Nombre del Testigo (letra de molde)

\_\_\_\_\_  
Firma del Testigo

\_\_\_\_\_  
Fecha

## APPENDIX F: AIM 2 ENGLISH TEXT MESSAGES

### **Text Messages (<140 Characters Each)**

#### Week 3

Children need help brushing their teeth until age 6 or 7 – an adult should always help the child brush in the morning & at night

#### Week 6

Your child is sweet enough! Give your child tap water when they are thirsty. Sweet drinks like juice contain sugar and cause cavities

#### Week 9

Please use a smear of fluoride toothpaste when brushing your child's teeth – it makes their teeth strong and helps prevent cavities

#### Week 12

Brushing alone does not clean teeth well. Flossing once a day is very important to clean plaque and prevent cavities in between teeth

#### Week 15

Tooth healthy snacks are cheese, veggies & nuts. Avoid starchy/sticky snacks like chips, cookies & crackers that cause cavities

#### Week 18

Please remember to brush your child's teeth after they snack! When this is not possible, have your child rinse their mouth with water

#### Week 21

Dental check ups are very important! Your child is due for theirs in 3 weeks. Please call 4154763276 to schedule an appointment

## APPENDIX G: AIM 2 SPANISH TEXT MESSAGES

### **Text Messages (<140 Characters Each)**

#### Semana 3

Los niños necesitan ayuda cepillarse los dientes hasta la edad de 6 o 7. Un adulto debe siempre ayudar a que el niño se cepilla en la mañana y noche

#### Semana 6

Su hijo es lo suficientemente dulce. Déle a su hijo agua del grifo cuando tenga sed. Bebidas dulces como jugo tienen azúcar y causan caries.

#### Semana 9

Utilice un poco de pasta con fluoruro cuando se cepilla los dientes de su niño – hace los dientes fuertes y ayuda a prevenir las caries

#### Semana 12

El cepillado solo no limpia dientes bien. Necesita pasar hilo dental una vez al día para limpiar la placa y prevenir caries entre dientes

#### Semana 15

Queso, verduras y nueces son bocadillos saludables para los dientes. Bocados amiláceos/pegajosos como patatas fritas y galletas causan caries.

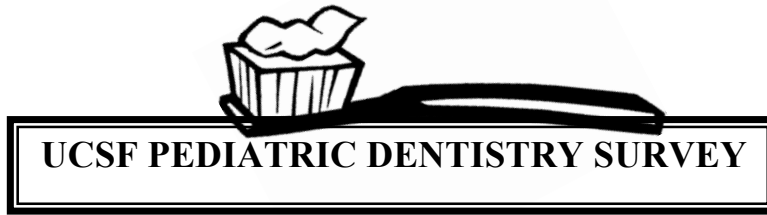
#### Semana 18

Por favor cepille los dientes de su niño después de que come bocadillos! Cuando esto no es posible, su hijo puede enjuagar su boca con agua

#### Semana 21

Cheques dentales son muy importantes! Su hijo es debido para suyo en 3 semanas. Por favor llame 415-476-3276 para programar una cita

APPENDIX H: AIM 2 ENGLISH BASELINE QUESTIONNAIRE



**Do you have another dentist or dental clinic for your child's dental care, other than UCSF?**

- Yes  No

**How often are your child's teeth brushed?**

- Never  
 Sometimes, but not every day  
 Once a day  
 Twice a day  
 More than twice a day  
 Don't know

**When your child's teeth are brushed, is fluoride toothpaste used?**

- Yes  No  Don't know

**Do you or another adult help your child brush his or her teeth?**

- No, my child brushes alone  
 Yes, sometimes  
 Yes, most of the time  
 Yes, always  
 Don't know

**How often does your child eat sweet or sugary *foods* (for example candy, cookies, donuts, ice cream)?**

- Never  
 At least once per week, but not every day  
 Once a day  
 Twice a day  
 Three times a day  
 Four or more times a day  
 Don't know

**How often does your child have sweet or sugary *drinks* (for example juice, soda pop, Kool-Aid, Gatorade, Coke, lemonade, chocolate milk)?**

- Never
- At least once per week, but not every day
- Once a day
- Twice a day
- Three times a day
- Four or more times a day
- Don't know
- 

**If your child is at high risk for getting cavities, how often should they come to UCSF for a check up and fluoride treatment?**

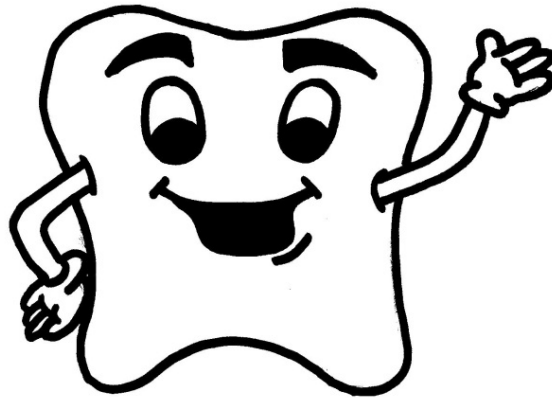
- Only when they have a problem
- Every 12 months
- Every 6 months
- Every 3 months
- Don't know
- 

**At what age can a child brush his/her teeth by himself/herself?**

- 1-2 year old
- 3-4 years old
- 5-6 years old
- 7 years old or older
- Don't know
- 

**What should you give your child to drink when s/he is thirsty? Choose the best answer.**

- Milk
- Juice
- Water
- Soda
- Don't know
- 



APPENDIX I: AIM 2 SPANISH BASELINE QUESTIONNAIRE



**UCSF PEDIATRIC DENTISTRY SURVEY**

**¿Tiene otro dentista o clínica dental para el cuidado dental de su hijo, además de UCSF?**

- Si  No

**¿Con qué frecuencia se cepillan los dientes de su hijo?**

- Nunca  
 A veces, pero no cada día  
 Una vez al día  
 Dos veces al día  
 Mas de dos veces al día  
 No se

**¿Cuándo se cepillan los dientes de su hijo, se usa la pasta de dientes con fluoruro?**

- Si  No  No se

**¿Usted u otro adulto ayuda su hijo cepillar sus dientes?**

- No, mi hijo se cepilla solo  
 Si, a veces  
 Si, casi todo el tiempo  
 Si, todo el tiempo  
 No se

**¿Cuántas veces come su hijo alimentos dulces o azucarados (por ejemplo, dulces, galletas, donas, helados)?**

- Nunca.  
 Por lo menos una vez por semana, pero no todos los días  
 Una vez al día  
 Dos veces al día  
 Tres veces al día  
 Cuatro o mas veces al día  
 No se



**¿Con qué frecuencia tiene su hijo bebidas dulces o azucaradas (jugo de ejemplo, estallido de soda, Kool-Aid, Gatorade, Coca Cola, limonada, chocolate con leche).**

- Nunca.
- Por lo menos una vez por semana, pero no todos los días
- Una vez al día
- Dos veces al día
- Tres veces al día
- Cuatro o mas veces al día
- No se

**¿Si su hijo está en alto riesgo para conseguir caries, con qué frecuencia deberían venir a UCSF para un control(cheque) y tratamiento del fluoruro?**

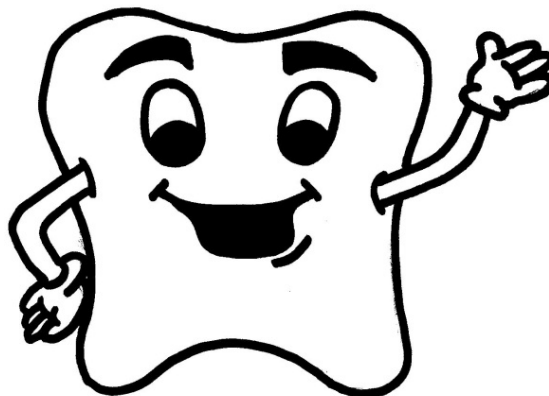
- Sólo cuando tienen un problema
- Cada 12 meses
- Cada 6 meses
- Cada 3 meses
- No se

**¿A qué edad puede un niño cepillar sus/sus dientes solos?**

- 1-2 años de edad
- 3-4 años de edad
- 5-6 años de edad
- 7 años de edad o mas
- No se

**¿Qué es lo que debería dar a su hijo a beber cuando él o ella tiene sed? Elija la mejor respuesta.**

- Leche
- Jugo
- Agua
- Soda
- No Se





**UCSF PEDIATRIC DENTISTRY SURVEY**  
**6 Month Questionnaire**

**Do you have another dentist or dental clinic for your child's dental care, other than UCSF?**

- Yes  No

**How often are your child's teeth brushed?**

- Never  
 Sometimes, but not every day  
 Once a day  
 Twice a day  
 More than twice a day  
 Don't know

**When your child's teeth are brushed, is fluoride toothpaste used?**

- Yes  No  Don't know

**Do you or another adult help your child brush his or her teeth?**

- No, my child brushes alone  
 Yes, sometimes  
 Yes, most of the time  
 Yes, always  
 Don't know

**How often does your child eat sweet or sugary *foods* (for example candy, cookies, donuts, ice cream)?**

- Never  
 At least once per week, but not every day  
 Once a day  
 Twice a day  
 Three times a day  
 Four or more times a day  
 Don't know

**How often does your child have sweet or sugary *drinks* (for example juice, soda pop, Kool-Aid, Gatorade, Coke, lemonade, chocolate milk)?**

- Never
- At least once per week, but not every day
- Once a day
- Twice a day
- Three times a day
- Four or more times a day
- Don't know
- 

**If your child is at high risk for getting cavities, how often should they come to UCSF for a check up and fluoride treatment?**

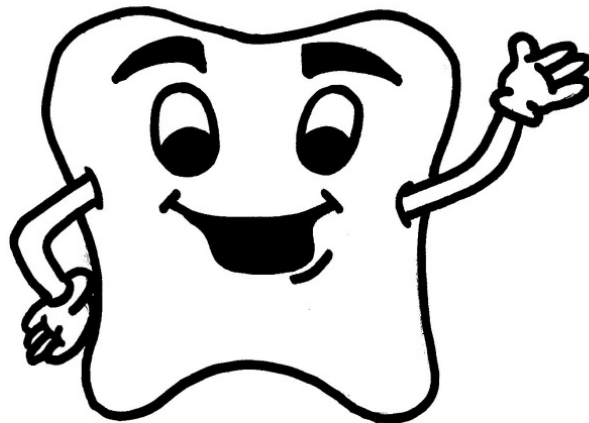
- Only when they have a problem
- Every 12 months
- Every 6 months
- Every 3 months
- Don't know
- 

**At what age can a child brush his/her teeth by himself/herself?**

- 1-2 year old
- 3-4 years old
- 5-6 years old
- 7 years old or older
- Don't know
- 

**What should you give your child to drink when s/he is thirsty? Choose the best answer.**

- Milk
- Juice
- Water
- Soda
- Don't know
- 



**How do you prefer most to be reminded for your child's dental appointments?**

- Text message
- Phone call
- Email
- Postcard
- Other (Please describe: \_\_\_\_\_)
- I do not want a reminder

**Did you receive text messages from UCSF Pediatric Dental Clinic about caring for your child's teeth?**

- Yes
- No
- Don't know

*\*If no, please skip the last two questions\**

**Did you *read* the text messages that were sent to you from UCSF Pediatric Dental Clinic about caring for your child's teeth?**

- Always
- Sometimes
- Rarely
- Never

**Did you use the information that was sent to you in the text messages to help you care for your child's teeth?**

- Always
- Sometimes
- Rarely
- Never

***Thank you for your participation!***

APPENDIX K: AIM 2 SPANISH 6-MONTH QUESTIONNAIRE



**UCSF PEDIATRIC DENTISTRY SURVEY**  
**6 Month Questionnaire**

**¿Tiene otro dentista o clínica dental para el cuidado dental de su hijo, además de UCSF?**

- Sí  No

**¿Con qué frecuencia se cepillan los dientes de su niño?**

- Nunca  
 A veces, pero no todos los días  
 Una vez al día  
 Dos veces al día  
 Mas de dos veces al día  
 No sé

**¿Cuándo se cepillan los dientes de su hijo, se usa la pasta de dientes con fluoruro?**

- Sí  No  No sé

**¿Usted o otro adulto ayuda su hijo cepillar sus dientes?**

- No, mi hijo se cepilla solo  
 Sí, a veces  
 Sí, casi todo el tiempo  
 Sí, todo el tiempo  
 No sé

**¿Con qué frecuencia su niño come alimentos dulces o azucarados (por ejemplo, dulces, galletas, donas, helado)?**

- Nunca  
 Por lo menos una vez por semana, pero no todos los días  
 Una vez al día  
 Dos veces al día  
 Tres veces al día  
 Cuatro o mas veces al día  
 No sé

**¿Con qué frecuencia toma su hijo bebidas dulces o azucaradas (por ejemplo jugo, soda, Kool-Aid, Gatorade, Coca Cola, limonada, chocolate con leche)?**

- Nunca
- Por lo menos una vez por semana, pero no todos los días
- Una vez al día
- Dos veces al día
- Tres veces al día
- Cuatro o mas veces al día
- No sé

**¿Si su hijo está en el alto riesgo para conseguir caries, con qué frecuencia deberían venir a UCSF para un chequeo y tratamiento del fluoruro?**

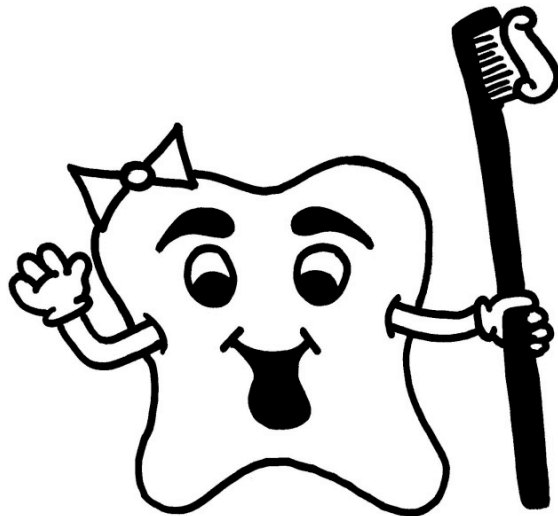
- Solamente cuando tienen problema
- Cada 12 meses
- Cada 6 meses
- Cada 3 meses
- No sé

**¿A qué edad puede un niño cepillar sus dientes solo/a?**

- 1-2 años de edad
- 3-4 años de edad
- 5-6 años de edad
- 7 o más años de edad

**¿Qué debería dar a su hijo para beber cuando tiene sed? Elija la mejor respuesta.**

- Leche
- Jugo
- Agua
- No sé
- Soda
- No sé



**¿Cómo prefiere más a ser recordado para citas dentales de su hijo?**

- Mensajes de texto
- Llamada
- Email
- Tarjeta postal
- Otro (Por favor, describa: \_\_\_\_\_)
- No quiero avisos

**Recibió mensajes de texto de UCSF Clínica Dental pediátrica sobre el cuidado de los dientes de su niño?**

- Sí  No  No sé

*\*Si su respuesta a la última pregunta es "no", por favor, no respondes a las dos preguntas siguientes\**

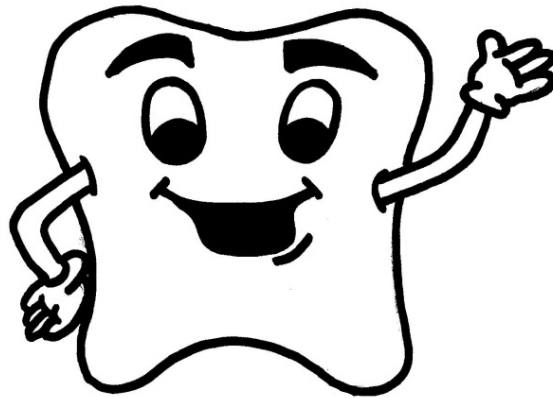
**¿Leyó los mensajes de texto que se enviaron a usted de la Clínica Dental Pediátrica UCSF sobre cuidando los dientes de su hijo?**

- Siempre
- A veces
- Raramente
- Nunca

**¿Usó la información que se le envió en los mensajes de texto para ayudar cuidar los dientes de su niño?**

- Siempre
- A veces
- Raramente
- Nunca

*¡Gracias por su participación!*

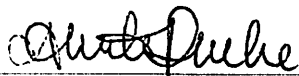


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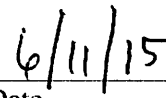
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