Better Together? A Review of Evidence for Multi-Disciplinary Teams Responding to Physical and Sexual Child Abuse

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Abstract:

Multi-disciplinary teams have often been presented as the key to dealing with a number of intractable problems associated with investigating and ameliorating the harm associated with physical and sexual child abuse. While these approaches have proliferated internationally, researchers have complained of the lack of a specific evidence base identifying the processes and structures supporting multi-disciplinary work and how these contribute to high level outcomes (Kolbo & Strong, 1997; Lalayants, 2010). This systematic search of the literature aims to synthesise the existing state of knowledge on the effectiveness of multi-disciplinary teams. This review found that overall there is reasonable evidence to support the idea that multi-disciplinary teams are effective in improving criminal justice, child protection, and mental health responses across a range of settings. The next step towards developing a viable evidence base to inform these types of approaches seems to be to more clearly identify the mechanisms associated with effective multi-disciplinary teams in order to better inform how they are planned and implemented.

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Better Together? A Review of Evidence for Multi-Disciplinary Teams Responding to Physical and Sexual Child Abuse

Abstract:

Multi-disciplinary teams have often been presented as the key to dealing with a number of intractable problems associated with responding to allegations of physical and sexual child abuse. While these approaches have proliferated internationally, researchers have complained of the lack of a specific evidence base identifying the processes and structures supporting multi-disciplinary work and how these contribute to high level outcomes (Kolbo & Strong, 1997; Lalayants, 2010). This systematic search of the literature aims to synthesise the existing state of knowledge on the effectiveness of multi-disciplinary teams. This review found that overall there is reasonable evidence to support the idea that multi-disciplinary teams are effective in improving criminal justice and mental health responses compared to standard agency practices. The next step towards developing a viable evidence base to inform these types of approaches seems to be to more clearly identify the mechanisms associated with effective multi-disciplinary teams in order to better inform how they are planned and implemented.

Introduction

Internationally, child abuse professionals, police, and medical and mental health providers have grappled with how best to respond to children that have been abused. Part of the challenge is that an understanding of *best* is highly influenced by the disciplinary background of the worker, and the agency they represent (Pardess, Finzi, & Sever, 1993). While individuals are highly motivated to work towards the best interests of children, this can be understood in different and sometimes contradictory ways depending on the perspective of the worker (Lalayants & Epstein, 2005). Children who have been physically and sexually abused and their families will interact with a variety of agencies, each with their own mandate. Multi-disciplinary work aims to improve the response through enhanced communication and collaboration across agencies, to reduce the potential for confusion, duplication, and agencies acting at cross purposes (Newman, Dannenfelser, & Pendleton, 2005).

Multi-disciplinary teams typically have highly ambitious outcomes (Cross, 2001) including higher rates of successful prosecution of physical and sexual child abuse (Miller & Rubin, 2009), the reduction of additional trauma associated with inappropriate responses to abuse , and the reduction of child trauma symptoms (Conners-Burrow et al., 2012). However, even across some of the most developed models, there is a lack of a coherent theory of change about how these outcomes will be achieved (Herbert & Bromfield, 2016), with programs relying more on a set of principles that are assumed to contribute holistically to intended outcomes. This is further complicated by the fact that many of the intended outcomes of multi-disciplinary teams depend on a complex variety of other factors external to the program (e.g. conditions in the family, decisions made by police or prosecutors based on the likelihood of obtaining a prosecution). Herbert and Bromfield (2016) suggests that multi-disciplinary teams need to not only develop a clear theory of change, but to identify

components of their response and outcomes that can reasonably be attributed to parts of the program (e.g. multi-disciplinary case review, interview support by a child advocate). While teams and approaches will differ, by identifying common mechanisms of change researchers can develop an evidence base across models. This seems particularly important given the paucity of evidence, in particular for child and family outcomes, across many of these commonly used models of multi-disciplinary practice . This would address criticisms of the lack of attention in the literature to the form and structure of particular multi-disciplinary teams (Lalayants & Epstein, 2005), helping policymakers and service planners develop teams appropriate for their jurisdiction and identify important measures to take in order to improve their implementation.

What Are Multi-Disciplinary Physical and Sexual Child Abuse Teams?

The scope of this review includes what we have termed *multi-disciplinary child abuse teams*. These include a variety of cross-agency and cross-disciplinary partnerships between agencies responsible for elements of the response to child abuse. Typically, these teams are assembled in order to improve information sharing and coordination between agencies, recognising the serious consequences poor cross agency communication can have (e.g. Child Protection Systems Royal Commission, 2016). This review will examine the evidence for all types of cross-agency teams in order to evaluate the existing quality of the evidence base of multi-disciplinary responses to child abuse broadly.

Child/Children's Advocacy Centers (CAC) are the most prominent multi-disciplinary team approach in the research literature are, an approach originally developed out of a desire to minimise the negative impacts of the criminal justice process on children (Yeaman, 1986), along with improving criminal justice outcomes (Walsh, Lippert, Cross, Maurice, & Davison, 2008), and a focus on increasing the delivery of support services (Jones, Cross, Walsh, & Simone, 2007). While there is significant variation across CACs (Jackson, 2004), the

National Children's Alliance accreditation standards mean there are some common features/principles across centers (National Children's Advocacy Center, 2013).

Children's Houses or Barnahus developed from the CAC model, modified to fit the social welfare tradition of the Nordic countries that adopted this approach (Guobrandsson, 2014). Children's Houses involve an interview under the supervision of a court judge, that is observed by each of the agencies involved in responding to the case (Guobrandsson, 2014). This interview is considered equivalent to court testimony for any future court proceedings, meaning the child does not need to testify again (Rasmusson, 2011).

Other multi-disciplinary teams are institutionalised within the standard statutory response to physical and sexual abuse, with frameworks for different agencies to share information and collaborate on case work. As an example, in New South Wales the Joint Investigation and Response Teams (JIRT) state-wide response involves co-located specialist police investigators, statutory child protection workers, and health practitioners who work within an agreed cross-agency protocol (New South Wales Ombudsman 2012). Varying degrees of cross-agency processes exist in Australian jurisdictions (Bromfield & Higgins, 2005; Herbert & Bromfield, Forthcoming), with either a co-located team, or through structured processes that require cross-agency decision-making. What each of these approaches has in common is the aim to improve the systemic response to physical and sexual child abuse through the integration of agencies, workers and resources.

MDT models in this context includes responses to child abuse built around a cross-agency agreement or protocol for how agencies and workers involved in the response will operate across their traditional agency and disciplinary lines (Lalayants & Epstein, 2005). This typically involves structured meetings (i.e. case review meetings) and shared processes (i.e. cross agency interviewing of children). In the context of this review, models may be oriented towards the investigation of alleged abuse by statutory authorities (i.e. police or

child protection), or towards the treatment of children and families affected by abuse. Many models will aim to integrate both investigative and support responses (e.g. CACs, Barnahus).

This systematic search of the literature builds on Herbert and Bromfield (2016), but going beyond CACs to include different types of multi-disciplinary approaches. This study was prompted by the discovery from the previous review that much CAC research focuses on improvements to criminal justice outcomes, with limited research evidence on child and family outcomes. Research has also highlighted considerable variation within the CAC model (Herbert, Walsh, & Bromfield, Under Review; Jackson, 2004), which suggests that amongst the body of practice many CACs will not be distinct from other MDT approaches. This overlap in practice suggests there may be some value in considering MDTs more broadly in examining the evidence of their effectiveness.

By extending the search to all types of MDTs this review aimed to broaden the focus to many different types of collaborative teams responding to physical and sexual child abuse in order to obtain a better understanding of the effectiveness of the common elements of team approaches that is generalizable across a wider variety of teams. While there is overlap in terms of the studies included in both reviews, 41% of the studies included were in Herbert and Bromfield (2016), the additional studies identified add significantly to the evidence base, particularly in terms of the child and family outcomes that were found to be lacking in the CAC literature.

The research questions aim to address: (1) what types of study designs are used to evaluate multi-disciplinary approaches to physical and sexual child abuse; (2) what types of outcomes are measured; and (3) what evidence exists for the effectiveness of multi-disciplinary approaches to physical and sexual child abuse. Questions 1 and 2 will deal with the broader body of research literature, including qualitative studies and studies without control groups, in order to provide a broad overview of approaches used, and the outcomes

associated with MDTs. Question 3 deals with studies that include a comparison between a multi-disciplinary team and a comparison or control group.

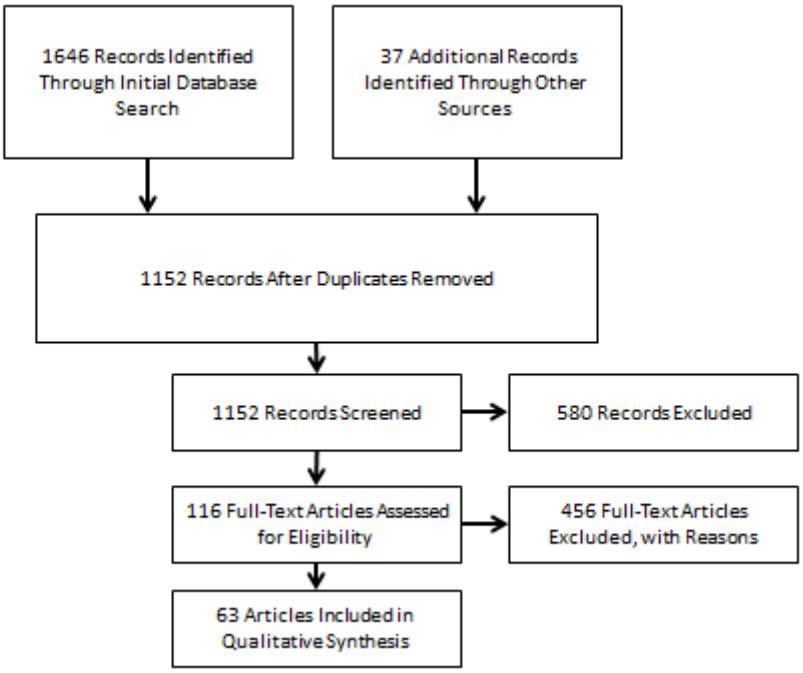
Method

A search of the Psychinfo, Medline, Embase, Proquest Dissertations and Theses, and Proquest Family Health databases was undertaken over the 9th – 28th August 2015 using the following search string: (multi-disciplin* or multidisciplin* or inter-discipli* or interdiscipli* or inter-agency* or interagency* or multi-agency or multiagency or MDT) and (child or children*) and (team* or centre* or center*) and (abus* or assault* or molest* or offen* or victimiz* or violenc* or exploit*). Searches were undertaken in both the title and abstract fields for each database, with the results then combined. The search was restricted to peer-reviewed articles published after 1980, and in English. Examinations of previous review papers were undertaken to ensure the search was comprehensive; some relevant titles were identified through the National Child Advocacy Center's (2010) review of evidence, Kolbo and Strong (1997), Lalayants and Epstein's (2005) reviews of multi-disciplinary responses to child abuse and, Herbert and Bromfield's (2016), and Elmquist et al's reviews of the evidence for CACs. An additional ad-hoc search for articles published since the original search was conducted using the same search string as above on the 6th December 2016 in Psychinfo, Medline, and Embase with no additional eligible articles found, although a systematic review of some outcomes (i.e. prosecution of offences & satisfaction of non-offending caregivers) associated with CACs was published (Nwogu et al., 2015).

Titles were included where they were found to involve direct research on types of collaborative teams responding to physical and sexual child abuse. These studies were then further examined and screened based on their usefulness in addressing the research questions. The studies included in the review (N = 63), were then sorted into categories based on the

type of study undertaken and the type of evidence produced[1]. Questions 1 and 2 included all kinds of studies evaluating multi-disciplinary team approaches; studies for question 3 were restricted to studies with a comparison between a multi-disciplinary response and an appropriate comparison condition. Many studies were excluded from this review as they merely described a multi-disciplinary model being implemented, or involved research on factors associated with the operation of multi-disciplinary teams. Many studies were also excluded as they mainly involved characteristics of the cases seen by teams, rather than providing any information about the effectiveness of those teams in achieving particular outcomes.

Figure 1. Results of the systematic search of the literature on multidisciplinary teams.



Results

The results have been split into three sections corresponding to the research questions: research designs of studies; types of outcomes included in studies; and comparisons of differences between multi-disciplinary team and comparison conditions. Broadly, the search

[1] A table summarising the included studies can be obtained on request from the corresponding author.

strategy identified studies reporting on a variety of teams (see Table 1) including multi-disciplinary teams within a CAC or a similar kind of community based collaboration (*n* = 29), therapeutically focused teams that are brought in to provide and refer children to needed services (*n* = 8), teams focused on identifying evidence of abuse for investigative purposes (*n* = 5), and hospital based teams that respond to suspected abuse cases as they present (*n* = 7). Nine of the studies included reported on the effect that closer ties or relationships between agencies have on outcomes; these studies were included as their method involved examining the effect of different degrees of cross-agency integration.

Table 1. Types of Teams Evaluated

CAC Based Team (or similar)	(*n* =29) 46%
Multi-Agency Response (studies focusing on different levels of ties or collaboration)	(*n* = 9) 14%
Therapeutic Focused Consulting Teams	(*n* = 8) 13%
Investigation Focused Team	(*n* = 5) 8%
Hospital Based Team	(*n* = 7) 11%
Other (i.e. Community Collaboration Network, Collaboration Protocol, Collaborative Committee, Interagency Protocol)	(*n* = 4) 6%
Sexual Assault Resource Team	(*n* = 1) 2%

The majority of articles included reported on research undertaken in the United States (*n* = 47; 75%), with small proportions undertaken in Australia (*n* = 6; 10%), England (*n* = 2; 3%) and other countries (*n* = 8; 15%).

The majority of the studies included in the review were evenly divided between teams that responded to a broad variety of cases of abuse and neglect (*n* = 28; 44%), or child sexual abuse specifically (*n* = 28; 44%). A smaller proportion of teams responded to physical and sexual abuse (*n* = 4; 6%), or physical abuse only (*n* = 3; 5%).

Types of Studies Evaluating the Effectiveness of Multi-Disciplinary Teams

The studies included in the review fit into four main categories: evaluations of multi-disciplinary teams with a comparison group of some type; evaluations without a comparison group; evaluations involving perceived outcomes; and studies that examine the effect that different levels of collaboration have on particular outcomes. While not directly addressing

the question of the effectiveness of teams, the inclusion of these other categories of studies address the question of the types of methods used to research multi-disciplinary teams and the types of outcomes researchers have examined in relation to multi-disciplinary teams.

Table 2. Proportions of Different Types of Studies.

Multi-Disciplinary Teams with a Comparison Group	(*n* = 22)	35%
Comparison Communities	(*n* = 9)**	14%
Different Intake (e.g. random assignment)	(*n* = 6)*	10%
Pre-Implementation of the Team	(*n* = 6)	10%
Same Case Assessment	(*n* = 1)	2%
Multi-Disciplinary Teams Without a Comparison Group	(*n* = 23)	37%
Perceived Outcomes of Multi-Disciplinary Teams	(*n* = 10)	16%
Multi-Disciplinary Responses	(*n* = 8)	13%

* One study included both Pre-Implementation and Comparison Communities for different variables.
** One study included both Pre-Implementation and Different Intake comparisons for different variables.

As outlined in Table 2, the studies with comparison groups (*n* = 22) include studies that have evaluated the effectiveness of multi-disciplinary teams against communities without such teams , or with a lower concentration of teams (Miller & Rubin, 2009). Six studies involved different intake procedures within the same community/s, this varied from random assignment to a multi-disciplinary response , to intake processes that were not explicitly explained in the study , a limitation in these types of studies discussed in detail by (Herbert & Bromfield, 2016). Five studies relied on a comparison to outcome data from prior to the implementation of a multi-disciplinary team (e.g. Wolfteich & Loggins, 2007), and one study involved comparing the initial assessment of cases by a multi-disciplinary team, to the eventual results of child protection investigations (Brink, Thackeray, Bridge, Letson, & Scribano, 2015).

A large group of studies reported on the outcomes of multi-disciplinary teams without comparison groups (*n* = 23), although some did try to identify comparison figures from other studies (Faller & Henry, 2000; Hochstadt & Harwicke, 1985). The lack of comparison data seems to be related to a number of factors, such as the difficulty of designing ethical research with a condition where abused children and their families may receive less care, and the

diffuse number of agencies administrative data would have to be obtained from to compare outcomes against a team where data is collected across agencies.

An additional classification was developed for studies included in the review that reported on perceptions of a particular outcome without directly measuring it. These were retained in the review as these studies provide an important insight to the types of outcomes that workers and clients indicated could be expected from teams, although these studies cannot provide evidence of effectiveness for the approach. A group of studies included in the review (n = 10) were classified as reporting on perceived outcomes; this is not to denigrate the quality of the research, most of these studies were appropriately conducted qualitative studies (e.g. Powell & Wright, 2012). While the views of staff working in multi-disciplinary models are an important bell-weather of effectiveness, staff perceptions of the model may be influenced by a variety of other factors.

Finally, a group of studies were included that report on the effect of degrees of collaboration across many different teams (n = 8), as distinct from the evaluation of a particular multi-disciplinary team (or a small number of teams in the case of Cross et al. (2007)). All these studies have operationalized features of collaboration between agencies (e.g. co-location, arrangements for information sharing) that would be involved in multi-disciplinary teams, and measured the effect of these on outcomes (primarily referral to services) across many different teams. As an example, Chuang & Lucio examined the effect of increased ties between child welfare agencies, schools, and mental health, with the level of ties being a composite of variables including having a care coordinator position, cross training of staff, co-location of staff, and arrangements for sharing records. Given that the presence of all these characteristics seem consistent with a multi-disciplinary team, these studies provide important information about the effect of increasing levels of collaboration have on outcomes.

The studies included were predominantly from peer reviewed journals (*n* = 53; 83%), particularly *Child Abuse & Neglect* (*n* = 22). A smaller proportion of studies were from published theses (*n* = 11; 17%).

Types of Outcomes Evaluated

The studies reported on a variety of outcomes which the teams were assessed against (Table 3), primarily criminal justice outcomes (*n* = 26), whether children and their families were referred to and received mental health and other support services (*n* = 17), child protection outcomes (e.g. removal/placement of children in out of home care; *n* = 16), characteristics associated with the response (e.g. number of interviews, involvement of particular agencies in the investigation; *n* = 19), satisfaction with the response provided by the team (*n* = 17).

Table 3. Types of Outcomes by Study Type

	Multi-Disciplinary Team with Comparisons (*n* = 22)*	Multi-Disciplinary Team without Comparisons (*n* = 23)*	Perceived Outcomes of Multi-Disciplinary Teams (*n* = 10)*	Multi-Disciplinary Responses (*n* = 8)*	Totals (*n* = 63)*
Criminal Justice Outcomes	15 (58%)	10 (38%)	1 (4%)	0 (0%)	(*n* = 26)
Receipt of Mental Health and Support Services	3 (18%)	8 (47%)	1 (6%)	5 (29%)	(*n* = 17)
Child Protection Outcomes	3 (16%)	11 (58%)	1 (5%)	1 (5%)	(*n* =16)
Process Characteristics	7 (37%)	2 (11%)	8 (42%)	2 (11%)	(*n* = 19)
Satisfaction with Approach	4 (24%)	6 (35%)	7 (41%)	0 (0%)	(*n* = 17)
Mental Health Symptoms	0 (0%)	5 (71%)	0 (0%)	2 (29%)	(*n* = 7)
Receipt of Medical Services	4 (80%)	1 (20%)	0 (0%)	0 (0%)	(*n* = 5)
Medical Symptoms	0 (0%)	1 (100%)	0 (0%)	0 (0%)	(*n* = 1)

* Most studies included more than one category of outcome.

Criminal justice outcomes

The criminal justice outcomes included mostly focused on how far through the

criminal justice process particular cases proceeded; the number of cases that resulted in arrests, charges, prosecutions, and convictions (e.g. Miller & Rubin, 2009; Sedlak et al., 2006). Three studies examined the timeliness of these events in the criminal justice process (Turner, 1997; Walsh et al., 2008; Wolfteich & Loggins, 2007). Some studies used community level crime rates to compare jurisdictions (Ruggieri, 2011; Shao, 2006).

Receipt of mental health and support services & mental health symptoms

A substantial number of studies (n = 17) also examined outcomes related to the referral, uptake and completion of mental health, counseling and other support services for children and families. These figures primarily reported the number of identified services children and families are successfully referred to. This included a group of studies that all examined the use of mental health services across large child protection data sets (Bai, Wells, & Hillemeier, 2009; Chuang & Lucio, 2011; Chuang & Wells, 2010; Cross, Finklehor, & Ormrod, 2005; Humphreys, 1995; Hurlburt et al., 2004). In comparison, relatively few studies reported on the outcomes of these services, in terms of trauma symptoms and child behavioral issues (n = 7), and no studies involved comparing improvements on mental health measures across types of approaches (e.g. CAC v Separate agency response).

Child protection outcomes

Child protection outcomes related to the actions taken by agencies in relation to child protection concerns (e.g. removal from the home), and longer-term outcomes related to the care of children over the longer term (e.g. achievement of permanent placement). Some studies reported on the rates at which abuse was substantiated at the team level to the degree that the case needed to be reported to child protection authorities (e.g. Chen et al., 2010; Wallace, Makoroff, Malott, & Shapiro, 2007), while others reported on the rates at which cases were substantiated by child protection authorities based on their investigations (e.g. Cross et al., 2005; Jenson, Jacobson, Unrau, & Robinson, 1996). Four studies also looked at

the rates of child removals resulting from claims of physical and sexual child abuse (Cross et al., 2005; Hochstadt & Harwicke, 1985; Rivara, 1985; Sahin et al., 2009), while Jenson (1996) similarly looked at whether the living situation of the children had changed three months after the report.

Process characteristics

Many studies reported on what the researchers have termed 'process characteristics'; that is parts of the multi-disciplinary response that are assumed to affect outcomes. In evaluation these may be identified as outputs, variables that suggest the intervention is being delivered as intended (Owen, 2006). In the case of multi-disciplinary teams, these include characteristics like the involvement of police and/or child protection in cases (e.g. Faller & Henry, 2000), the number of interviews or interviewers children are exposed to (e.g. Turner, 1997), whether child interviews are conducted in a child friendly environment (e.g. Cross, Jones, Walsh, Simone, & Kolko, 2007b), the degree of cross agency collaboration on a case (Walsh et al., 2008), and the involvement of children and families in the response to abuse (e.g. Goldbeck, Laib-Koehnemund, & Fegert, 2007).

Satisfaction measures

Seventeen studies examined measures of satisfaction, primarily drawing on staff (n = 10), but also caregivers (n = 8), and children (n = 4) to rate their satisfaction with the response. Staff satisfaction involved interviews that broadly asked workers about their experience in the model (Hebert, Bor, Swenson, & Boyle, 2014; Klenig, 2007; Onyskiw, Harrison, Spady, & McConnan, 1999; Powell & Wright, 2012), although most studies examined it using survey instruments (e.g. Goldbeck et al., 2007; Lalayants, Epstein, & Adamy, 2011). Standardized surveys were more common amongst studies examining satisfaction amongst caregivers (Bonach, Mabry, & Potts-Henry, 2010; Hubel et al., 2014; Jenson et al., 1996; Jones et al., 2007; Walsh, Cross, Jones, Simone, & Kolko, 2007) and

children (Hubel et al., 2014; Jenson et al., 1996; Jones et al., 2007).

Receipt of Medical services & medical symptoms

Relatively few studies included outcomes related to medical care (n = 5) and improvement in symptoms (n = 1). Primarily studies examined whether children received a physical exam as part of the response (Chomba et al., 2010; Edinburgh, Saewyc, & Levitt, 2008; Smith, Witte, & Fricker-Elhai, 2006; Walsh et al., 2007).

Evidence for the Effectiveness of Multi-Disciplinary Teams Responding to Child Abuse

The evidence for the outcomes associated with multi-disciplinary teams compared to comparison groups are reviewed below in five categories: criminal justice outcomes; mental health/support service referral and improvement in trauma symptoms; child protection outcomes; satisfaction with response; and medical referral and improvement in medical symptoms.

Criminal justice outcomes

Studies examining criminal justice outcomes were mixed in terms of finding that multi-disciplinary teams resulted in more arrests, and prosecutions than comparison groups (i.e. pre-post implementation of teams, comparison to other communities without teams, or different intake processes). Many of the earlier studies (e.g. Jaudes & Martone, 1992; Turner, 1997) found significant differences compared to more recent studies. Many of the practices of multi-disciplinary teams, and CACs have diffused into practice as usual in some jurisdictions, which may result in a higher baseline for multi-disciplinary teams in later studies. Table 4 provides a breakdown of positive and null findings amongst studies that examined criminal justice outcomes with comparisons.

Table 4. Significant and Nonsignificant Findings on Criminal Justice Outcomes Between Teams and Comparisons (Negative Findings Where Indicated)

	N	Comparison Group	Types of Abuse in Study	Significant Findings	Null Findings
CAC Based Team (or similar)					
Lippert, Cross, Jones, & Walsh (2009)	987	Comparison to Other Community	Child Sexual Abuse		Disclosure in forensic interview
Miller & Rubin (2009)	Pop*	Comparison to Other Community	Child Sexual Abuse	Felony prosecutions for CSA	
Ruggieri (2005)	Pop*	Comparison to Other Community	Child Sexual Abuse	Substantiation of CSA Prior victimisation	CSA Rates
Shao (2009)	Pop*	Comparison to Other Community	Child Sexual Abuse	CSA Rates	Physical, emotional abuse, and neglect rates
Walsh et al. (2008)	160	Comparison to Other Community	Child Sexual Abuse	Time to charging decision	Case resolution time Total case processing time
Edinburgh, Sawyc, & Levitt (2008)	256	Different Intake	Child Sexual Abuse		Criminal charges Criminal convictions Sentence length
Joa & Goldberg-Edelson (2004)	101	Different Intake	Child Sexual Abuse	Criminal charges Number of criminal charges Guilty pleas	Guilty verdicts (where cases go to court) Sentence type (where convicted) Sentence length (where convicted)
Shepler (2010)	370	Different Intake	Child Sexual Abuse		Re-victimisation Time to re-victimisation
Smith, Witte, & Fricker (2006)	76	Different Intake	Physical and Sexual Abuse	Substantiations	
Bradford (2005)	717	Comparison to Pre-Team	Child Sexual Abuse	Criminal charges Convictions (where cases are filed)	
Wolfteich & Loggins (2007)**	184	Comparison to Pre-Team	All Types of Abuse	Substantiation (CAC v MDT v standard practice)	
		Different Intake (Child Protection Team MDT)	All Types of Abuse		Substantiation (CAC v MDT) Arrest (CAC v MDT) Criminal charges (CAC v MDT) Re-victimisation (CAC v MDT
Sexual Assault Resource Team					
Campbell et al. (2012)	392	Comparison to Other Community	Child Sexual Abuse		Referred for prosecution

					Accepted for prosecution Dropped or Acquitted Plea or Trial Conviction
Investigation Focused Team					
Jaudes & Martone (1992)	264	Comparison to Pre-Team	Child Sexual Abuse	Substantiation of abuse Identification of Perpetrator Criminal Charge (where perpetrator is identified)	
Turner (1997)	155	Comparison to Pre-Team	Child Sexual Abuse	Time from report to referral to police Time from child protection receipt of report to police involvement Overall length of investigation Arrest Criminal Charges Criminal Convictions	Identification of the perpetrator
Therapeutically Focused Team					
Goldbeck et al. (2007)	80	Different Intake	All Types of Abuse		Prosecution (significantly higher rates in the control condition)

*Study involved population data e.g. number of prosecutions across the entire population of a city.
**Study involves the comparison of three conditions on some variables; a CAC, a child protection MDT lead by law enforcement, and practice before either initiative was implemented.

The studies included examined different criminal justice variables, under different types of conditions. Outcomes earlier in the criminal justice process (i.e. police substantiations) were more likely to be significantly different between teams and their comparisons (Jaudes & Martone, 1992; Ruggieri, 2011; Smith et al., 2006; Wolfteich & Loggins, 2007) than not (Wolfteich & Loggins, 2007). Across studies the results were less consistent for outcomes like criminal charges filed/prosecutions for abuse with some studies finding a significant difference (Bradford, 2005; Joa & Edelson, 2004; Miller & Rubin, 2009; Turner, 1997), and some finding no difference between teams and their comparisons (Campbell, Greeson, Bybee, & Fehler-cabral, 2012; Edinburgh et al., 2008; Goldbeck et al., 2007; Wolfteich & Loggins, 2007). Similarly the results were mixed in terms of convictions, though with more studies suggesting a significant difference (Bradford, 2005; Joa & Edelson,

2004; Turner, 1997), than studies that did not (Edinburgh et al., 2008; Joa & Edelson, 2004).

Mental health/support service referral and improvement in trauma symptoms

Studies examining the effect of multi-disciplinary teams against comparison groups in increasing the uptake of needed services predominately found a significant difference compared to different types of individual agency responses. Three studies compared the extent of service referral and the use of services, and all found that outcomes related to service use were significantly greater than the comparison condition (Edinburgh et al., 2008; Smith et al., 2006; Turner, 1997). The five studies that examined a multi-disciplinary response found mostly significant results for the effect of increased collaboration or ties between service agencies (Bai et al., 2009; Cross et al., 2005; Hurlburt et al., 2004) including collaborative characteristics that would suggest that there is a multi-disciplinary team (e.g. co-location, presence of a case review coordinator). Cross, Finkelhor and Omrod (2005) found no difference on service receipt for the types of abuse were less likely to be involved in investigating (i.e. neglect). One study found that having a single agency responsible for care resulted in an increased likelihood that clients would receive a service (Chuang & Wells, 2010).

Table 5. Significant and Nonsignificant Findings on Mental Health/Support Outcomes Between Teams and Comparisons (Negative Findings Where Indicated).

	N	Comparison Group	Types of Abuse in Study	Significant Findings	Null Findings
CAC Based Team (or Similar)					
Edinburgh, Sawyc, & Levitt (2008)	256	Different Intake	Child Sexual Abuse	Mental health screening Referral to counselling	
Smith, Witte, & Fricker (2006)	76	Different Intake	Physical and Sexual Abuse	Mental health referral (where cases were substantiated)*	
Investigation Focused Team					

Turner (1997)	155	Comparison to Pre-Team	Child Sexual Abuse	Involvement of mental health professional in interviews	
Multi-Disciplinary Response					
Bai, Wells, & Hillemeier (2009)	1613	Different levels of collaboration factors across teams	All Types of Abuse	Mental health service use Mental health improvement	
Chuang & Lucio (2011)	491	Different levels of collaboration factors across teams	All Types of Abuse	School based mental health service use Outpatient mental health service use	
Chuang & Wells (2010)	178	Different levels of collaboration factors across teams	All Types of Abuse	Inpatient mental health service use (attributed to linked databases)	Outpatient mental health service use (Collaboration and linked databases)** Inpatient mental health service use (Collaboration)**
Cross, Finklehor, & Omrod (2005)***	3842	Different levels of collaboration factors across teams	All Types of Abuse	Any service provision or referral (physical, sexual abuse, & neglect) Receipt of services for parents (sexual abuse & neglect) Receipt of services for children (physical & sexual abuse)	Receipt of services for parents (physical abuse) Receipt of services for children (neglect)
Glisson & Hemmelgarn (1998)	250	Different levels of collaboration factors across teams	All Types of Abuse		Mental health service outcomes
Hurlburt et al. (2004)	2823	Different levels of collaboration factors across teams	All Types of Abuse	Mental health service use	

*Samples were not large enough to enable a meaningful chi-square comparison; however the rates were 100% for the CAC condition, and 71.4% for the comparison condition.
**Increased interagency collaboration was related to lower use of services, the authors suggest this was due to clearer agency accountability; linked databases had a null effect on outpatient services.
*** Study examined conditions for both joint investigations and joint planning between police and child protection, as well as multi-disciplinary teams. The analysis included compared multi-disciplinary teams versus child protection alone.

Child protection outcomes

As shown in Table 8, most of the studies examining child protection related measures found

that the use of multi-disciplinary teams were associated with increased child protection related responses, although the number of studies with comparison data were very limited (*n* = 4).

Table 6. Significant and Nonsignificant Findings on Child Protection Outcomes Between Teams and Comparisons (Negative Findings Where Indicated).

	N	Comparison Group	Types of Abuse in Study	Significant Findings	Null Findings
CAC Based Team (or Similar)					
Wolfteich & Loggins (2007)*	184	Comparison to Pre-Team	All Types of Abuse	Substantiation (CAC v MDT v standard practice) Time to substantiation (CAC v standard practice)	Substantiation (CAC v MDT) Time to substantiation (CAC v MDT)**
Brink et al. (2015)	1422	Same Case Assessment	Child Sexual Abuse	Agreement between MDT assessment and child protection investigation outcomes	
Investigation Focused Team					
Turner (1997)	155	Comparison to Pre-Team	Child Sexual Abuse	Time from child protection receipt of report to police involvement	Case substantiated by child protection Family court petition
Multi-Disciplinary Response					
Cross, Finkelhor & Omrod (2005)***	3842	Different levels of collaboration factors across teams	All Types of Abuse	Out of home placement (neglect)	Out of home placement (physical, sexual abuse)

*Study involves the comparison of three conditions on some variables; a CAC, a child protection MDT lead by law enforcement, and practice before either initiative was implemented.
** MDT was significantly faster than the CAC condition.
*** Study examined conditions for both joint investigations and joint planning between police and child protection, as well as multi-disciplinary teams.

Process characteristics

Quite a few outcomes assessed by studies related more to outputs, or variables that suggest the approach is being delivered as intended such as the number of interviews or the

involvement of particular agencies in the response. Some of the older studies found that multi-disciplinary teams were able to reduce the number of interviews and interviewers child were subjected to (Jaudes & Martone, 1992; Turner, 1997), however more recent studies found no difference across conditions (Cross et al., 2007b). All studies found that teams increased police involvement and joint investigations (Cross, Jones, Walsh, Simone, & Kolko, 2007a; Smith et al., 2006), along with a number of other characteristics part of the CAC model .

A small number of studies reported on collaboration quality with comparison to standard practice in order to see how measures to implement multi-disciplinary teams affect practice level behaviors. The findings were mixed, with Cross et al. (2007b) concluding that having a CAC resulted in increased formal collaboration between agencies, while Goldbeck et al. found that inter-organizational communication did not increase with additional disciplines involved in the management of the case. Altshuler (2005) found no difference in survey ratings of collaboration over the course of the implementation of a community based multi-disciplinary team, although workers rated their collaboration at quite a high level from the start of the program.

Table 7. Significant and Nonsignificant Findings on Process Characteristics Between Teams and Comparisons (Negative Findings Where Indicated)

	N	Comparison Group	Types of Abuse in Study	Significant Findings	Null Findings
CAC Based Team (Or Similar)					
Cross et al. (2007)	1069	Comparison Community	All Types of Abuse	Police involvement in cases Multi-Disciplinary interviews Case reviews Joint Police/Child Protection investigations Video/audiotaping of interviews	Number of interviews Number of interviewers

				Interviews at child friendly facilities Formal coordination between agencies	
Smith, Witte, & Fricker (2006)	76	Different In-Take	Physical and Sexual Abuse	Involvement of police in cases	
Investigation Focused Team					
Jaudes & Martone (1992)	264	Comparison to Pre-Team	Child Sexual Abuse	Number of interviews Number of interviewers	
Turner (1997)	155	Comparison to Pre-Team	Child Sexual Abuse	Number of interviews Number of interviewers Number of interview settings	
Therapeutically Focused Team					
Lalayants et al. (2011)	500	Different In-Take	All Types of Abuse	Family focused interventions	Child centred consultations Strengths based interventions Culturally sensitive interventions Internal collaboration approach Internal collaborative approach Internal & External Collaborative Approach
Goldbeck et al. (2007)	80	Different In-Take	All Types of Abuse		Certainty in intervention planning Involvement of children and families Inter-institutional communication
Altshuler (2005)	74	Comparison to Pre-Team	All Types of Abuse		Ratings of collaboration
Multi-Disciplinary Response					
Glisson & Hemmelgarn (1998)	250	Different levels of collaboration factors across teams	All Types of Abuse		Service quality

Satisfaction with the response

Few studies provided a comparison of satisfaction with the multi-disciplinary team response compared with a standard response. Jones et al. found that caregivers were significantly more satisfied with an investigation undertaken at a CAC as opposed to the standard investigative response, but found that satisfaction did not differ between conditions for children. The researchers attributed the lack of difference in satisfaction for children to improvements in the child friendliness of investigations in non-CAC communities, along with difficulties obtaining valid quantitative measures of satisfaction from children (Jones et al., 2007). Walsh et al. found that caregivers were not any more satisfied with medical examinations at a CAC than at a standard response, primarily as both samples were highly satisfied with the exam. Both Lalayants et al. (2011), and Goldbeck et al. (2007) found that higher levels of satisfaction with multi-disciplinary responses, both from the perspective of the workers who consulted with teams for assistance, and from the teams themselves.

Table 8. Significant and Nonsignificant Findings on Staff/Caregiver/Child Satisfaction Between Teams and Comparisons (Negative Findings Where Indicated).

	N	Comparison Group	Types of Abuse in Study	Significant Findings	Null Findings
CAC Based Teams (Or Similar)					
Jones, Cross, Walsh, & Simone (2007)	284	Comparison to Other Communities	Child Sexual Abuse	Caregiver satisfaction with the investigation	Children's satisfaction with the investigation
Walsh et al. (2007)	143	Comparison to Other Communities	Child Sexual Abuse		Caregiver Satisfaction with a medical examination
Therapeutically Focused Teams					
Lalayants et al. (2011)	500	Different In-take	All Types of Abuse	Staff satisfaction with multi-disciplinary consultations	

Goldbeck et al. (2007)	80	Different In-take	All types of Abuse	Staff satisfaction with the degree of child protection	

Medical referral and improvement in medical symptoms

Again, very few studies examined outcomes related to medical referral and improvement in symptoms, but all those that did found that a multi-disciplinary team was significantly more likely to result in the receipt of medical services.

Table 9. Significant and Nonsignificant Findings on Medical Outcomes Between Teams and Comparisons (Negative Findings Where Indicated).

	N	Comparison Group	Types of Abuse in Study	Significant Findings	Null Findings
CAC Based Team (Or Similar)					
Edinburgh, Saewyc, & Levitt (2008)	256	Different In-Take	Child Sexual Abuse	Receipt of physical exam, genital exam (when indicated), and receipt of Post-Exposure Prophylaxis Positive genital trauma findings	
Smith, Witte, & Fricker (2006)	76	Different In-Take	Physical and Sexual Abuse	Receipt of medical examination	
Walsh et al. (2007)	143	Comparison Community	Child Sexual Abuse	Receipt of medical examination	
Hospital Based Team					
Chomba et al. (2010)	2863	Comparison to Pre-Team	Child Sexual Abuse	Completion of Post-Exposure Prophylaxis	

Summary of Results

Broadly the studies identified by the search provide some evidence for the effectiveness for multi-disciplinary teams on most of the outcomes discussed, although there are particular gaps in terms of high quality studies amongst a few types of outcomes. The review highlights a few areas in need of further research; along with reinforcing the need for syntheses of the literature that take into account some of the variations in form of different types of multi-disciplinary teams (Herbert et al., Under Review; Jackson, 2004). The studies included were

primarily evaluating CACs (46%) or similar types of holistic investigation and support services, in the United States (75%), with most teams focused on responding to all types of abuse and neglect (44%) or just child sexual abuse (44%).

The first research question addressed by this review focused on the types of studies used to evaluate the effectiveness of multi-disciplinary teams in responding to child abuse. 35% of the studies examined the outcomes of multi-disciplinary teams with reference to some kind of comparison group this included: studies comparing to a different community without multi-disciplinary teams or with limited use of such teams (14%); studies undertaken in the same community but with different in-take processes to provide a control group for the team (6%); comparisons of outcomes from before the team was implemented (6%); and a study where cases were assessed by both a multi-disciplinary team and whoever would usually process the case (2%). A large group of studies presented the outcomes of a multi-disciplinary team without comparison to a control group (37%), and another group of studies relied on perceived outcomes (16%), that is a methodology that relied on the perceptions of staff to report on various outcomes related to the team (e.g. perceived improvements in the referral of children to services). 13% of studies reported on the outcomes of studies of multi-disciplinary responses; cases with data that describe the presence of particular variables that suggest a higher level of multi-disciplinary practice (e.g. co-location of workers, presence of collaboration coordinator).

The second research question concerned the types of outcomes evaluated by the studies included, which were also compared across the types of studies. Nearly half of the studies included involved criminal justice related outcomes (41%), but also high proportions of studies including mental health and support service related outcomes (27%), and child protection related outcomes (30%). Across these key variables study designs with comparisons (including studies of multi-disciplinary responses) were used in 15 studies of

criminal justice outcomes, in 8 studies of mental health and support service related outcomes, and in 4 studies of child protection related outcomes.

The third and main research question concerned the evidence for the effectiveness of multi-disciplinary teams responding to child abuse, where the outcomes of teams were evaluated relative to a comparison condition. While a large number of comparative studies of criminal justice outcomes were identified, findings were somewhat mixed as to whether teams resulted in improved criminal justice outcomes. Outcomes earlier in the criminal justice process such as substantiations seem to be more likely to be significantly different across studies, which is unsurprising as many of these teams are focused on bringing increased police attention to cases (Cross et al., 2007a). This may also be due to the smaller samples available for studies of convictions, due to the relatively small number of cases that reach this point in the criminal justice system. Results were mixed for teams contributing to an increase in outcomes such as criminal charges filed, and convictions. The older studies generally found that multi-disciplinary teams resulted in improvements in nearly all criminal justice outcomes (e.g. Jaudes & Martone, 1992; Turner, 1997), while some of the newer studies were less likely to find a significant difference (e.g. Campbell et al., 2012; Edinburgh et al., 2008), which may be attributable to a higher baseline in comparison communities. This seems consistent with Lippert et al.'s observation that some of the improvements to responding to abuse associated with CACs have occurred more broadly, and most jurisdictions will have at least informally some system for collaboration on cases. In particular, Wolfteich and Loggins (2007) found that both a CAC and a multi-disciplinary team response were significantly better than tradition responses, while not significantly differing from one another on most outcomes. It can also be observed that many of the studies conducted in the same community but with different in-takes had null-findings. Many of these studies lacked a clear criterion for this differential in-take (although cases in

Goldbeck et al., 2007 were randomized), some studies have observed that there is a tendency for more complex cases across agencies to be streamed to multi-disciplinary teams (Wolfteich & Loggins, 2007), which may affect the outcomes of the teams.

Across the studies that examined mental health and support service related outcomes overwhelming teams resulted in the increased receipt of services, although there were some exceptions (Chuang & Wells, 2010). While four studies found that increased ties or features supporting collaboration between agencies resulted in increased service use (Bai et al., 2009; Chuang & Lucio, 2011; Cross et al., 2005; Hurlburt et al., 2004), three studies found otherwise. Chuang & Wells (2010) found that service use was more likely when only one agency was responsible for providing care, in contrast with many of the other studies that found that the more agencies that attempted to direct children and families into support services were more likely to result in the receipt of services. The collaboration in this study was between agencies that each may have had responsibility for service delivery (child welfare, juvenile justice), which is different from the context of other multi-disciplinary teams. Glisson and Hemmelgarn (1998) found that inter-organizational collaboration was not related to service outcomes (i.e. child behavioral measures), that organizational climate was much more important in terms of children's outcomes. Cross, Finklehor, and Omrod (2005) also had null findings in terms of increased service delivery for neglect and physical abuse, this was attributed to these matters being less likely to be investigated by police despite involvement in the multi-disciplinary team.

In terms of child protection related outcomes, studies of teams fairly consistently indicated significant differences in child protection substantiations, although this was amongst a fairly small amount of studies that involved comparison conditions. Other child protection variables (i.e. time to substantiation) were fairly evenly split in terms of significant and non-significant differences between teams and individual agency responses.

Process related variables were mostly significant, which is unsurprising given that these outcomes are mostly reflective of whether the approach is being delivered as intended. Most of the older studies found that collaboration was successful in reducing the number of interviews and interviewers that children were subjected to (Jaudes & Martone, 1992; Turner, 1997), while Cross et al. (2007b) found no differences, possibly reflecting that some of the key improvements to the response to abuse children associated with CACs has had an impact even in non-CAC communities (Lippert, Cross, Jones, & Walsh, 2009). Unsurprisingly multi-disciplinary team approaches consistently resulted in increased police involvement in cases (Cross et al., 2007a; Smith et al., 2006), increased joint investigation and interviews (Cross et al., 2007a), and other characteristics of multi-disciplinary responses . Besides Cross et al. (2007b), three other studies had null findings in terms of process outcomes. Lalayants et al. (2011), while finding multi-disciplinary consultations were more likely to deliver interventions that were 'family focused', found that these consultations were no better than single discipline consultations in delivering child centered practice, strengths based practice, culturally sensitive interventions, and even on ratings of the collaborative approach. Goldbeck et al. also found that teams did not improve practitioner certainty in planning interventions, and the involvement of children and families in their cases. Glisson and Hemmelgarn also found that service quality was not significantly associated with a collaborative response across agencies. Only three studies examined the effect of team approaches on collaboration quality, finding mixed results. Cross et al. (2007b) in a large scale study found increases in indicators of coordination across agencies (e.g. joint interviews), while Goldbeck et al. found no difference in inter-institutional communication, and Altshuler (2005) in worker ratings of collaboration.

A small number of studies examined satisfaction with the approach with reference to a comparison group. Jones et al. found that caregivers were significantly more satisfied with

the investigation at a CAC than at a non-CAC comparison community, while also finding no significant difference in terms of children's satisfaction potentially due to difficulties in measuring this. Walsh (2007) found no significant difference between caregiver satisfaction with medical examinations at a CAC compared to a non-CAC, attributing this to high levels of satisfaction across both samples. Two studies examined staff satisfaction; Lalayants (2011) found that staff were significantly more satisfied with a multi-disciplinary consultation than a single discipline consultation, and Goldbeck et al. found improved staff satisfaction with the perceived degree of child protection. Similarly, few studies examined medical referral with reference to a comparison, but the findings were unanimous about the receipt of medical care, primarily the receipt of medical examinations.

Conclusion

Expanding on Herbert and Bromfield (2016) systematic search of evidence for the effectiveness of CACs, this review set out to examine the evidence for the effectiveness of multi-disciplinary teams responding to child abuse. Differences between multi-disciplinary teams and non-multi-disciplinary team comparison groups were found most consistently in terms of criminal justice outcomes, and referral to mental health and support services. Some support was found for increased child protection substantiations and increased referral to medical services.

Table 10. Key Findings and Implications.

Searching more broadly for evidence relating to multi-disciplinary teams did result in the identification of additional research, although the number of studies that included comparison to a control/comparison group was also relatively small;
Much of the research was on criminal justice outcomes, with studies generally finding significant differences earlier in the criminal justice process, but some finding differences in terms of convictions. Many of the older studies found significant differences, which may suggest that some of the practices of CACs have been incorporated more broadly;
The research on mental health and support services overwhelmingly found that teams were more likely to result in the increased receipt of services, although there were some exceptions;

Amongst a small number of studies, teams fairly consistently were more likely to have significantly higher rates of child protection substantiations, and were more likely to result in referral to medical services;
Findings were mixed in terms of caregiver satisfaction, and staff satisfaction;
Many studies lack detail on the nature of the intervention being evaluated and details about the comparison condition the intervention is compared to;
More research is needed in terms of child and family outcomes, both in terms of the effect of more child friendly practices, and of supported referrals to therapeutic services;
Jurisdictions looking to implement multi-disciplinary approaches need to clearly identify the problem they are wanting to address in their jurisdiction and ensure that their model has the appropriate components in place (e.g. group interviewing, child and family advocacy), and mechanisms in place to review the implementation of teams.

While broadly the review found support across studies for most of the outcomes discussed, it must be noted that this review was made difficult by the lack of detail about the process of a multi-disciplinary team and fidelity to an agreed and consistent model delivered across cases. Implementation fidelity is critical to the success of all kinds of social programs (Carroll et al., 2007). Multi-disciplinary responses are an extraordinarily complex intervention, reliant on relationships between staff, attitudes about the approach, and accepted and routine work practices. Studies just focusing on outcomes of these teams without attending to implementation and process factors may be missing important information about the functioning of teams; most of the studies reviewed have just compared the outcomes of different conditions, and have assumed that the multi-disciplinary teams that are studied are functioning well. A poorly implemented or potentially dysfunctional multi-disciplinary team is unlikely to produce a better outcome than standard practice, and there are limited data in the sampled studies that provide any assurance to the reader that teams have been implemented well. While this is concerning, we should note that most of the major studies included in this review involved established, well-resourced teams (e.g. Walsh et al., 2007). Attention to implementation, while a relatively new focus in program evaluation, has important implications for interventions like multi-disciplinary teams.

Notwithstanding the criticism above, there are also limited studies that have evaluated

multi-disciplinary teams against some kind of control condition (*n* = 30; including studies that compared outcomes across many teams). The lack of these types of studies may be related to some of the ethical difficulties of providing a control condition to what is seen to be a best practice response, along with the complexity associated with obtaining data on control conditions from the myriad of agencies that would be involved in a response. The proliferation of multi-disciplinary teams and CACs seem to be built more on the satisfaction of workers with working in such teams when they are implemented well, along with addressing some of the traumatic processes children and families have been subjected to in the past. While it seems clear that well implemented teams are likely to lead to improved outcomes compared to responses built around individual agencies, some questions do remain about the optimal configurations of teams, and what needs to be done to be in place in order to foster effective teams.

Limitations

While the search strategy identified a wide variety of studies from peer-reviewed sources, a key limitation of the review was the lack of focus on grey literature. This review set out with a specific strategy to identify studies within the existing peer-reviewed research literature, however it is likely given how common multi-disciplinary approaches are that there is a considerable wealth of evaluation reports and unpublished analyses of various multi-disciplinary teams. It should also be noted that multi-disciplinary practice has been implemented broadly across many jurisdictions; indeed within Australia many standard responses could well be characterised as multi-disciplinary teams (Bromfield & Higgins, 2005; Herbert & Bromfield, Forthcoming). While identifying and reviewing these is outside of the scope of the present review, future reviews may want to consider a search strategy that would identify reports that may compare jurisdictions with collaborative processes built into statutory processes, to those that do not.

A clear limitation is the lack of research in different cultural contexts. A very high proportion of included studies were from the United States – which may limit the generalizability of the findings even to other western countries that may have different socio-legal traditions. The search was limited to articles in English, which may have limited the identification of relevant articles from other cultural contexts.

While it is outside the scope of this article to conduct a meta-analysis of the studies identified, the results of the significance testing of the eligible studies were reported. There is a long history of criticism of significance testing in psychology and social sciences (Simmons, Nelson, & Simonsohn, 2011). While this should be acknowledged, alternatives to reporting on the significance or non-significance of findings across studies remain limited without undertaking meta-analysis of findings, which requires a degree of consistency in the dependent and independent variables that does not exist in this literature (Nwogu et al., 2015).

Future Research

Beyond the observations above about the need for attention to implementation and process in the literature, and the need for studies with comparisons to control conditions, a number of key research gaps are clear. While the research was clear that multi-disciplinary teams are effective at improving referrals to mental health and counselling services no studies compared the completion of these services; that is whether the work of team members to reduce barriers to service use sustain engagement in services. This is an important step in the logic underlying improved mental health/behavioural outcomes for children from teams, without sustained engagement and completion of evidence based mental health and counselling services, the potential for improvements on mental health outcomes is limited. More focused work on the mechanisms of change associated with multi-disciplinary teams will also help to build an evidence base that can better inform the design and configuration of

teams to address challenges within each jurisdiction. It should also be noted that there is no comparative research examining improvements in trauma symptoms as a result of multi-disciplinary teams; and effect that may be related to the minimisation of systemic trauma, and/or improved referral and take-up of support services.

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Appendix 1. Studies of Multi-Disciplinary Teams with a Comparison Group (n = 22)

Reference	Cited	Outcomes Included	Comparison Groups	Place
Altshuler (2005)	Child Welfare	• Ratings of quality of collaboration; • Observer ratings of collaboration	None	Washington; United States
Bradford (2005)	Thesis	• Charges, guilty pleas, trial convictions	Cases before CAC implementation	Alabama; United States
Brink et al. (2015)	Child Abuse & Neglect	• Agreement between a multi-disciplinary team's initial findings and Child Protection eventual findings of the substantiation of sexual abuse.	Child Protection Investigation Findings	Mid-West; United States
Campbell et al. (2012)	American Journal of Community Psychology	• Criminal case progression outcomes	Equivalent community Sexual Assault Resource Team without regular meetings	Unspecified; United States
Chomba et al. (2010)	Journal of Tropical Medicine	• Completion of Post-Exposure Prophylaxis among children with suspected sexual abuse.	Cases before MDT implementation	Zambia
Cross et al. (2007a)	Child Abuse & Neglect	• Degree of interagency coordination (i.e. multi-disciplinary team interviews; joint CPS-police investigations; interagency case reviews); • Number of child interviews and number of forensic interviewers; • Interview Setting.	Equivalent within state communities without CAC	Texas, South Carolina, Alabama, Philadelphia; United States
Edinburgh, Saewyc, & Levitt (2008)	Child Abuse & Neglect	• Receipt of medical examination and STI testing; • Receipt of mental health assessment and history; • Referral for counselling; • Charges, prosecutions, sentences, sentence length	Matched cases referred to standards service delivery	Mid-West; United States
Goldbeck et al. (2007)	Child Abuse & Neglect	• Satisfaction with the degree of child protection; • Estimation of suspected child abuse; • Certainty in intervention planning; • Inter-institutional communication; • Reported legal prosecutions; • Involvement of children in planning interventions.	Randomised: Casework as usual	Germany
Jaudes & Martone (1992)	Pediatrics	• Number of interviews and interviewers; • Disclosures/initiated cases of sexual abuse; • Identification of perpetrator and investigative outcomes.	Cases before MDT implementation; Equivalent within state community without MDT	Chicago; United States

Joa & Goldberg-Edelson (2004)	Child Maltreatment	• Decision to prosecute, number and types of abuse charges, number of charges pursued by the District Attorney, number of counts no actioned, dismissed or acquitted, grand jury outcome, case outcome, type of sentence, and sentence length	Matched cases referred to traditional services	West; United States
Jones, Cross, Walsh, & Simone (2007)	Child Abuse & Neglect	• Caregivers and children's satisfaction with investigation.	Equivalent communities without CACs	Texas, South Carolina, Alabama, Philadelphia; United States
Lalayants et al. (2011)	International Journal of Social Welfare	• Child centred assessments and interventions, family focused assessments and interventions, external collaborative approach, internal collaborative approach, both internally and externally collaborative approaches. • Satisfaction with consultations.	Single discipline consultation (domestic violence, mental health, substance abuse)	New York; United States
Lippert, Cross, Jones, & Walsh (2009)	Child Maltreatment	• Denied, disclosed fully or partially, or recanted allegations of abuse	Equivalent communities without a CAC	Texas, South Carolina, Alabama, Philadelphia; United States
Miller & Rubin (2009)	Child Abuse & Neglect	• Felony prosecutions for child sexual abuse	Community with low CAC concentration	Not specified; United States
Ruggieri (2011)	Thesis	• Substantiations of abuse • Prior victimisation for sexual abuse allegations	States with a high concentration of CACs v a state with a low concentration	Kansas, Utah, New Mexico, Nebraska, Nevada; United States
Shao (2006)	Thesis	• Number of substantiated child victims per 1,000 children	Comparison communities	Alabama; United States
Shepler (2010)	Thesis	• Re-victimisation • Time to re-victimisation	Same jurisdiction, different intake cohorts	National; United States
Smith, Witte, & Fricker (2006)	Child Maltreatment	• Involvement of police in investigations; • Number of victim interviews; • Receipt of mental health referral; • Receipt of medical examination; • Substantiations of abuse; • Referral for prosecution, conviction rates	Separate intake cohort	South; United States
Turner (1997)	Thesis	• Number of interviews and interviewers;	Cases before MDT implementation	New York; United States

		• Interview settings; • Time from initial report to law enforcement contact, overall length of investigation; • Time from initial report to first counselling contact; • Time from initial report to medical examination; • Identification of perpetrator, arrests and indictments; • Child Protection substantiations and family court petitions.		
Walsh et al. (2007)	Child Abuse & Neglect	• Receipt of forensic medical examinations; • Time between first report and medical examination; • Caregiver satisfaction with the medical examination	Equivalent communities without CACs	Texas, South Carolina, Alabama, Philadelphia; United States
Walsh et al. (2008)	Child Maltreatment	• Time from initial report to charging decision and case resolution • Total case processing time;	Equivalent communities without CACs	Texas; United States
Wolfteich & Loggins (2007)	Child and Adolescent Social Work Journal	• Substantiation of abuse; • Arrest and prosecution of abuse; • Time from initial report to substantiation; • Re-victimisation (at 24 months)	Cases before CAC implementation; Child Protection Team (medically focused responses in collaboration with Police & Child Protection)	Florida; United States

Appendix 2. Studies of Multi-Disciplinary Teams Without a Comparison Group (*n* = 23)

Reference	Cited	Outcomes Included	Comparison Groups	Place
Bonach, Mabry, & Potts-Henry (2010)	Thesis	• Satisfaction with CACs (including the MDT response)	None	North-East; United States
Brown (2007)	Thesis	• Trauma symptoms, anxiety, depression, anger, post-traumatic stress, dissociation, and sexual concerns	Pre-Post Therapy	South-East: United States
Carman (2004)	Thesis	• Family empowerment, use of community resources, and satisfaction with service; • Experiences with the program.	Pre-Post; None	Georgia; United States
Carnes, Nelson-Gardell, Wilson, & Orgassa (2000)	Journal of Aggression, Maltreatment & Trauma	• Number of credible disclosures, number of credible non-disclosures, number of non-credible disclosures, and number of unclear disclosures.	None	Alabama; United States

Carnes, Nelson-Gardell, Wilson, & Orgassa (2001)	Child Maltreatment	• Number of abuse likely cases, number of abuse unlikely cases, number of cases unclear.	None	Western, Midwest, North-East, South-East; United States
Chen et al. (2010)	Children and Youth Services Review	• Cases of suspected abuse reported to authorities; • Reasons for abuse cases reported to authorities.	None	Israel
Dale & Davies (1985)	Child Abuse & Neglect	• Families engaged in rehabilitation services.	None	England
Faller & Henry (2000)	Child Abuse & Neglect	• Involvement of police in investigations; • Involvement of child protection in investigations; • Child disclosure of abuse; • Caretaker response to abuse; • Offender confession, offender pleas, trial and child testimony, and sentences.	Comparison to figures from a number of different studies	Mid-West; United States
Farrell et al. (1981)	Pediatrics	• Identification of the source of gonorrhoea; • Identification of gonorrhoea cases through sexual abuse.	None	Ohio; United States
Glassner (2011)	Thesis	• Incarceration of alleged offender and length of sentence.	None	Texas; United States
Hochstadt & Harwicke (1985)	Child Abuse & Neglect	• Number of recommended services received; • Legal status and residence of child at discharge and follow up (at 12 months)	Comparison to service receipt figures from a previous study	Chicago; United States
Hubel et al. (2014)	Journal of Child Sexual Abuse	• Depression, anxiety, loneliness, trauma, fears about victimisation, caregiver reports of behavioural problems, family adaptability and cohesion, family coping, parenting stress; • Child and parent satisfaction with treatment;	Pre-Post for treatment	Mid-West; United States
Humpheries (1995)	Child Abuse & Neglect	• Referral, attendance, and completion of counselling services	None	Sydney; Australia
Jenson et al. (1996)	Child and Adolescent Social Work Journal	• Child and parent satisfaction; • CAC member satisfaction; • Child behavioural and emotional measures; • Investigation and substantiation by child protection; • Investigation by police, arrests, criminal filings; • Children's living situation (3 months); • Referrals to counselling	None; Pre-Post for behavioural and emotional measures	Utah; United States
McKeown (2012)	Journal of Children's Services	• Receipt of services • Collaboration	None	Ireland
Oral et al. (2001a)	Child Abuse & Neglect	• Child mortality, physical/emotional handicaps, lost to follow-up, healthy/free of re-abuse;	None	Turkey

		• Report to social affairs bureau, social affairs bureau follow-up; • Removal from family; • Report to law enforcement		
Powell & Cauchi (2013)	Police Practice and Research: An International Journal	• Victim satisfaction with the response	None	Victoria
Rasmusson (2011)	Child Indicators Research	• Children's experience of the investigation; • Parent's experience of the investigation.	None	Sweden
Rivara (1985)	Child Abuse & Neglect	• Compliance with treatment recommendations; • Re-victimisation; • Abuse and neglect of siblings; • Removal from home	None	Tennessee; United States
Sahin et al. (2009)	The Turkish Journal of Pediatrics	• Substantiation of abuse; • Receipt of medical care; • Receipt of mental health care; • Receipt of social support; • Reports to social services; • Removal from home; • Arrest and charging of perpetrators	None	Turkey
Sedlak et al. (2006)	Child Abuse & Neglect	• Child protection substantiation, dependency court filings; • Referrals to police, investigations, arrests, prosecutions, criminal filings, completion of criminal proceedings, pleadings and findings of guilt	None	Unknown; United States
Stefanovics et al. (2014)	Child Abuse & Neglect	• Improvements on Children's Global Assessment Scale at entry, 3 months, and/or 6 months	None	Brazil
Wallace et al. (2007b)	Child Abuse & Neglect	• Decision to report alleged abuse;	None	Ohio; United States

Appendix 3. Studies of Perceived Outcomes of Multi-Disciplinary Teams[2] (*n* = 10)

Reference	Cited	Outcomes Included	Research Approach	Place

[2] This includes outcomes reported by participants that were not specifically researched, and not directly involving the participant.

Bross, Ballo, & Korfmacher (2000)	Child Abuse & Neglect	• Professional's evaluation of the benefits of the team; • Satisfaction with team (survey)	Interview & Survey	Alaska, Colorado, Idaho, Wyoming; United States
Cole (1998)	Thesis	• Perceptions of achievement of goals of culturally sensitive practice, development of guidelines, and clearly define procedures, equal access to services and treatment, individual understanding of roles, access to information in agencies; • Perception of improvements in services to respond to and resolve cases; • Community awareness of the service, and of child abuse generally; • Perceptions of strengths, weaknesses/limitations of program	Survey	California; United States
Doss & Idleman (1994)	Child Welfare	• Familiarity with collaborative protocol; • Use of a case management review team; • Frequency of meetings; • Perceived improvements to interagency cooperation and interaction.	Survey	Georgia; United States
Hebert et al. (2014c)	Australasian Psychiatry	• Perceived strengths and weakness of collaboration; • Practitioner perceptions of patients; • Changes in treatment approach; • Changes in case management practices.	Interview	Queensland; Australia
Jones et al. (1998)	Child Abuse & Neglect	• Perceived usefulness; • Perceived value for determining the safety of child, evaluation of witnesses, information discovery, and whether it determined the outcomes of cases;		Arkansas; United States
Klenig (2007)	Thesis	• Perceived satisfaction with the service, satisfaction with implementation and integration, level of support.	Interviews	Western Australia; Australia
Onyskiw et al. (1999)	Child Abuse & Neglect	• Perceived benefits of the approach	Interviews	Canada
Powell & Wright (2012)	Current Issues in Criminal Justice	• Strengths and difficulties; • Perceived impact; • Experience of co-location; • Future concerns, considerations, and support for expansion	Interviews	Victoria; Australia
Untz (2006)	Thesis	• Perceived effectiveness in serving their communities, addressing cultural needs, and providing follow-up support	Surveys	California; United States
Webber, McCree, & Angeli (2013)	Child & Family Social Work	• Exposure to protocol; • Inter-agency relationships;	Surveys	England

		• Perceived effect on practice; • Perceived effect on safeguarding children; • Perceived Effect on criminal justice outcomes.		

Appendix 4. Studies of Multi-Disciplinary Responses (n = 8)

Reference	Cited	Outcomes Included	Comparison Variable	Place
Bai, Wells, & Hillemeier (2009)	Child Abuse & Neglect	• Mental health service use • Mental health outcomes	Degree of ties between child welfare and mental health agencies	National; United States
Chuang & Lucio (2011)	Advances in School Mental Health Promotion	• Mental health service use	Degree of coordination between child welfare, schools, and mental health agencies	National; United States
Chuang & Wells (2010)	Children and Youth Services Review	• Mental health service use	Degree of collaboration between child welfare and juvenile justice agencies	National; United States
Cross, Finklehor, & Omrod (2005)	Child Maltreatment	• Substantiation of abuse; • Removal of children from home; • Service referrals for child and/or family	Degree of collaboration between Police and Child Protection	National; United States
Darlington, Feeney, & Rixon (2004)	Children and Youth Services Review	• Experiences and difficulties with working together	Degree of collaboration between child protection and mental health services	Queensland; Australia
Fryer et al. (1988)	Child Abuse & Neglect	• Worker satisfaction; • Worker confidence in skills	Differing levels of access to and use of MDTs	National; United States
Glisson & Hemmelgarn (1998)	Child Abuse & Neglect	• Service quality; • Service outcomes.	Degree of coordination between children's service agencies	Tennessee; United States
Hurlburt et al. (2004)	Archives of General Psychiatry	• Mental health service use	Degree of coordination between child welfare	National; United States

			and mental health agencies	