A Qualitative Assessment of Interprofessional Knowledge Gaps in the Setting of Child Physical Abuse

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ABSTRACT

Introduction: Health care professionals can protect children by identifying and reporting injuries concerning for child physical abuse, such as sentinel injuries (bruising and intra-oral injuries in precruising infants). Citing knowledge and collaboration barriers, health care professionals sometimes fail to recognize sentinel injuries as concerning for abuse. Interprofessional education may be an ideal format to improve health care professionals' responses to sentinel injuries. However, it is traditionally limited to health care professions, while responding to suspected child physical abuse requires collaboration between health care professionals and non-health care professionals. This study's purpose was to understand if an interprofessional education framework could support the need and development of interprofessional education for child physical abuse beyond health care professions.

Methods: Data were collected through semistructured interviews and analyzed using a qualitative descriptive methodology. Participants included 27 professionals who had engaged in child physical abuse responses in a US midwestern urban county. Participant professions included health care, child protective services, law enforcement, courts, victim advocates, and child advocacy center employees.

Results: Six themes were identified: 4 themes aligned with competencies of the interprofessional education framework, 1 described engaging with families, and 1 described features unique to sentinel injury investigations.

Conclusions: This study supports the need for child physical abuse interprofessional education beyond health care professions. Legal thresholds for responding to suspected abuse differ by profession, and there is no shared interprofessional language around child physical abuse. This contributes to a steep learning curve for new professionals. This study also supports that an existing interprofessional education framework can provide the foundational framework for development of such education.

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INTRODUCTION

Child physical abuse (CPA) is a United States public health problem victimizing approximately 100000 children annually,[1] posing profound health risks for children,[2-4] and significant societal costs.[5] To address this problem, health care professionals (HCPs) are tasked as mandated reporters legally required to report reasonable suspicions of CPA to child protective service (CPS) agencies.[1] Yet, protecting children from physical abuse requires that HCPs act beyond mandated reporting. They also partner with CPS, law enforcement, court systems, and other community agencies in responding to suspected abuse – often while maintaining a professional relationship with the reported child and family.[6]

Protecting children from physical abuse requires early, interprofessional responses.[7,8] As CPA disproportionately affects infants and children under 3 years of age,[1] early interventions may mitigate its lifelong associated health risks.[4] Interprofessional responses are required as no one profession can end this public health problem.[7,8] The HCP role in CPA responses may be particularly important in cases of sentinel injuries, which are early and readily identifiable CPA red flags.[2]

Sentinel Injuries of CPA

Sentinel injuries of CPA include minor injuries, such as bruising and intra-oral injuries in precruising infants.[2] Cruising, the developmental milestone of walking while holding onto furniture,

is achieved in 75% of infants by 12 months.[9] Prior to cruising, these minor injuries are highly associated with abuse[2,3] and should prompt consideration of a mandated report.[1] However, HCPs sometimes minimize the significance of sentinel injuries, failing to consider abuse.[2]

Multiple barriers contribute to HCPs' sometimes limited responses to sentinel injuries and other injuries concerning for CPA. Response barriers include HCP knowledge deficits,[10] biases,[11,12] ambiguity about reasonable suspicion as the legal reporting threshold,[13] fear of negative consequences for the child and HCP,[10] and past negative experiences with CPS.[10] Collaboration barriers include HCP confusion about reporting processes, law enforcement frustration with others encroaching on their role, CPS perceived disrespect by other professions, and role confusion by all professions.[6] Given identifying, reporting, and collaborating barriers, interprofessional education (IPE) may be an ideal pedagogical format for improving HCP responses to suspected CPA and child safety.

Interprofessional Education

IPE occurs when different professions come together to learn from, about, and with each other.[14] It improves interprofessional teamwork by impacting learner collaborative skills, attitudes, and knowledge, which is posited to improve patient outcomes.[15] IPE is rooted in health care and health sciences curricula;[14,15] however, HCPs collaborate with professions beyond health care (eg, CPS, law enforcement, court systems) when responding to suspected CPA.[6] Therefore, IPE for CPA may need to expand beyond health care and health sciences.

Interprofessional Educational Collaborative Framework

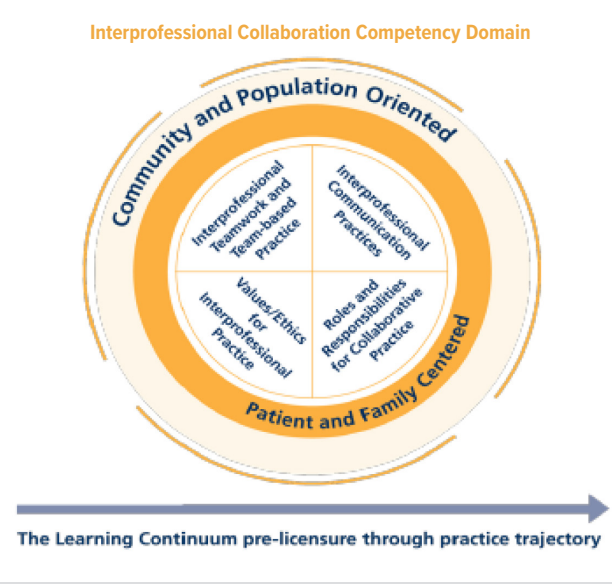
The Interprofessional Education Collaborative (IPEC)[16] provides a well-recognized framework for IPE curricula and is the primary framework supporting this study. This framework is grounded in 4 core competencies supporting interprofessional collaboration: values/ethics, roles and responsibilities, interprofessional communication, and teams and teamwork (see Figure).[16]

At the time of our study, version 2 was the current IPEC framework.[16] IPEC version 3[17] was published in 2023. While both versions support the same 4 core competencies, population health, health equity, and diversity within health care teams are newly emphasized in version 3. Yet, IPEC version 3 still does not describe the potential need for IPE to extend beyond health care professions in addressing public health problems such as CPA.

Purpose

IPE training and approaches for including non-health care professions may improve the interprofessional responses needed to protect children from physical abuse. The purpose of this study was to understand if the IPEC framework is helpful in describing interprofessional knowledge gaps and collaboration barriers in non-health care professions in the setting of CPA. This a priori knowledge is necessary for IPE curricula development. Sentinel injuries were utilized as a CPA focus as they require multidisciplinary responses, provide a mental construct to facilitate participant responses, and are often-misunderstood CPA symptoms, potentially leading to varied responses. Thus, a secondary purpose was to determine if IPE specific to sentinel injuries might require addressing additional knowledge gaps and collaboration barriers beyond those for other injuries concerning for CPA.

Figure. Interprofessional Educational Collaborative Model, Version 2[16]



METHODS

Setting and Population

Study participants were recruited from an urban US Midwestern county. A purposive—or selective—sample was utilized. Initial participants were recruited through professional, academic, and community partners of the research team. Snowball technique ensued through participant referrals. Inclusion criteria required engagement in at least 1 CPA case (not limited to sentinel injuries) in the study county during the previous 5 years. Engagement in a CPA case referred to reporting to CPS, CPS investigation, law enforcement investigation, and/or court proceedings. Sample size adequacy was determined through thematic saturation.

Study Ethics

Human subjects research approval was obtained from the Marquette University Institutional Review Board. All participants provided written informed consent prior to study participation. Participants were offered $10 gift card incentives, but several declined, as accepting gifts violated professional rules.

Confidentiality was prioritized as all participants practiced within 1 county. The research team was concerned that published participant comments might upset participants from other professions and that study participants might recognize each other

through detailed demographic identification. Demographics were collected by anonymous written survey. Professional roles were described generally or specifically in free text, at participant discretion. Race/ethnicity were not collected, with concerns some participants might be identifiable by these descriptors. Finally, group interview participants were reminded to not disclose statements made by others.

Table 1. Participant Demographics

	CAC (n = 6)	CPS (n = 2)	Attorneys (n = 5)	HCPs (n = 3)	LE (n = 6)	VAs (n = 5)	Total (N = 27)
Age, mean (SD)	42 (12.6)	36 (3)	42 (7.2)	44.3 (9)	50 (5.5)	37.8 (8.3)	42.5 (9.6)
Sex							
Female	6	2	4	3	4	5	24 (88.9%)
Male	0	0	1	0	2	0	3 (11.9%)
Years in role, mean (SD)	12.7 (7.2)	7.5 (4.5)	14.6 (5.9)	15.7 (7.8)	20.8 (3.7)	9.2 (4.2)	14.1 (7.2)
Aware of term sentinel injury							
Yes	6	2	4	3	5	5	25 (92.6%)
No	0	0	1	0	1	0	2 (7.4%)
Involved in sentinel injury cases							
Yes	6	2	5	1	5	3	22 (81.4%)
No	0	0	0	2	1	0	3 (11.1%)
Missing	0	0	0	0	0	2	2 (7.4%)

Abbreviations: CAC, child advocacy center; CPS, child protective services; HCPs, health care professionals; LE, law enforcement; VAs, victim advocates.

Study Design and Data Collection

This study utilized a qualitative descriptive design.[18] Data were collected through 8 individual and 3 group interviews, occurring during January through March 2020. Group interviews were profession-specific, organization-specific, and interprofessional-interorganizational. The first 8 interviews occurred in person; the last 3 occurred by telephone due to public health social distancing requirements. In-person interviews occurred in private offices or closed conference rooms at participant workplaces. Researcher EC conducted all interviews, utilizing an interview guide (see Appendix) developed by the study team through literature review, study team expertise, and discussion. The interview guide included open-ended questions about IPEC competencies[16] in CPA, engaging with families in CPA responses, differences between responses to sentinel injuries versus other CPA injuries, and additional needed IPE competencies not found in the IPEC framework. Interviews were audio recorded, transcribed verbatim by a professional transcriptionist, validated and deidentified by researcher EC, and uploaded into Nvivo software (NVivo. Version 1.0, QSR International; 2020) for analysis.

Data Analysis

Thematic analysis was completed through 6 phases described by Braun and Clarke: familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, naming and defining themes, and producing the report.[19] Initial analyses were completed separately by EC and KH, then compared and discussed for investigator triangulation.

Rigor and Credibility

Rigor was operationalized through the criteria of credibility, dependability, confirmability, and transferability.[20] Credibility was addressed through investigator triangulation (EC and KH) and theory triangulation with interprofessional participants and research team. Dependability was addressed through the principal investigator's field notes.[20] Confirmability was addressed 2 ways: the profession of victim advocate was added to the study at study participant recommendations, and member checks were completed during interviews to allow for participant clarification and further explanation. Finally, transferability was addressed through purposive (selective) sampling and detailed description.

RESULTS

Participants

Twenty-seven individuals participated in this study (see Table 1), including HCPs, attorneys, law enforcement, victim advocates, CPS workers, and child advocacy center (CAC) staff. The CAC is a regional multidisciplinary outpatient evaluation center for child maltreatment concerns. CAC participants were unique as they included social work and HCPs who routinely worked together. This was not true for community HCP, attorney, law enforcement, victim advocate, or CPS participants. Most participants were female (24 of 27), and years of experience ranged from 3 to 26. Participants estimated their engagement in CPA cases. Community HCPs had the lowest range (3-20), while at least 1 participant in each other group reported 100 or more cases during the previous 5 years. Most participants (25 of 27) were aware of the term sentinel injuries prior to this study, and 81.4% (22 of 27) had participated in a sentinel injury case investigation.

Themes

Six themes were identified. Four themes aligned with IPEC framework competencies,[16] 1 described interactions with families, and another described differences between responses to sentinel injuries and other CPA injuries. (Table 2 includes themes and illustrative participant quotations.)

Valuing Interprofessional Colleagues Is Shown Through Disagreeing Respectfully

Participants noted treating each other with value means you "sometimes agree to disagree." Participants reported that all professionals involved in CPA investigations want to protect children. However, they did not always agree on the best outcome after an investigation. When professionals value each other, disagree-

Table 2. IPEC Domains as Described for Child Physical Abuse and Sentinel Injury Curricula

Theme	Source	Quote
Values/Ethics: Valuing interprofessional colleagues is shown through disagreeing respectfully	Attorney	"We might agree to disagree. So really just clarifying so that I at least understand your position. It doesn't mean I am going to agree with it, but I want to make sure that I understand it and how you got to that position. It's explaining your point of view, asking them for any additional information, saying 'thank you' and then doing what you need to do."
	CPS	
Roles and Responsibilities: Professionals in different child welfare roles work under different laws	CPS	"We have a very specific framework. If it [suspected child abuse] doesn't fit, we can't intervene, even if they [HCPs and CAC] don't like it, even if they don't think it [staying in the family home] is in the child's best interest or for their well-being. We're not saying we're not concerned. But if it doesn't rise to the level of intervention, it doesn't rise to the level of intervention."
Interprofessional Communication: Interprofessional communication is intentional and potentially time-intensive	LE	"I've been out at the hospital for child abuse cases, where me and my partner [sic] sat down with the advocacy [hospital's child protection team] doctor, the social worker, the ER doc, and we're all at the table just like this and we'll go through the case. And that's very helpful, to have everyone there at the same table, literally the same table… So when we have that and everyone's on board and together, it's great."
	CAC	"I have found more success with bringing the worker [CPS] into the room to show them the injuries right away versus just looking at the photos…they'll see the extent of it firsthand versus just looking at photos. I think that that really gives them an 'aha' moment."
	Attorney	"I don't think it helps relationships when they [HCPs] are clearly resistant or annoyed by the fact that I'm asking these questions. And I'm like, 'I'm trying to understand and learn, and you should want to teach me because you called this in and you obviously want to keep this kid safe, and I'm the person trying to do that."
Teams and Teamwork: Assumptions lead to failures in teamwork	LE	"[HCPs will ask] 'And so are you going to arrest somebody?' And well, slow down…We don't violate civil rights here. We have standards to fulfill before we can make those arrests. I understand they're not lawyers or LE professionals so therefore they don't understand that we have our process."
Experiences With Families: Treating families ethically	CPS	"I'm a white woman from a middle-class family. If I go out and I work with a middle-class family, it might be easier for me to give them the benefit of the doubt because they look like me. They live like me. It's easier to make a connection. It's a natural thing. However, that's also a very dangerous route to take."
	HCP	"I oftentimes tell them [families] that I'm reporting, that I'm the advocate for the child and that's why they bring their child to me, is because they want me to do the best job I can in taking care of their child. So, part of that responsibility involves asking for help from outside organizations or from child welfare when I feel that their child is either at risk for a health issue due to neglect, where the parent can't meet their health needs in a significant way, or when I'm concerned about maltreatment."
	CAC	"We [HCPs] are taught to be very transparent with patients and families and there are times that we aren't able to be."
Potential Barriers to Reporting Sentinel Injuries	Attorney	"I look at almost all of my really serious child abuse cases and in most, if not all of them, there's a previous sentinel injury that went undetected…All of these cases to me highlight that if something had been done at an earlier date (and it doesn't have to be an arrest or a prosecution, it can be merely just having the authorities alerted or an investigation done in some way…) that the outcome for this particular child could have been very different than what I'm seeing on my desk."
	CAC	When it's not as clear-cut, I think that's when we see the drop off in buy-in where everyone's kind of like 'eh-this isn't of high priority,' versus, and I think for babies, too. Babies can't talk. They can't tell us what happened. There's only so many people that engage with a baby, you know."

Abbreviations: IPEC, Interprofessional Educational Collaborative; CAC, child advocacy center; CPS, child protective services; HCP, health care professional; LE, law enforcement; ER, emergency room.

ments are addressed without damaging relationships. In contrast, permanent harm might occur when respect is not shown. One CPS participant described disrespectful disagreements as "people sort of accusing each other of either not caring about families or not caring about children…" Participants added that disrespectful experiences are hard to forget and result in less future collaboration with a negative effect on future investigations as professionals may hesitate to work together again.

In contrast, professional disagreements mean a willingness to hear others' views. Difficult conversations, if done well, can lead to broader views. A law enforcement participant said, "… I might be thinking one track here, and then you talk to a doctor or you get the history of the family through CPS…and it makes you think differently." Even so, the idea that you still "need to do what you need to do" describes participant beliefs that collaboration does not override one's own responsibilities.

Professionals in Different Child Welfare Roles Work Under Different Laws

Participants discussed frustrations resulting from professions in CPA investigations practicing under state laws that do not align. For example, HCPs may report any concern of CPA.[21] However, CPS cannot intervene unless a child's physical injury rises to the

severity as described by state law: "…lacerations, fractured bones, burns, internal injuries, severe or frequent bruising or great bodily harm."[21] One CPS participant said, "We're not saying we're not concerned – but if it doesn't rise to the level of intervention, it doesn't rise to the level of intervention." Nonetheless, this perceived lack of action left some HCPs feeling unheard. In contrast, the CPS participants reported frustration in needing to assess concerns of abuse that (to them) clearly did not rise to a level of intervention. The disparity between HCP reporting laws[20] and laws guiding CPS responses[22] can leave both professions frustrated by others' actions and inactions.

Interprofessional Communication Is Intentional and Potentially Time Intensive

Participants used multiple descriptors to explain that effective interprofessional communication is an intentional process, including "face-to-face," "direct," "timely," "reciprocal," and "avoids profession specific jargon," and indicated that interprofessional communication often requires a lot of back-and-forth communication.

Despite being time-intensive, multiple participants reported that face-to-face communication is most effective. Direct communication improves professionalism, timeliness, and the quality of shared information. To these points, law enforcement participants voiced frustration about being consulted "weeks" after a CPS referral, as the time lapse meant potential loss of evidence. Similarly, attorneys expressed frustration about receiving information late when preparing for trial as it potentially weakened court cases. One CAC participant said she collaborated with CPS more effectively when discussing CPA findings immediately: "I have found more success with bringing the [CPS] worker into the room to show them the injuries right away versus just looking at the photos… I think that really gives them an 'aha' moment."

In contrast, the 3 HCPs said they rarely, if ever, received follow-up communication after reporting suspected abuse to CPS. Without feedback, 1 HCP wondered if reporting served any purpose as she did not know if the child became safer.

Participants said that reciprocal communication – eg, dialogue – is critical to professional communication. As professions involved in CPA investigations have different educational backgrounds and professional languages, dialogue can ensure mutual understanding. Participants reported that communication broke down when professionals resented others questioning their conclusions. However, they indicated that follow-up questions reflected a desire to collaborate better and were not intended as disrespectful or doubting another's competence.

Participants also said that avoiding profession-specific technical language decreases the need for extended back and forth communication. HCPs frequently use medical terminology not understood by other professions (eg, "subconjunctival hemorrhage" and "failure to thrive"). HCP reports of suspected abuse can lack gravity with CPS or law enforcement, who may not know medical terminology. One attorney suggested that HCPs keep information "as simple as you can" to increase the effectiveness of suspected CPA reports.

Assumptions Lead to Failures in Teamwork

Participants did not always understand how other professions arrived at conclusions in CPA investigations. These knowledge gaps can lead to negative assumptions. For example, one of the CPS participants said, "you will have an attorney who is emailing one of our staff wanting information and nobody is responding. And the conclusion they [the attorneys] reach is, 'this person isn't doing their job'." While many participants were aware of disparaging assumptions made about them or their colleagues, all were quick to explain the assumptions were incorrect.

Individuals may incorrectly assume others have similar expertise in CPA cases. One of the attorneys provided an example of when a novice CPS worker did not understand the medical and child welfare importance of failure to thrive, the reason for their shared court case. The experienced attorney described her frustration but then reminded herself that she had not always known about this diagnosis and learned "on the job" and then provided education for the novice CPS worker.

Treating Families Ethically

Treating families and children well requires being transparent, nonjudgmental, and empathetic. Participants noted that treating families well is ethical but also pragmatic, as it assists investigations. Families are more apt to provide information when they are treated respectfully. HCP participants reported that they usually tell parents when reporting to CPS.

Participants also recommended treating families objectively. HCPs said they assured parents they were not judging them but responding to clinical findings and seeking assistance for the family. Several participants discussed the need to recognize and acknowledge implicit biases. Law enforcement participants said that many families they work with are part of marginalized communities, and families were surprised when treated respectfully. Participants shared that unrecognized and unacknowledged implicit biases may lead to unfair treatment of families through either too harsh or too lenient assessments, leading to process errors in CPA cases.

Many participants empathized with parents, describing the need to be thoughtful and kind. One law enforcement participant said, "I treat them how I'd want to be treated in that situation." Objectivity and empathy were balanced, recognizing that families may not be truthful in CPA evaluations. For HCPs, this tension contradicts most interactions with families. Thus, CAC participants recommended remaining cautious – along with empathetic and objective – with families. Finally, participants from all groups said that the needs of the child's safety are always prioritized over the needs of parents and of the family.

Barriers to Identifying and Reporting Sentinel Injuries

Most participants expressed little or no discomfort about reporting or investigating sentinel injuries as red flags of CPA. Law enforcement and attorneys noted sentinel injuries may be more difficult to investigate and prosecute as these cases can be circumstantial. Several participants said this made collaboration more critical, as sentinel injury cases are not always easy to investigate.

Participants from all professions said that sentinel injuries are valuable red flags of CPA. HCPs, CAC participants, and attorneys emphasized this most strongly, sharing that they had seen the consequences of missed sentinel injuries. However, 1 CPS participant wondered if CPS referrals for all sentinel injuries might be "heavy-handed" and unnecessarily traumatizing for families because she perceived that most sentinel injuries were not diagnostic for CPA.

Most participants had received formal sentinel injury education and were familiar with the term. However, some participants misunderstood sentinel injuries to represent any injury suggesting CPA, including some fractures or some head injuries. Additionally, some participants understood "any unexpected bruising or intraoral injuries" to mean bruising needed to be near the mouth to be a sentinel injury. (When these misunderstandings were identified, researcher EC clarified the definition of sentinel injuries before continuing interviews.) Most participants agreed that ongoing, readily accessible sentinel injury education was needed due to frequent staff turnover in multiple professions.

DISCUSSION

We applied the IPEC framework to assess interprofessional collaboration in CPA responses, and we identified gaps in collaboration and knowledge. Participants have different professional languages, often work under different CPA legal mandates, and may have various levels of expertise and knowledge regarding CPA. Our results indicated that even when HCPs and other professionals recognize collaboration barriers, they do not always know how to address them. Thus, IPE could help bridge collaboration challenges to improve child safety when physical abuse is suspected.

IPE may be particularly beneficial for HCPs, who are uniquely qualified and well-positioned to protect victimized infants and young children since they may interact routinely with them during multiple well-child visits.[9,23] It was recognized by our HCP participants that reporting and participating in responses to suspected CPA may be a rare event. Even so, participants recognized the importance for all HCPs who care for children to have this knowledge. IPE may assist HCPs in developing collaborative skills needed for responding to suspected CPA.

Next steps for developing an IPE curriculum for CPA may begin in this same study county. Participants identified the need to develop ongoing, readily accessible education within their own county—potentially among new employees in each profession.

Limitations

As is common in qualitative studies, generalizability of this study is limited. It was completed with a small sample in a US Midwestern urban county with an accessible CAC. Most participants had had education regarding sentinel injuries. It is unknown if study findings would be replicated within other contexts, such as rural counties or counties in other US regions. Importantly collaboration barriers in communities without a CAC may have greater barriers to CPA knowledge and collaboration.

CONCLUSIONS

Interprofessional education may reduce barriers to collaboration between the interdisciplinary professionals charged with protecting children through suspected CPA responses. Significant barriers include not understanding the different legal thresholds among disciplines for responding to suspected physical abuse and no shared interprofessional language around CPA. IPE might improve and shorten the learning curve for new professionals involved with CPA cases. Finally, it could increase professionals' understanding of the work of other disciplines and improve interprofessional communication. The IPEC framework would provide a solid foundation for IPE curricula for CPA.

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