Child Abuse And Neglect: Assessment Of Pediatric Dentists, General Dentists And Oral Surgeons' Attitudes

BY

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THESIS
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# LIST OF ABBREVIATIONS

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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>AAPD</td>
<td>American Academy of Pediatric Dentistry</td>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<td>DCFS</td>
<td>Department of Children and Family Services</td>
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<td>GD</td>
<td>General Dentists</td>
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<tr>
<td>HPV</td>
<td>Human Papilloma Virus</td>
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<tr>
<td>ISDS</td>
<td>Illinois State Dental Society</td>
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<tr>
<td>ISOMS</td>
<td>Illinois Society of Oral Maxillofacial Surgeons</td>
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<tr>
<td>ISPD</td>
<td>Illinois Society of Pediatric Dentists</td>
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<tr>
<td>IRB</td>
<td>Institutional Review Board</td>
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<td>NCANDS</td>
<td>National Child Abuse and Neglect Data System</td>
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<tr>
<td>OS</td>
<td>Oral Surgeons</td>
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<tr>
<td>PD</td>
<td>Pediatric Dentists</td>
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<td>SD</td>
<td>Standard Deviation</td>
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SUMMARY

In all 50 states, dentists are mandated reporters of child maltreatment (abuse or neglect). Injuries to the head and neck region are the most common sites for abused children (7,26) and many cases of neglect have physical manifestations. These signs should be easily identifiable by dentists, however dentists contribute a low number of reports every year relative to other mandated reporters.

The purpose of this study was to compare the attitudes and self-reported knowledge of Pediatric Dentists (PDs), Oral Surgeons (OS), and General Dentists (GDs) in Illinois and to determine the factors which may influence their likelihood to report a suspected case of child maltreatment.

The mailing list was obtained from the Illinois Society of Pediatric Dentistry, the Illinois Society of Oral Maxillofacial Surgeons, and the Illinois State Dental Society. A survey and cover letter were mailed to the 746 subjects, and responses were not tracked. The participants were asked questions regarding demographics, educational experience, experience in reporting child maltreatment, attitudes about recognizing and reporting child maltreatment, and their decision on whether to report hypothetical cases of child abuse and neglect.

Data analysis revealed that PDs had significantly more experience in suspecting and reporting child maltreatment and in continuing education in child maltreatment than Oral Surgeons and General Dentists. There was no difference however between PDs, Oss, and GDs, and their decision to report the hypothetical cases of child abuse or child neglect. Confidence in recognizing child abuse or neglect predicted reporting the hypothetical cases. The belief that reporting child maltreatment could benefit the family in the long run predicted reporting the
hypothetical case of abuse. Participants who reported receiving continuing education on child maltreatment, reported more confidence in recognizing both child abuse and neglect. PDs were more likely than OSs and GDs to report confidence in recognizing child maltreatment (both abuse and neglect), knowledge about the protocol of reporting, and understanding the law on mandated reporting. They were also more likely to say that they have an equal role as other mandated reporters to report suspected cases of child maltreatment. Participants were more likely to suspect and report the hypothetical case of child abuse than the case of child neglect.

Although presenting hypothetical scenarios of child maltreatment may not completely mirror what a provider would do in a real situation, this study suggests that improving confidence may lead to improved reporting of child maltreatment by dentists.

Many factors influence a practitioners ability to suspect and decisions to report child maltreatment. Increasing knowledge about how to recognize child maltreatment through continuing education may increase the likelihood of a dentist to report suspicious cases. Dentists’ attitudes about how reporting child abuse can benefit a family in the long run may also be an important finding in this study which can help increase dentists’ role in preventing child maltreatment. Studies are needed in order to discover effective methods to educate dentists on recognizing child abuse and neglect and on understanding protocol of reporting. Futures studies may also help to understand the perceived barriers to recognizing and reporting and how to overcome these barriers.
I. INTRODUCTION

A. **Background**

The child abuse prevention and treatment act was passed in 1974 and most recently amended in December 2010. It provides a minimum definition of abuse and neglect as: “any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation, or an act or failure to act which presents an imminent risk of serious harm”. Most states recognize four types of maltreatment including: physical abuse, sexual abuse, emotional abuse and neglect. Based on the National Child Abuse and Neglect Data System (NCANDS), in 2011, neglect accounted for over 75% of reported cases and physical abuse accounted for over 15% of reported cases of abuse. Sexual abuse, psychological maltreatment, and ‘other’ accounted for the remaining cases. In total there were approximately 3.4 million referrals of suspected child maltreatment pertaining to 6.2 million children in the US (NCANDS).

There are seven groups who are mandated by law to report child maltreatment under specific circumstances as determined by each state. These groups include medical personnel, school personnel, social service/mental health personnel, law enforcement, medical examiner personnel, child care personnel and members of the clergy. In all 50 states, dentists are mandated reporters of child maltreatment. Injuries to the head and neck region are the most common sites for abused children (Cairns et al, 2005; Naidoo, 2000). These injuries should be easily identifiable by dentists, however many dentists in past studies have reported inability or unwillingness to report child abuse, even when they suspect it. . The Illinois Department of Children and Family service reported that in 2011, out of 62,225 reports by mandated reporters
of child maltreatment, only 24 were dentists (DCFS). Out of the 12,306 mandated medical personnel who made reports in 2011, dentists provided the lowest number of reports.

All clinicians who see children must be aware of signs of child maltreatment as well as the implications of not reporting abuse. There may be different factors which influence a clinician’s ability to recognize and their willingness to report child maltreatment. Identifying these issues could help to better prepare and educate dentists on how to treat a suspected case of child maltreatment.

B. Purpose

The purpose of this study is to compare the attitudes and self-reported knowledge of Pediatric Dentists (PDs), Oral Surgeons (OS), and General Dentists (GDs) and to determine the factors which may influence their likelihood to report a suspected case of child maltreatment.

C. Study Hypotheses

1) Pediatric Dentists are more likely than Oral Surgeons and General Dentists to have a history of reporting child maltreatment (child abuse or neglect).

2) Pediatric Dentists are more likely than Oral Surgeons and General Dentists to report the hypothetical case of child neglect.

3) Pediatric Dentists are more likely than Oral Surgeons and General Dentists to report the hypothetical case of child abuse.
4) The following factors are significantly related to the likelihood of a practitioner to report hypothetical cases of child neglect:
   a. CE on child abuse
   b. Experience in reporting child maltreatment
   c. Female practitioners
   d. Practitioners in urban settings
   e. Confidence and knowledge in diagnosing and reporting child maltreatment
   f. Less than 10 years in practice
   g. Children younger than 14 are >50% of patient population

5) The following factors are significantly related to the likelihood of a practitioner to report hypothetical cases of child abuse:
   a. CE on child abuse
   b. Experience in reporting child maltreatment
   c. Female practitioners
   d. Practitioners in urban settings
   e. Confidence and knowledge in diagnosing and reporting child maltreatment
   f. Less than 10 years in practice
   g. Children younger than 14 are >50% of patient population

6) Dentists that suspect hypothetical cases of abuse are more likely to report these cases than those that suspect hypothetical cases of neglect
II. REVIEW OF THE LITERATURE

A. **Introduction**

The focus of this literature review is to report research relevant to the reporting of child maltreatment by dental practitioners. To discuss the issue of reporting by dentists, it is essential to know the definition and signs of child maltreatment and to understand the important role that dentists play in recognizing these signs. Reviewing the common orofacial signs of child maltreatment can help to highlight the role that dentists play in reporting child maltreatment. Once the signs of child maltreatment are discussed, the existing literature on the role of mandated reporters and the knowledge and attitudes of dentists in reporting child abuse and neglect will be reviewed.

B. **Methods of Review**

The databases PubMed and Google Scholar were searched with a variety of search terms in various combinations: Dentists, Dental, Oral Surgeons, Pediatric Dentists, Child Neglect, Child Abuse, Reporting Child abuse, Head and Neck, Orofacial, Oral Signs, Child Maltreatment, Mandatory Reporting, and Oral injuries. The search was limited to English language, humans, papers published in the last 10 years, and papers with abstracts available. The search yielded 345 articles. From the searches, a review of abstracts showed that many papers were not relevant to the topic. Articles were excluded which did not pertain to the signs of child maltreatment which would be easily identified by dentists. Case reports and literature reviews were only used to extrapolate more relevant literature. Thirty-seven articles or websites were read and are listed under “Cited Literature”.
C. **Child Maltreatment Definition and Statistics**

The Child abuse prevention and treatment act provides a minimum definition of child abuse and neglect as: “Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm.” Most states have a minimum definition of neglect as the “failure of a parent or other person with responsibility for the child to provide needed food, clothing, shelter, medical care, or supervision to the degree that the child’s health, safety, and well-being are threatened with harm” (childwelfare.gov). The American Academy of Pediatric Dentistry goes further to define Dental Neglect as the “willful failure of parent or guardian to seek and follow through with treatment necessary to ensure a level of oral health essential for adequate function and freedom from pain and infection” (AAPD). As a dental health care provider it is imperative to understand these definitions as well as the prevalence of child maltreatment in order to recognize the gross underreporting which is taking place in the United States and in dental practices.

Every year the US department of Health and Human services releases data based on National Data Archive on Child Abuse and Neglect. The most recent document reports that in 2011, approximately 3.4 million allegations of child maltreatment were made to CPS agencies in the United States. Out of these referrals made to CPS, more than 75% suffered from neglect, while more than 15% were victims of abuse and less than 10% victims of sexual abuse. One fifth of children reported were considered to be victims while four fifths were concluded to be non-victims. The youngest children are considered the most vulnerable to maltreatment based on the yearly reports. Twenty percent of victims were in the age group 3–5 years. Of children suffering
from medical neglect, over one third was under three years old. Parents made up 81% of perpetrators (NCANDS).

In Illinois in 2011, over 25,000 children were listed as victims of maltreatment. In general, the percentage of victimization decreased with age with approximately 88% of victims under the age of 14 years old. Of all the reports made in Illinois, only 15% were made by medical personnel. Out of almost 83,000 reports made in Illinois in 2011, less than one percent were made by dentists, highlighting the low reporting levels of dentists (DCFS).

D. **Orofacial Signs of Child Maltreatment**

Orofacial signs and injuries are seen in over 50% of cases of child maltreatment according to several studies (Cairns et al, 2005; Naidoo, 2000). These signs can be a direct result of a physical abuse, or a result of neglect. Many large-scale retrospective studies have been conducted demonstrating this pattern and concluding that signs of child maltreatment are located where they are easily identifiable by a dentist during a normal dental exam.

Cairns et al completed a retrospective study of clinical records of children with suspected physical abuse over a 5 year period. A total of 390 medical records were available for review from Child protective services in Edinburgh, Scotland. The records showed that 59% of children had signs of abuse on the head, face or neck (Cairns et al, 2005). Cavalcanti obtained similar results in a review of forensic medical records over a 3 year period in Brazil. The study sample consisted of 1070 reports of children and adolescents age 0-17 years old. They found that 56% of victims had injuries to the head and face (Cavalcanti, 2010). In a retrospective record review at a children’s hospital in South Africa, head and neck and facial injuries were present in 67% of
cases of abuse. Preschool children were the most at risk followed by children 5-14 years old (Naidoo, 2000).

O’Donnell et al investigated the prevalence of maltreatment and assault related hospital admissions in Western Australian children and tried to determine what injuries and conditions were associated with these admissions. Like Naidoo, they found that maltreatment-related hospital admissions were predominately in children 0-6 years of age. In this study however, injuries to the head were found in just over one quarter of cases for maltreatment-related admissions which is a lower percentage than previous studies have reported (O’Donnell et al, 2010). In general, studies conclude that signs of abuse are frequently seen in the head and neck region.

Studies reported that intraoral injuries were found in 11-12% of children and adolescents with a history of abuse. Mouth injuries include bruised and lacerated lips and oral mucosa, torn frenula, bruised alveolar mucosa and avulsed teeth (Cavalcanti, 2010; Naidoo, 2000; Phillips and Van Der Heyde, 2006). Of intraoral injuries, 75-95% were soft tissue lacerations of lips and oral mucosa. (Cavalcanti, 2010; Naidoo, 2000). Injuries to the maxilla, mandible and tooth injuries are not as common as soft tissue lacerations. Many studies conclude that the percentages of intraoral signs are underreported due to the lack of dental professionals’ involvement in the initial evaluation in hospital settings (Naidoo, 2000).

Bruising and abrasions are the most common signs of abuse in the head and neck region (Cairns, 2005; Naidoo, 2000). Bruising in healthy children is common and often a sign of motor development. Although any part of the body is vulnerable to abuse, abusive bruising is generally seen away from bony prominences (Pierce et al, 2010; Maguire et al, 2007). The cheek, eyes,
ears, and lips are the most common facial sites of injury in cases of abuse (Naidoo, 2000; Phillips and Van Der Heyde, 2006). Characteristics predictive of abuse include bruising on the torso, ear, or neck for a child less than 4 years of age. Bruising of any kind for an infant less than 4 months of age is also predictive of bruising. (Pierce et al, 2010) The prevalence, number, and location of bruises are directly linked to motor developmental ability. A child’s motor ability needs to be taken into consideration when evaluating bruising patterns for suspect abuse (Maguire et al, 2007). Other than an impression of an object, there are few bruising patterns which are diagnostic of child abuse, however there are certain patterns which are worth further investigation.

In a review of pediatric autopsy cases in South Africa, 24 cases were attributed to child abuse. The facial injuries included bruises, lacerations, burns, and scars. Scarring indicated chronic abuse. The authors attributed the low number of child abuse cases in the study to underreporting of cases by the medical and dental practitioners (Phillips and Van Der Heyde, 2006).

Dental neglect is also considered child maltreatment. According to the AAPD guideline on child abuse and neglect, “Dental caries, periodontal diseases, and other oral conditions, if left untreated, can lead to pain, infection, and loss of function. These undesirable outcomes can adversely affect learning, communication, nutrition, and other activities necessary for normal growth and development”. Valencia et al investigated the prevalence of early childhood caries in victims of maltreatment in Ontario Canada. They found that ECC was observed in 58% of abused and neglected children as compared to 30% of the general population. The proportion of children with untreated caries was 57 percent among neglected children (n = 53) and 62 percent in physically/sexually abused cases (n = 13) (Valencia et al, 2008). Another study in Italy
demonstrated that abused and neglected children had a significantly higher level of dental plaque, decay, and gingival inflammation than non-abused children (Montecchi et al, 2009). These studies demonstrated how oral health and child maltreatment are often associated.

Knowing the prevalence of head and neck injuries resulting from child maltreatment helps the dentist to identify common patterns and recognize these patterns in their office. Recognizing the signs of child maltreatment is not enough however, as there are clearly very few yearly reports by dentists.

E. **Mandatory Reporting of Child Maltreatment**

All states have statutes which identify those people who are required to report child maltreatment. Forty-eight states identify specific professions which are designated as mandatory reporters (as of June 2012, New Jersey and Wyoming are the only two states that do not list specific professions, but mandate that all people report). These individuals can include social workers, school personnel, health-care workers, mental health professionals, child care providers, medical examiners and law enforcement officers (childwelfare.gov). “Professional report sources are persons who encountered the child as part of their occupation, such as child daycare providers, legal and law enforcement personnel, and medical personnel. State laws require most professionals to notify Child Protective Service agencies of suspected maltreatment (NCANDS). Although medical personnel are often treating injuries and signs of child maltreatment, they make up only 8% of yearly reports by professionals.

Generally a report must be made by a mandated reporter when the individual *has reasons to believe* that a child has been subject to maltreatment (child welfare.gov). Although most
states allow reports to be made anonymously, 18 states require mandatory reporters to provide their names and contact information (childwelfare.gov).

Illinois state statutes address mandatory reporting and as in all other states, dentists are listed as one of many mandated reporters. In Illinois, it is required for a mandated reporter to include their name, occupation and contact information when making the report. A report is required by a mandated reporter in Illinois when:

- “A reporter has reasonable cause to believe that a child known to him or her in his or her professional capacity may be abused or neglected”
- “A physician, physician’s assistant, registered nurse, licensed practical nurse, medical technician, certified nursing assistant, social worker, or licensed professional counselor of any office, clinic, or any other physical location that provides abortions, abortion referrals, or contraceptives has reasonable cause to believe a child known to him or her in his or her professional or official capacity may be an abused child or a neglected child” (childwelfare.gov)

At least 47 states have penalties for mandated reporters who knowingly or willingly fail to make a report when they suspect a child is a victim of maltreatment. The Illinois statute addressing failure to report specifies that, “Any dentist or dental hygienist who willfully fails to report suspected child abuse or neglect shall be referred to the Department of Professional Regulation for action in accordance with the Illinois Dental Practice Act” (childwelfare.gov). Physicians failing to report are also referred to the Illinois State Medical Disciplinary Board. In addition, the statute states that for all mandatory reporters who willfully fail to report suspected child abuse or neglect, they will be charged with a class A misdemeanor for the first violation, and a Class 4 felony for a second violation (childwelfare.gov).
Although states are clear about the penalties for not reporting a suspected case of child maltreatment, they do not list specific signs which warrant a report in the first place. This is left up to the discretion of the mandated reporter. Many factors influence whether a mandated reporter is likely to suspect or report a case of child maltreatment. Studies have shown that in general, mandated reporters are knowledgeable about their legal obligation to report, however they are unsure about when their suspicions are considered reasonable.

Although clinicians may have some degree of suspicion about a case, their decision about whether or not to report can be influenced by many factors such as the child, family, injury characteristic, and the clinician’s previous experiences (Jones et al, 2008). Education is another important factor. In medical training, exposure to training in child abuse recognition and reporting is more common in pediatric specific programs than non-pediatric programs (Starling et al, 2009).

Many studies show that mandated reporters vary greatly in their threshold for reporting. Levi et al found that a group of pediatricians surveyed in Pennsylvania varied substantially in their interpretation of a “reasonable suspicion” which warranted reporting. They were asked to quantify using two scales (ordinal and visual analog), how high the likelihood of child abuse needed to be to constitute “reasonable suspicion”. They were very inconsistent, varying significantly between the two scales, leading to the conclusion that the threshold for mandated reporting is poorly understood (Levi and Brown, 2005). Experts on child abuse, both clinical and research, also disagreed on the standard threshold for when to report suspected child abuse (Levi and Crowell, 2011). On both scales that were used with pediatricians, child abuse experts also demonstrated wide variability in defining reasonable suspicion.
Medical professionals in other countries demonstrate a similar tendency to underreport. In a study done in Australia, a quarter of medical practitioners admitted to not reporting suspicious cases, even though they knew their responsibility to report. The only factor which was predictive of non-reporting was the belief that the suspected abuse was a single incident and not likely to happen again (Schweitzer et al, 2006). This study continues to point to the fact that the decision to report a suspected case of abuse is not necessarily determined by a provider’s knowledge or suspicion that abuse has occurred, but by an unknown threshold which is personal to each reporter.

Although many studies have shown that mandated reporters are knowledgeable about their obligation to report, as well as the signs which warrant a report, a lack of knowledge and proper training may be factors contributing to why most mandated reporters are underreporting. One study demonstrated that after counseling students were given a web-based training tutorial, their post-test scores on an exam measuring knowledge of child maltreatment were significantly higher than pretest scores (Lazenbatt and Freeman, 2006). Harmer-Beem found that after dental hygienists attended a continuing education course, their self-perceived likelihood to report abuse increased significantly from before the course (Harmer-Beem, 2005). This indicates that education related to child abuse identification and reporting may be effective in increasing overall familiarity with child maltreatment issues. Yehuda et al also found that although participants in their survey of health professions had a high level of involvement with child protection, they expressed their need for training. The study reported that the need for training was significantly greater with professionals that reported less experience with child protection. The most commonly reported needs for further training were involving skills on how to testify in court, talk with children, and address their parent’ reactions during the exam. Training
programs should reflect the differences in training needs between professionals and be tailored to each individual (Yehuda et al, 2010). In a national survey of pediatricians, more recent education, confidence in managing child abuse, and attitude about domestic violence screening were all found to predict that pediatricians would have a high suspicion of child abuse and report it to CPS (Jones et al, 2008).

For mandated reporters, some reasons for not reporting suspected cases of child maltreatment may include lack of knowledge, lack of standardization by mandated reporters, lack of confidence, and specific factors involved in the case. Recognizing these factors is the first step in finding a solution to eliminating them.

F. **Recognition and Reporting by Dentists**

Although child maltreatment is underreported in general, dentists in particular have very little experience in reporting child abuse and neglect. Studies have shown that dentists are in a unique position to recognize child maltreatment. Despite this, in 2011 in Illinois there were only 24 reports made by dentists out of 83,000 reports in total. Dentists accounted for only 0.2% of reports made by medical personnel (DCFS). Multiple studies have pointed to a variety of reasons and factors to explain the discrepancy between suspecting and reporting child abuse.

Bsoul et al surveyed dentists in Texas, almost 20 years after a previous study was completed. They found that there has not been a significant change in the relative ratio of reported cases to suspected cases. In the more recent Texas survey, dentists identified lack of adequate history, and lack of knowledge about abuse or their role in reporting as the main reasons for not reporting suspected cases. Despite the fact that numerous studies over the years have concluded that more education and awareness is needed, this Texas study shows that
dentists are still underreporting as much as they did 20 years (Bsound et al, 2003). On the other hand, in a Massachusetts web-based questionnaire of dentists including all specialties, there was actually a significant increase in the reporting of definitive cases of abuse since a previous study in 1975; however, the dentists still fell short of the legal requirement to report all suspicious cases. Participation in continuing education courses was the strongest predictor of a dentists’ likelihood to report cases of neglect. (Newcity et al, 2011). Thomas et al found that when compared to students, more dental professionals knew their legal responsibility to report and were more knowledgeable of the signs of child abuse, however they were less likely to know that failure to report was a misdemeanor. Less than 30% of professionals and students knew where to report suspected cases (Thomas et al, 2006)

In a survey of London dentists, Al-Habsi et al found that Pediatric Dentists were more versed in identifying child abuse and neglect than General Dentists. Pediatric Dentists’ concerns which prevented them from reporting were primarily uncertainty about diagnosis and fear of violence to the child. Among General Dentists, the main reasons for not referring a suspected case were fears of impact on the practice, family violence, and lack of knowledge about the diagnosis or process for referral (Al-Habsi et al, 2009). Cairns conducted a questionnaire in Scotland and found that dentists there had similar reasons for not reporting. In his study, 21% of dentists had seen suspicious cases in their practice but failed to take action (Cairns et al, 2005).

Other studies have used vignettes to discover factors which influence a practitioner’s decision to report suspected cases of child maltreatment. Adair et al surveyed Pediatric Dentists and General Dentists in Georgia and Florida and used vignettes to extrapolate factors which may influence a dentist’s decision. Pediatric Dentists were more likely to have education/experience with child maltreatment. In this study, factors associated with likely reporting of neglect were: 1)
serving communities with populations less than or equal to 100,000; 2) PDs acquiring specialty certificates after 1980; 3) being female; 4) exposure to continuing education; 5) having suspected cases in practice; and 6) having filed a maltreatment report. Factors associated with likely reporting of abuse were: 1) PDs acquiring specialty certification after 1980 and 2) self-reported recognition of the legal obligation to report (Adair et al, 1997). A similar study in Italy was completed using an interview method. It was found that education and female gender were the most important factors in dentists’ views on child abuse and neglect. Female gender was the greatest predictor of correctly answering the questionnaire. The investigators also found that neglect and dental neglect were the least recognized by dentists (Manea et al, 2007).

Although there has been literature published on the subject of reporting child abuse and neglect by dentists, few studies have incorporated Pediatric Dentists, Oral Surgeons, and General Dentists. There have been no studies such as this done in Illinois. In a state where reporting by dentists is so low, it is important to identify the factors which influence a practitioner’s decision to report child maltreatment, and to point out the differences between Pediatric Dentists, Oral Surgeons, and General Dentists which may affect their decisions to report child maltreatment.
III. METHODS

A. Sample Selection

The target subjects included Pediatric Dentists, Oral Surgeons, and, General Dentists practicing in Illinois. If the recipients did not treat patients 14 years old and younger they were asked to not respond to the remainder of the survey and their surveys were excluded from data analysis. Subjects were recruited from the Illinois Society of Pediatric Dentists (ISPD), The Illinois Society of Oral Maxillofacial Surgeons (ISOMS) and The Illinois State Dental Society (ISDS). The mailing list was derived from the member lists of ISPD (all 187 addresses listed), ISOMS (all 309 addresses listed), and ISDS (250 randomly selected addresses). The mailing lists included some members with multiple offices or addresses. If a member had more than one address, both addresses were included in the mailing. The possibility of a respondent answering the survey twice was not taken into consideration in data analysis. Randomization for the ISDS was completed using the Excel random numbers function.

A cover letter was mailed along with all surveys which addressed informed consent. (See Appendix A for a copy of the letter). The cover letter sent to the ISOMS was signed by Dr. William Flick. The cover letter sent to the ISDS and ISPD recipients was signed by Dr. Rodney Vergotine. The content of the cover letter was otherwise the same. Agreeing to participate in the study and returning the survey after having read the cover letter served as consent.

B. Study Design and Description of Procedures

The research design was a cross sectional survey targeting Pediatric Dentists, General Dentists, and Oral Surgeons in Illinois. Materials were mailed to the 746 selected subjects. The materials consisted of a cover letter with instructions, questionnaire, and preaddressed, pre-
stamped return envelope. Study subjects were asked to voluntarily respond to the surveys anonymously and return the survey in the preaddressed and pre-stamped envelope provided.

Six weeks after the first mailing, a second questionnaire was mailed to all 746 recipients from the first mailing, regardless of responses received after the first mailing. Respondents to the first mailing were not tracked due to the sensitivity of the subject matter. When surveys were returned, data were entered into SPSS. Surveys were collected from November 2012 to February 2013.

Approval of the study was obtained from the University of Illinois at Chicago Institutional Review Board, protocol # 2012-0852. (Appendix C) An amendment was made for the addition of a committee member (Appendix D)

C. **Questionnaire**

The first part of the survey contained questions about demographics, educational experiences, the subject’s practice, and experience in reporting child maltreatment.

Next were questions addressing knowledge and attitudes about recognizing and reporting child maltreatment, and the protocol for reporting maltreatment.

The final part of the questionnaire included two hypothetical vignettes. The first vignette implied child neglect and the second implied physical child abuse. They were each followed by questions asking if the subject would suspect and report the hypothetical case. There was a space for explanation of the response. The same survey was provided for all recipients. See Appendix A for a copy of the survey.
D. **Statistical Analysis**

Data were entered in SPSS 19.0 for Windows (Microsoft Office, 2003) SP3 according to the encoding scheme described in Appendix E. The data were cleaned and subjects with missing data were excluded.

First, demographic variables were listed, demonstrating differences between Oral Surgeons, Pediatric Dentists and General Dentists. Chi Square analyses were used for categorical variables and Kruskal Wallis for ordinal variables. The Subjects’ attitudes were analyzed using One Way Anova and post hoc test. The hypotheses were then tested using the variables and statistical analyses listed in Table I.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Dependent Variables</th>
<th>Independent Variables</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>History of Reporting Abuse</td>
<td>Specialty</td>
<td>Chi Square</td>
</tr>
<tr>
<td>2</td>
<td>Would Report Hypothetical Case of Child Neglect (yes/no)</td>
<td>Specialty</td>
<td>Chi-Square</td>
</tr>
<tr>
<td>3</td>
<td>Would Report Hypothetical Case of Child Abuse (yes/no)</td>
<td>Specialty</td>
<td>Chi-Square</td>
</tr>
<tr>
<td>4 &amp; 5</td>
<td>Would Report Hypothetical Case of Child Neglect (yes/no) Would Report Hypothetical Case of Child Abuse (yes/no)</td>
<td>a. CE on child abuse b. Experience reporting child maltreatment c. Female practitioners d. Urban setting e. Confidence and knowledge in diagnosing and reporting child maltreatment f. Less than 10 years in practice g. Children younger than 14 are &gt;50% of patient population</td>
<td>Logistic Regression</td>
</tr>
<tr>
<td>6</td>
<td>Likelihood of reporting abuse and neglect</td>
<td></td>
<td>Chi Square</td>
</tr>
</tbody>
</table>
IV. RESULTS

A. **Number of Participants and Response Rates**

Surveys were mailed to 746 addresses. A total of 291 responses were received. Six surveys did not list the specialty of the recipient and these were excluded from data analysis. Five were not used because the dentists’ specialties were not among the three studied. Twenty surveys were not included as they did not complete the survey due to being retired or not seeing children in their practice. The overall response rate was 260/715 or 36%. Pediatric Dentists’ response rate was 43%; Oral Surgeons’ was 34%; and General Dentists’ was 29%.

B. **Descriptive Characteristics of Participants**

The descriptive characteristics of the participants are listed in Table II. PDs ranked lowest in the number of years in practice. OSs ranked lowest in the percentage of children seen in their practice. PDs had significantly more female practitioners than the other specialties. All specialties were more likely to practice in an urban/suburban environment than in a rural setting. All specialties were more likely to practice in a private practice setting than in another type of practice.
TABLE II
DEMOGRAPHIC CHARACTERISTICS OF ILLINOIS PEDIATRIC DENTISTS, ORAL SURGEONS, AND GENERAL DENTISTS RESPONDING TO A SURVEY ABOUT CHILD MALTREATMENT

<table>
<thead>
<tr>
<th></th>
<th>Pediatric Dentists</th>
<th>Oral Surgeons</th>
<th>General Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Response Rate</td>
<td>43%</td>
<td>34%</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Gendera</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41%</td>
<td>97%</td>
<td>64%</td>
</tr>
<tr>
<td>Female</td>
<td>59%</td>
<td>3%</td>
<td>36%</td>
</tr>
<tr>
<td>Practice Typeb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Practice</td>
<td>94%</td>
<td>96%</td>
<td>89%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>4%</td>
<td>11%</td>
</tr>
<tr>
<td>Practice Setting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban/Sub-urban</td>
<td>95%</td>
<td>88%</td>
<td>85%</td>
</tr>
<tr>
<td>Rural</td>
<td>5%</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>Median Years in Practicec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years</td>
<td>16-20 years</td>
<td>25+ years</td>
<td>25+ years</td>
</tr>
<tr>
<td>Median Percentage of Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in Practiced</td>
<td>51-75%</td>
<td>&lt;10%</td>
<td>11-15%</td>
</tr>
</tbody>
</table>

a,b Pearson Chi-square, p<.05

c,d Kruskall Wallis, p<.05
The experience of the participants in reporting, suspecting and education in child maltreatment, is listed in Table III. PDs had more experience in suspecting and reporting child maltreatment in their practices and more CE in child maltreatment than GDs and OSs.

### TABLE III
EXPERIENCE OF PEDIATRIC DENTISTS, ORAL SURGEONS, AND GENERAL DENTISTS IN SUSPECTING AND REPORTING, AND CONTINUING EDUCATION IN CHILD MALTREATMENT

<table>
<thead>
<tr>
<th></th>
<th>Pediatric Dentists</th>
<th>Oral Surgeons</th>
<th>General Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>History of Suspecting but not Reporting Child Maltreatment</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>33%</td>
<td>27</td>
<td>10%</td>
</tr>
<tr>
<td>No</td>
<td>67%</td>
<td>54</td>
<td>90%</td>
</tr>
<tr>
<td><strong>History of Reporting Child Maltreatment</strong>&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>59%</td>
<td>48</td>
<td>20%</td>
</tr>
<tr>
<td>No</td>
<td>41%</td>
<td>33</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Continuing Education in Child Maltreatment</strong>&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>93%</td>
<td>75</td>
<td>45%</td>
</tr>
<tr>
<td>No</td>
<td>7%</td>
<td>6</td>
<td>55%</td>
</tr>
</tbody>
</table>

<sup>a,b,c</sup> Pearson Chi-square p<.05, PDs significantly different from GDs and OS in experience
<sup>a</sup> OSs had least amount of experience in suspecting, reporting and CE

C. **Dentists’ Attitudes on Child Maltreatment Issues**

Pediatric Dentists’, Oral Surgeons’, and General Dentists’ opinions about various issues regarding recognizing and reporting child maltreatment are listed in Table IV. The 5 point likert scales were collapsed into 3 point scales for the purposes of the table. The Kruskal Wallis test and Dunnets T post hoc test were completed. PDs were significantly different than OSs in their response to the questions on whether the law on mandated reporting is clear and on both their confidence in recognizing child abuse and child neglect. All three groups (PDs, OSs, and GDs) were significantly different from each other in their knowledge of protocol for reporting
suspected cases. On the question of whether dentists have an equal role as other mandated
reporters to report child maltreatment, PDs were significantly different than both OS and GDs in
their responses.
<table>
<thead>
<tr>
<th></th>
<th>Pediatric Dentists</th>
<th>Oral Surgeons</th>
<th>General Dentists</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td><strong>The Law on Mandated Reporting is Clear</strong></td>
<td>True</td>
<td>81%</td>
<td>62%</td>
<td>64%</td>
</tr>
<tr>
<td></td>
<td>15%</td>
<td>29%</td>
<td>30%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>4%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>More Education Would Increase Reporting</strong></td>
<td>True</td>
<td>81%</td>
<td>61%</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>15%</td>
<td>12%</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>5%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>I am Confident in Recognizing Child Abuse</strong></td>
<td>True</td>
<td>64%</td>
<td>44%</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>27%</td>
<td>22%</td>
<td>42%</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>9%</td>
<td>12%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>I am Confident in Recognizing Child Neglect</strong></td>
<td>True</td>
<td>73%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>23%</td>
<td>19%</td>
<td>41%</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>4%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>I Know the Protocol for Reporting</strong></td>
<td>True</td>
<td>69%</td>
<td>28%</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>16%</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>11%</td>
<td>47%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Dentists Have an Equal Role as Other Reporters</strong></td>
<td>True</td>
<td>96%</td>
<td>88%</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>4%</td>
<td>3%</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>There is a Benefit to the Family When Reporting</strong></td>
<td>True</td>
<td>86%</td>
<td>86%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>14%</td>
<td>11%</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>0%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Reporting is a Burden to the Practice</strong></td>
<td>True</td>
<td>9%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>15%</td>
<td>12%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>76%</td>
<td>62%</td>
<td>80%</td>
</tr>
</tbody>
</table>

a,b,c Kruskal Wallis p<.05 – PDs are significantly different than OS

* 5 point Likert scales collapsed to three points for ease of comprehension
D. **Hypothesis 1**

*Pediatric Dentists are more likely than Oral Surgeons and General Dentists to have a history of reporting child maltreatment (child abuse or neglect).*

This was determined by Chi Square Test. The analysis indicated that Pediatric Dentists are significantly more likely to have a history of reporting child maltreatment than Oral Surgeons or General Dentists.

**TABLE V**  
**PEDIATRIC DENTISTS, ORAL SURGEONS, AND GENERAL DENTISTS HISTORY OF REPORTING CHILD MALTREATMENT IN THEIR OWN PRACTICE**

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Yes, I have reported a case</th>
<th>No, I have not reported a case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dentists</td>
<td>59% (n= 48)</td>
<td>41% (n=33)</td>
</tr>
<tr>
<td>Oral Surgeons</td>
<td>20% (n=21)</td>
<td>80% (n=85)</td>
</tr>
<tr>
<td>General Dentists</td>
<td>22% (n= 16)</td>
<td>78% (n=57)</td>
</tr>
</tbody>
</table>

* Pearson Chi Square, p <.001
E. **Hypothesis 2 and 3**

*Pediatric Dentists are more likely than Oral Surgeons and General Dentists to report hypothetical cases of child neglect or child abuse.*

Analysis using chi-square revealed no statistical difference between the number of Pediatric Dentists, Oral Surgeons, and General Dentists who answered that they would report the hypothetical case of child neglect, Pearson Chi Square, p >0.05

There was also no statistical difference between the numbers of each specialty that answered that they would report the hypothetical case of child abuse, Pearson Chi Square, p >0.05

---

**TABLE VI**

RESPONSES OF ILLINOIS PEDIATRIC DENTISTS, ORAL SURGEONS, AND GENERAL DENTISTS ON WHETHER THEY WOULD REPORT CHILD NEGLECT FROM A HYPOTHETICAL CASE

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dentists</td>
<td>23% (n=18)</td>
<td>77% (n=61)</td>
<td>100% (n=79)</td>
</tr>
<tr>
<td>Oral Surgeons</td>
<td>22% (n=23)</td>
<td>78% (n=82)</td>
<td>100% (n=105)</td>
</tr>
<tr>
<td>General Dentists</td>
<td>28% (n=20)</td>
<td>72% (n=51)</td>
<td>100% (n=71)</td>
</tr>
</tbody>
</table>

*Pearson Chi-Square p>.05, not significant*
TABLE VII
RESPONSES OF ILLINOIS PEDIATRIC DENTISTS, ORAL SURGEONS, AND GENERAL DENTISTS ON WHETHER THEY WOULD REPORT CHILD ABUSE FROM A HYPOTHETICAL CASE

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dentists</td>
<td>70% (n=53)</td>
<td>30% (n=23)</td>
<td>100% (n=76)</td>
</tr>
<tr>
<td>Oral Surgeons</td>
<td>72% (n=76)</td>
<td>28% (n=29)</td>
<td>100% (n=105)</td>
</tr>
<tr>
<td>General Dentists</td>
<td>73% (n=52)</td>
<td>27% (n-19)</td>
<td>100% (n=71)</td>
</tr>
</tbody>
</table>

*Pearson Chi-Square p>.05, not significant

F. **Hypothesis 4 and 5**

_Hypothesis 4: The following factors are significantly related to the likelihood of a practitioner to report hypothetical cases of child neglect:_

- a. More CE in child abuse
- b. More experience in reporting child maltreatment
- c. Female practitioners
- d. Practitioners in urban settings
- e. More self-reported confidence and knowledge in diagnosing and reporting child maltreatment
- f. Less than 10 years in practice
- g. Children younger than 14 are >50% of patient population

_Hypothesis 5: The following factors are significantly related to the likelihood of a practitioner to report hypothetical cases of child abuse:_

- a. More CE in child abuse
- b. More experience in reporting child maltreatment
- c. Female practitioners
- d. Practitioners in urban settings
- e. More self-reported confidence and knowledge in diagnosing and reporting child maltreatment
- f. Less than 10 years in practice
- g. Children younger than 14 are >50% of patient population
Logistic regression was used to determine the predictors of reporting the hypothetical cases of child abuse and child neglect. Only Confidence in recognizing child maltreatment predicted the outcome of reporting the vignette of child neglect. All other demographic, experiential, educational, and attitude responses fell out of the regression. This model only predicted 9% of the variance in the outcome variable.

For Hypothesis 5, both Confidence in recognizing child abuse, and the view that a family can benefit from reporting suspected abuse, predicted the outcome variable of reporting the abuse vignette. This model only predicted 5% of the variance in the outcome variable.

| TABLE VIII |
| FINAL REGRESSION MODEL SHOWING PREDICTORS OF REPORTING A HYPOTHETICAL CASE OF CHILD NEGLECT AMONG ILLINOIS DENTISTS, N=260 |

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Sig</th>
<th>Odds Ratio</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in Recognizing Neglect</td>
<td>.001</td>
<td>2.2</td>
<td>1.4-3.2</td>
</tr>
<tr>
<td>More Education Would Make Reporting More Likely</td>
<td>0.1</td>
<td>1.4</td>
<td>0.1-2.1</td>
</tr>
<tr>
<td>Reporting is a Benefit to the Family</td>
<td>.06</td>
<td>1.6</td>
<td>1.0-2.4</td>
</tr>
</tbody>
</table>

*ANOVA, p<.000, Cox and Snell r²=.09

Non-significant variables which fell out of regression analysis included: All demographics - gender, years in practice, practice location, %of children in practice, and practice setting Experience -CE in child maltreatment, history of reporting and history of suspecting Attitudes about reporting – Knowledge of the law, knowledge of the protocol, View on more education, View on one’s role in reporting, View on benefit to the family, View on burden to the practice
### TABLE IX
**FINAL REGRESSION MODEL SHOWING PREDICTORS OF REPORTING AN HYPOTHETICAL CASE OF CHILD ABUSE AMONG ILLINOIS DENTISTS, N=260**

<table>
<thead>
<tr>
<th></th>
<th>Sig</th>
<th>Odds Ratio</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in Recognizing Abuse</td>
<td>.02</td>
<td>1.5</td>
<td>1.0-2.2</td>
</tr>
<tr>
<td>Reporting is benefit to the Family</td>
<td>.04</td>
<td>1.6</td>
<td>1.1-2.4</td>
</tr>
</tbody>
</table>

*ANOVA, p=.001, Cox and Snell r²=.05
Non-significant variables which fell out of regression analysis included:
All demographics - gender, years in practice, practice location, % of children in practice, and practice setting Experience - CE in child maltreatment, history of reporting and history of suspecting
Attitudes about reporting – Knowledge of the law, knowledge of the protocol, View on more education, View on one’s role in reporting, View on burden to the practice

Since continuing education was a variable which fell out of the model, and was not predictive of reporting either of the child maltreatment vignettes, we decided to test if having a history of continuing education was related to having more confidence in recognizing child maltreatment. The results of the independent samples t-test are listed in Table X. The results show that having more CE on child maltreatment makes a practitioner significantly more confident in recognizing/diagnosing child maltreatment.
TABLE X
INDEPENDENT SAMPLES T-TEST OF WHETHER CE ON CHILD MALTREATMENT IS RELATED TO CONFIDENCE IN RECOGNIZING/DIAGNOSING CHILD ABUSE AND NEGLECT IN ILLINOIS DENTISTS

<table>
<thead>
<tr>
<th>CE on Child Maltreatment</th>
<th>N</th>
<th>Mean, SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in Recognizing/Diagnosing Abuse</td>
<td>No</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>158</td>
</tr>
<tr>
<td>Confidence in Recognizing/Diagnosing Neglect</td>
<td>No</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>158</td>
</tr>
</tbody>
</table>

*Independent samples T-test, p=.01

G. **Hypothesis 6**

Dentists are more likely to report abuse cases than neglect, and are more likely to suspect abuse than neglect.

The results illustrate that dentists are more likely to report abuse than neglect, and are more likely to suspect abuse than neglect. These results are shown in Table XI and XII.
### TABLE XI
RESPONSES OF ILLINOIS DENTISTS ON WHETHER THEY WERE SUSPICIOUS OF THE HYPOTHETICAL CHILD NEGLECT CASE OR THE HYPOTHETICAL CHILD ABUSE CASE

<table>
<thead>
<tr>
<th></th>
<th>Suspect Abuse</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Total</td>
</tr>
<tr>
<td>Suspect Neglect</td>
<td>19% (n=11)</td>
<td>81% (n=46)</td>
<td>100% (n=57)</td>
</tr>
<tr>
<td></td>
<td>9% (n=18)</td>
<td>91% (n=179)</td>
<td>100% (n=197)</td>
</tr>
<tr>
<td>Total</td>
<td>11% (n=29)</td>
<td>89% (n=225)</td>
<td>100% (n=254)</td>
</tr>
</tbody>
</table>

*Pearson Chi-Square, p<.05

### TABLE XII
RESPONSES OF ILLINOIS DENTISTS ON WHETHER THEY WOULD REPORT THE HYPOTHETICAL CHILD NEGLECT CASE OR THE HYPOTHETICAL CHILD ABUSE CASE

<table>
<thead>
<tr>
<th></th>
<th>Report Abuse</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Total</td>
</tr>
<tr>
<td>Report Neglect</td>
<td>33% (n=62)</td>
<td>67% (n=126)</td>
<td>100% (n=188)</td>
</tr>
<tr>
<td></td>
<td>13% (n=8)</td>
<td>87% (n=53)</td>
<td>100% (n=61)</td>
</tr>
<tr>
<td>Total</td>
<td>28% (n=70)</td>
<td>72% (n=179)</td>
<td>100% (n=249)</td>
</tr>
</tbody>
</table>

*Pearson Chi-Square, p<.05
V. DISCUSSION

A. **Summary of Findings and Significance**

Dentists are in a unique position to recognize and report cases of child maltreatment. Despite this, the rate of reporting by dentists remains extremely low. This was a cross sectional study to compare Pediatric Dentists’, Oral Surgeons’ and General Dentist’s experiences of and attitudes about reporting cases of child maltreatment.

Results of this study showed that Pediatric Dentists are more likely than Oral Surgeons and General Dentists to have experience in child maltreatment through continuing education, suspecting cases in their practice, and reporting cases of child maltreatment.

Pediatric Dentists were more likely in this study to have a history of reporting child maltreatment. As many as 33% of Pediatric Dentists, 21% of General Dentists, and 10% of Oral Surgeons had suspected abuse but failed to report for various reasons. These reasons included being unable to substantiate the claim, the patient left the practice, concerns about the implications for parties involved, or not knowing the protocol. This is likely due to the fact that they see significantly more children in their practice than General Dentists and Oral Surgeons and they may be more likely to see these children throughout their childhood. It is important for all dentists and specialists to recognize that they have a responsibility to report child maltreatment as soon as it is suspected, and should not depend on another practitioner to make the assessment. The American Academy of Pediatric Dentistry recommends that a dental home is established for a child by age 1 year. Because preschool children are especially susceptible to child maltreatment, establishing a dental home may help with early recognition. Dentists who
are aware that specific bruising patterns in a preschool age child are indicative of child abuse could play an essential role in child abuse prevention.

Our study showed that Pediatric Dentists are more likely than Oral Surgeons or General Dentists to receive continuing education recognizing in child maltreatment. Although we expect that training in child abuse recognition is more common in pediatric programs than non-pediatric programs (Starling et al, 2009; Adair et al, 1997), continuing education in recognizing and reporting child maltreatment should be encouraged for all dentists and specialists treating children. Amongst the participants, having received continuing education in child maltreatment was significantly associated with having more confidence in recognizing child maltreatment. Most participants in this study agreed that more education in child maltreatment would make a dentist more likely to report a suspected case. This finding warrants further investigation to find out what is being taught in dental schools and in residencies and what continuing education is available.

Pediatric Dentists, Oral Surgeons, and General Dentists were equally likely to report the hypothetical vignettes. They chose to report abuse and neglect in the hypothetical situations at about 72% and 24% respectively. This study demonstrates that the decision of whether or not to report a case of child maltreatment is a complex decision which goes beyond the training that one received or the percentage of children in one’s practice. It is also likely that due to the nature of the vignettes, which implied child maltreatment, there were many participants (in all 3 groups) who said they would report the scenario, even if they may not actually do so in their practice.
Past studies have shown that demographic and experiential factors such as female gender, size of patient population, percentage of children in practice, history of reporting, and history of CE were associated with reporting child maltreatment (Adair et al, 1997; Manea et al, 2007); however this study found that demographic factors were not correlated with reporting either the vignette about child abuse or child neglect. Of the hypothesized variables, only confidence in diagnosing/recognizing child abuse, and viewing reporting suspected abuse as a benefit to family, had a significant association with a dentists’ decision to report. Only confidence in diagnosing/recognizing child neglect had a significant association with a dentist’s decision to report the hypothetical case of neglect. Continuing education was associated with more confidence in recognizing child maltreatment in this study, and having more confidence in recognizing child maltreatment was significantly associated with reporting the hypothetical vignettes; however Pediatric Dentists, who have more CE were not more likely than the other groups (OS and GDs) to say they would report the hypothetical vignettes. This demonstrates once again that the vignettes in this study may have lead more participants to respond that they would report the case, even if they would not report a similar case in a real life scenario. It could also indicate that attending advanced training programs do not make a practitioner more likely to report suspected cases of child maltreatment.

Past studies have found that repercussions for the family are a deterrent to reporting child maltreatment. However this study shows that if a dentist sees reporting child abuse as helping the family, they may be more likely to report the case. Adding this perspective to continuing education programs may help dentists become more willing to report suspected cases.

Although there was not a significant difference between the three groups (PDs, Oss, and GDs) in their decision to report hypothetical cases of child maltreatment, there were some
differences in their self-reported knowledge and opinions regarding reporting child maltreatment. Pediatric Dentists were more confident in recognizing the signs of child abuse and child neglect. Pediatric Dentists agreed that the laws on mandated reporting are clear more than OSs. Pediatric Dentists responded more often than the other groups that they know the protocol for reporting child maltreatment. Almost 50% of OSs said they do not know the protocol for reporting child maltreatment. This percentage is more than the study by Thomas et al, which found that less than 30% of dental professionals knew where to report suspected cases of abuse (Thomas et al, 2006). These differences in the groups demonstrate that there may be a lack of knowledge in how to proceed once child maltreatment is suspected. Programs, including residencies and dental schools, must emphasize the dentists’ role and how to follow through with reporting.

Yehuda found that amongst health professionals, there was need for training in skills in how to testify, talk with children, and address their parent’s reactions during the exam (Ben Yehuda et al, 2010). Although our study does not delve into the specifics of reporting protocol, it demonstrates that there is a lack of complete understanding.

Confidence in recognizing child maltreatment is a vital part of a practitioner’s decision to report a case when they suspect child maltreatment. This study demonstrated that those practitioners who had a history of continuing education in child maltreatment, were more likely to have confidence in recognizing child maltreatment. Continuing education in recognition of child maltreatment, and the protocol for reporting child maltreatment, may need to be offered more often in order to change the pattern of underreporting by all dentists.

The data in this study on the decisions to report the hypothetical cases of child abuse and neglect demonstrated that child neglect may be a much more complex issue. All three groups were significantly more likely to both suspect and report the hypothetical case of abuse than the
hypothetical case of neglect. Although cases of neglect account for 78% of reported cases in the United States, dentists in this study were less likely to report the neglect vignette. Out of those who suspected the case of abuse, 80% said that they would report the case; however, out of those who suspected the case of neglect, only 31% said that they would report the case. Although both neglect and abuse fall under the definition of child maltreatment, many factors must be considered in order to warrant a report of neglect, especially when dental neglect is noted.

According to the AAPD guideline on Child Abuse and Neglect, there are many factors a clinician must consider. These can include lack of knowledge, lack of finances, parental ignorance, or lack of perceived value of oral health. Many participants in this survey stated that they would not report the vignette of neglect because these factors mentioned in the guideline could pose potential barriers to seeking treatment. They noted difficulty in access to care, problems with finances, and family issues as reasons that they would give the family another chance. Many respondents said that they would not report a case because they did not think that it would be handled seriously by authorities. Other participants said they would refer to a Pediatric Dentist or Pediatrician for further assessment. Our findings concur with past studies (24,28) and demonstrate that dentists are more willing to report cases of child abuse than child neglect, even if they suspect that neglect is taking place. This may be due to the fact that the vignette implied dental neglect and did not describe other aspects of neglect. Although dental neglect is a part of medical neglect, many dentists, physicians, social workers, and law makers may not consider it a serious concern. This study indicates that there needs to be a more standardized threshold for reporting child abuse and neglect so that cases are not ignored simply because of extenuating circumstances.
We hope that this study can create momentum for future studies to find methods to better train all dentists. Regardless of one’s specialty, knowing the protocol for reporting, being confident in the recognition, and understanding one’s role in reporting child maltreatment is essential to being an advocate for children who may be victims of child abuse and neglect.

B. **Limitations**

One limitation in this study was that the survey was only sent to practitioners in Illinois. A survey of multiple states could have broadened data collection to better represent the attitudes and knowledge of dentists throughout the country. This survey also only reflects the attitudes of the participants, and may not represent the opinions of all dentists in Illinois. It is likely that the people who participated in this survey had an interest in the subject matter or may have had experience in the topic of child maltreatment. This may have led us to conclude that there is a higher level of experience than there actually is. It is also possible that a higher proportion of dentists in this study indicated that they would report a case of abuse or neglect than would the average population of dentists in Illinois. Since many laws on child abuse and neglect are state laws, it is still valuable to know how dentists in each state understand their own laws. Further investigation is needed to specifically address knowledge about the laws and protocol for reporting. Surveying Pediatric Dentists from the list of ISPD members also made this study susceptible to subject “burnout”, as many other surveys are sent during this time. Although we had a higher response rate from Pediatric Dentists than the two other groups, it is reasonable to assume that we may have had an even higher response rate if Pediatric Dentists were not receiving surveys from multiple residents at the same time. Response rate may have been improved in this study by making follow up phone calls to the recipients of the surveys.
However, this would require tracking responses and may not allow for the level of anonymity that was preferred in this survey.

Due to the sensitive nature of our research topic, the survey was sent twice to the same recipients. Because of this, it was possible for a recipient to complete the survey twice if they chose to, which would result in skewed data. It was also possible for the same dentist to receive the survey at two different offices, as we did not screen for dentists who had more than one office. To avoid these issues, we would need to track responses and ensure that we did not receive two surveys from the same recipient by sending the survey to a dentist with multiple offices.

Another limitation comes from the issue of validity. Surveys have the advantage of being convenient but the disadvantage of not easily measuring future behavior. In this survey we presented hypothetical cases but they may not reflect what people really do. In a survey participants may give the more socially appropriate answer. Although surveys were anonymous, practitioners may not have felt comfortable in honestly recording their opinions about their role in reporting child maltreatment due to the sensitive nature of the subject. The results reflected self-reported knowledge and attitudes about reporting child maltreatment, which may not be completely representative of actual knowledge and attitudes. These limitations could have altered the validity of this study.

C. Future Studies

- A qualitative study using interviews of dentists could better represent the perceived barriers to reporting child maltreatment. Understanding dentists’ attitudes about the
Department of Children and Family Services in Illinois may be one of the keys to improving rates of reporting.

- Studies on how best to standardize protocol for diagnosing and reporting child maltreatment are essential to improving recognition and reporting of child maltreatment by dentists.
- Methods must be tested to better educate all dentists, whether through dental school, residency, or continuing education.
- For dentists to understand the impact of their involvement in child maltreatment prevention, it is important to know the outcome of reports that are made. Studies are needed which show the outcome of dentists’ reports.
- Studies are needed to estimate how often Oral Surgeons encounter cases which are indicative of child maltreatment so that they can better understand their role.
- Research is needed to better understand the long term effects of dental neglect so that it can be treated by dentists, physicians, law makers, and social workers as a part of medical neglect. Neglect and its recognition by dentists needs to be further studied as it seems to be the least recognized type of child maltreatment.

D. **Conclusions**

The purpose of this study was to determine the self-reported opinions of Pediatric Dentists, General Dentists and Oral Surgeons on reporting child maltreatment, and what factors influence their decisions.
Our study leads to the following conclusions:

- Pediatric Dentists are more likely than Oral Surgeons and General Dentists to have a history of reporting child abuse and neglect
- Pediatric Dentists are not more likely than Oral Surgeons and General Dentists to report the hypothetical cases of child abuse and neglect
- A dentist is more likely to report a case of child maltreatment (both abuse and neglect) if they have more confidence in recognizing/diagnosing child maltreatment
- A dentist is more likely to report a case of child abuse if they believe that the report will benefit the family in the long run.
- A dentist is more likely to suspect and report child abuse than child neglect.
- Dentists who have had CE in child maltreatment are more likely to report confidence in recognizing child maltreatment
- Pediatric Dentists are more likely to report that they understand the protocol for reporting and the law on mandated reporting
- Pediatric Dentists are more likely to report confidence in recognizing child maltreatment (both abuse and neglect)
- Pediatric dentists are more to say that they have an equal role as other mandated reporters to report suspected cases of child maltreatment
CITED LITERATURE


APPENDIX A: Cover Letter

November 2012

Dear Doctor,

My name is Dr. Neena Bhole, I am a second year pediatric dental resident at the University of Illinois at Chicago. I am conducting research to learn more about the knowledge and opinions of Pediatric Dentists, Oral Surgeons and General Dentists in regards to reporting child maltreatment (abuse and neglect). I would like to invite you to participate in this research project by answering the attached survey.

There are no known risks for your participation. The survey will take a few minutes to complete and we will ask for no identifiers. The information collected will provide us with beneficial information on how dentists understand their role in reporting child abuse and neglect.

If you agree to participate in this study, please complete the attached questionnaire. Taking part in this study is voluntary. You do not have to answer any questions that make you uncomfortable. If you have any questions, concerns, or complaints about the research study, please contact me at nbhole2@gmail.com. You may also contact my research advisor, Dr. Rodney Vergotine, at Rodney@uic.edu.

If you have any questions about your rights as a research subject, please contact the Office for the Protection of Research Subjects of University of Illinois at Chicago at (312) 996 1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.

Sincerely,

Neena Bhole, DMD
Pediatric Dentistry Resident

Rodney Vergotine, DDS, MS
Faculty, UIC College of Dentistry
APPENDIX B: Questionnaire

Questionnaire

Do you perform treatment on children under the age of 14 years in your practice?
- Yes
- No

If NO, then DO NOT fill out this survey. Circle NO and please return the survey.

A) Please identify your specialty:
- Pediatric dentistry
- General dentistry
- Oral surgery

B) What is your gender
- Male
- Female

C) How many years have you been in practice?
- 0-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 25+ years

D) In which setting do you primarily practice?
- Private practice
- Academic setting
- Community health center
- Other _______________________

E) In what setting is your primary practice?
- Rural
- Urban/Suburban

F) Approximately what percentage of your practice is children 14 or younger
- <10%
- 11-15%
- 16-25%
- 26-50%
- 51-75%
- 76-100%

G) Have you ever had continuing education (CE) and/or training in your post-doctoral program regarding child maltreatment (abuse or neglect)?
- Yes
- No
H) Have you ever reported child maltreatment in your practice?
  o  Yes  o  No

I) Have you ever suspected child maltreatment in your practice but were unable report it for various reasons?
  o  Yes  o  No

If you answered “yes” to question J, what was your reason for not reporting?
  o  I could not substantiate my suspicions.
  o  The patient changed to a different practice.
  o  I was concerned about the implications for the family.
  o  I was concerned about the implications for me or my practice.
  o  I changed my mind about my suspicions.
  o  I did not know where to report it or what the process was.
  o  I did not think it was my responsibility.
  o  Other __________________________________________________________________________

J) The law on mandated reporting of child maltreatment by dentists is clear.

    1  2  3  4  5
    Completely False  False  Neutral  True  Completely True

K) Receiving more education on child maltreatment would increase the likelihood of dentists reporting abuse/neglect.

    1  2  3  4  5
    Completely false  False  Neutral  True  Completely True

L) I am confident in recognizing/diagnosing child abuse.

    1  2  3  4  5
    Completely false  False  Neutral  True  Completely True

M) I am confident in recognizing/diagnosing child neglect.

    1  2  3  4  5
    Completely false  False  Neutral  True  Completely True

N) I know the protocol for reporting child maltreatment including the laws and appropriate agencies.

    1  2  3  4  5
    Completely false  False  Neutral  True  Completely True

O) Dentists have an equal role as other mandated reporters (for example, pediatricians or teachers) to evaluate and report suspected child maltreatment.

    1  2  3  4  5
    Completely false  False  Neutral  True  Completely True

P) In the long run, a family is helped if a dentist reports child maltreatment.
Please read the following 2 vignettes and respond to the questions below:

**VIGNETTE ONE:**
A 4 year old male presents to your office with his parents for extraction of a supernumerary tooth. You explain to the child’s parents that the patient also has multiple carious lesions and 3 small abscesses. You explain the risks of not getting treatment. The parents report that they will seek treatment for their child. After extracting the supernumerary tooth the patient does not return to your clinic. A year later, they are back and the patient has facial swelling and no apparent restorations present.

A) Do you suspect this as a case of neglect?
   - o Yes
   - o No

B) Would you report this case to the appropriate agency?
   - o Yes
   - o No

If not, how would you proceed?
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

**VIGNETTE TWO:**
A 4 year old new patient presents to your office as an emergency walk-in at 6 pm. Her mother reports, “She fell while playing at school and hit her lip and teeth.” On exam, there is a bleeding laceration on the patient’s upper lip and luxated maxillary anterior teeth. You also note light bruises and faded scars on the patient’s cheeks. When you ask the mother to provide more information about the incident, she seems to become defensive and will not elaborate on the details.

A) Do you suspect child abuse in this case?
   - o Yes
   - o No

B) Would you report this case to the appropriate agency?
   - o Yes
   - o No

If not, how would you proceed?
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
APPENDIX C: IRB Approval # 2012-0852

Exemption Granted

October 17, 2012

Neena Bhole, DMD
Pediatric Dentistry
801 S Paulina
M/C 850
Chicago, IL 60612
Phone: (404) 713-9478 / Fax: (312) 413-8006

RE: Research Protocol # 2012-0852
“Child abuse and neglect: assessment of Pediatric Dentists, General Dentists and Oral Surgeons' attitudes and knowledge”

Sponsors: None

Dear Dr. Bhole:

Please note that this Exemption determination does not include approval for Dr. William Flick to conduct the research as his Investigator Training Period expired on August 30, 2012. After Dr. Flick has completed Investigator Continuing Education, please submit an Amendment adding him as a co-investigator for this research study. Link to information regarding Investigator Continuing Education: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/2-2-2/ce_requirements.shtml

Your Claim of Exemption was reviewed on October 15, 2012 and it was determined that your research protocol meets the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)]. You may now begin your research.

Exemption Period: October 15, 2012 - October 15, 2015
Performance Site(s): UIC
Subject Population: Adult (18+ years) subjects only
Number of Subjects: 717

The specific exemption category under 45 CFR 46.101(b) is:
(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i)
information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

1. **Amendments** You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

2. **Record Keeping** You are responsible for maintaining a copy of all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

3. **Final Report** When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

4. **Information for Human Subjects** UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:
   a. The researchers affiliation; UIC, JBVMAC or other institutions,
   b. The purpose of the research,
   c. The extent of the subject’s involvement and an explanation of the procedures to be followed,
   d. Whether the information being collected will be used for any purposes other than the
proposed research,
e. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
f. Description of any reasonable foreseeable risks,
g. Description of anticipated benefit,
h. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
i. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
j. A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject’s rights, which includes the appropriate phone numbers.

Please be sure to:

→ Use your research protocol number (listed above) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

cc: Indru C. Punwani, Pediatric Dentistry, M/C 850
    Rodney Vergotine, Pediatric Dentistry, M/C 850
APPENDIX D: IRB Approval #2012-0852

Exemption Determination
Amendment to Research Protocol – Exempt Review
UIC Amendment # 1

December 21, 2012
Neena Bhole, DMD
Pediatric Dentistry
801 S Paulina
M/C 850
Chicago, IL 60612
Phone: (404) 713-9478 / Fax: (312) 413-8006

RE: Protocol # 2012-0852
“Child Abuse and neglect: assessment of Pediatric Dentists, General Dentists and Oral Surgeons' attitudes and knowledge”

Dear Dr. Bhole:

The OPRS staff/members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research, and have determined that your research protocol continues to meet the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)].

The specific exemption category under 45 CFR 46.101(b) is:
(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You may now implement the amendment in your research.

Please note the following information about your approved amendment:

**Exemption Period:**
December 21, 2012 – December 21, 2015

**Amendment Approval Date:**
December 21, 2012

**Amendment:**
Summary: UIC Amendment #1 dated November 21, 2012 and submitted to OPRS on December 12, 2012 is an investigator-initiated amendment adding the following co-investigator: Dr. William Flick

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:
5. **Amendments** You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

6. **Record Keeping** You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

7. **Final Report** When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

8. **Information for Human Subjects** UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:

   f. The researchers affiliation; UIC, JB VAMC or other institutions,
   g. The purpose of the research,
   h. The extent of the subject’s involvement and an explanation of the procedures to be followed,
   i. Whether the information being collected will be used for any purposes other than the proposed research,
   j. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
   f. Description of any reasonable foreseeable risks,
   k. Description of anticipated benefit,
   l. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
   m. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
   n. A statement that the UIC IRB/OPRS or JB VAMC Patient Advocate Office is available if there are questions about subject’s rights, which includes the appropriate phone numbers.

Please be sure to:

- Use your research protocol number (2012-0852) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further
help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

cc: Indru C. Punwani, Pediatric Dentistry, M/C 850
    Rodney Vergotine, Pediatric Dentistry, M/C 850
APPENDIX E: Data Encoding Scheme

A) Please identify your specialty:
   o Pediatric dentistry = 1
   o General dentistry = 2
   o Oral surgery = 3

B) What is your gender
   o Male = 1
   o Female = 2

C) How many years have you been in practice?
   o 0-5 years = 1
   o 6-10 years = 2
   o 11-15 years = 3
   o 16-20 years = 4
   o 21-25 years = 5
   o 25+ years = 6

D) In which setting do you primarily practice?
   o Private practice = 1
   o Academic setting = 2
   o Community health center = 3
   o Other = 4

E) In what setting is your primary practice?
   o Rural = 1
   o Urban/Suburban = 2

F) Approximately what percentage of your practice is children 14 or younger
   o <10% = 1
   o 11-15% = 2
   o 16-25% = 3
   o 26-50% = 4
   o 51-75% = 5
   o 76-100% = 6

G) Have you ever had continuing education (CE) and/or training in your post-doctoral program regarding child maltreatment (abuse or neglect)?
   o Yes = 1
   o No = 0

H) Have you ever reported child maltreatment in your practice?
   o Yes = 1
   o No = 0

I) Have you ever suspected child maltreatment in your practice but were unable report it for various reasons?
   o Yes = 1
   o No = 0
If you answered “yes” to question J, what was your reason for not reporting?

- I could not substantiate my suspicions – yes =1, no=0
- The patient changed to a different practice - yes =1, no=0
- I was concerned about the implications for the family - yes =1, no=0
- I was concerned about the implications for me or my practice - yes =1, no=0
- I changed my mind about my suspicions - yes =1, no=0
- I did not know where to report it or what the process was - yes =1, no=0
- I did not think it was my responsibility - yes =1, no=0
- Other __________________________________________________________________________

J) The law on mandated reporting of child maltreatment by dentists is clear.
Completely False  = 1
False   = 2
Neutral   = 3
True     = 4
Completely True = 5

K) Receiving more education on child maltreatment would increase the likelihood of dentists reporting abuse/neglect.
Completely False  = 1
False   = 2
Neutral   = 3
True     = 4
Completely True = 5

L) I am confident in recognizing/diagnosing child abuse.
Completely False  = 1
False   = 2
Neutral   = 3
True     = 4
Completely True = 5

M) I am confident in recognizing/diagnosing child neglect.
Completely False  = 1
False   = 2
Neutral   = 3
True     = 4
Completely True = 5

N) I know the protocol for reporting child maltreatment including the laws and appropriate agencies.
Completely False  = 1
False   = 2
Neutral   = 3
True     = 4
Completely True = 5
O) Dentists have an equal role as other mandated reporters (for example, pediatricians or teachers) to evaluate and report suspected child maltreatment.
Completely False = 1
False = 2
Neutral = 3
True = 4
Completely True = 5

P) In the long run, a family is helped if a dentist reports child maltreatment.
Completely False = 1
False = 2
Neutral = 3
True = 4
Completely True = 5

Q) Reporting child maltreatment only results in a burden to the dentist and dental practice without any redeeming outcomes.
Completely False = 1
False = 2
Neutral = 3
True = 4
Completely True = 5

Please read the following 2 vignettes and respond to the questions below:

VIGNETTE ONE:
A 4 year old male presents to your office with his parents for extraction of a supernumerary tooth. You explain to the child’s parents that the patient also has multiple carious lesions and 3 small abscesses. You explain the risks of not getting treatment. The parents report that they will seek treatment for their child. After extracting the supernumerary tooth the patient does not return to your clinic. A year later, they are back and the patient has facial swelling and no apparent restorations present.

A) Do you suspect this as a case of neglect?
   o Yes = 1
   o No = 0

B) Would you report this case to the appropriate agency?
   o Yes = 1
   o No = 0

If not, how would you proceed?
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

VIGNETTE TWO:
A 4 year old new patient presents to your office as an emergency walk-in at 6 pm. Her mother reports, “She fell while playing at school and hit her lip and teeth.” On exam, there is a bleeding laceration on the
patient’s upper lip and luxated maxillary anterior teeth. You also note light bruises and faded scars on the patient’s cheeks. When you ask the mother to provide more information about the incident, she seems to become defensive and will not elaborate on the details.

A) Do you suspect child abuse in this case?
   - Yes = 1
   - No = 0

B) Would you report this case to the appropriate agency?
   - Yes = 1
   - No = 0
VITA
Neena Bhole, DMD

EDUCATION:
University of Illinois at Chicago, Chicago, Illinois 2011-2013
Certificate in Pediatric Dentistry
Master of Oral Sciences
Medical College of Georgia, Augusta, Georgia 2007-2011
Doctor of Dental Medicine
University of Illinois, Athens, Georgia 2003-2007
Bachelor of Science
Biology Major, Spanish Minor
Magna Cum Laude

VOLUNTEER EXPERIENCE:
Boys and Girls Club – Athens, Georgia and Augusta, Georgia 2008-2011
Tutoring and Oral Health Screenings

LICENSURE:
Central Regional Dental Testing Service, Board Certified May, 2011
Illinois State Dental License 2011-current

PROFESSIONAL MEMBERSHIP
American Association of Pediatric Dentists 2011- current
Chicago Dental Society 2013-current
Illinois Society of Pediatric Dentists 2011-2013