Evidence In-Sight:
Case management in child and youth mental health services

Date: January, 2012
Updated June, 2014
This report was researched and written to address the question:

- According to the literature, what are evidence-informed models of case management in child and youth mental health services?
- What are the implications for staff workload and caseload?

We prepared the report given the contextual information provided in our first communications (see Overview of inquiry). We are available at any time to discuss potential next steps.

We appreciate your responding to a brief satisfaction survey that the Centre will e-mail to you within two weeks. We would also like to schedule a brief phone call to assess your satisfaction with the information provided in the report. Please let us know when you would be available to schedule a 15-minute phone conversation.

Thank you for contacting Evidence In-Sight. Please do not hesitate to follow up or contact us at evidenceinsight@cheo.on.ca or by phone at 613-737-2297.
1. **Overview of inquiry**
This report was written for a large, multi-site, multi-service agency that provides mental health support and services for children, youth, and families. The agency was interested in exploring research on case management models that addresses the impact of working with families/caregivers, workload implications and recommendations on caseload per staff. The agency was particularly interested in research that includes feedback from clients. This report may help to advise management processes for structuring service delivery and providing input around workload for each program area. It may also help to inform agency case managers.

2. **Summary of findings**
   - Case management is a major component of mental health care and can be preferable to hospital care.
   - Case management may improve quality of life for clients by increasing service use.
   - Case management for youth includes coordinating care with psychiatrists, other mental health service providers and school personnel, and making referrals to other supports and services.
   - Case management may be particularly beneficial for children with severe behavioural and emotional problems.
   - A review of the adult case management literature found that when compared with treatment as usual, case management is associated with greater improvement in symptoms, fewer hospital days used, fewer hospitalizations, more contacts with mental health and other services, lower dropout rates from services, greater improvement in social functioning, greater client and family satisfaction with care, less family burden of care and lower total cost of care.
   - A review of adult case management found that one model, Assertive Community Treatment for frequently hospitalized clients, can substantially reduce the cost from hospitalization while at the same time improving outcomes and patient satisfaction.
   - Intensive case management programs for youth with severe emotional disturbance has been shown to be effective at reducing hospitalizations, hospital days and increasing the number of days spent in the community.
   - Case management can link youth with mental health services and support continuing service contact, which helps with engagement and retention.
   - Caseload should be determined with regard to the tasks case managers are expected to perform, in relation to the proportion of their workload allocated to case management. Other factors include the level of need among clients, the expectations of the case manager and the outcomes expected of the intervention.
   - When compared with other forms of mental health care, client and family satisfaction are high for those receiving case management services.

3. **Answer search strategy**

4. Findings

Case management is a collaborative, client-driven process intended to support clients’ achievement of realistic goals within a complex health, social and fiscal environment (National Case Management Network, 2009). The goal of case management is not necessarily recovery but to improve accessibility to care, promote accountability and efficiency (Intagliata, Willer & Egri 1986), provide stabilization and improve client outcomes (Hesse, Broekaert, Fridell, Rapp & Vanderplasschen, 2007). It is rooted in collaboration across agencies and is particularly applicable in social practice (Zoffness, Garland, Brookman-Frazee & Roesch, 2009). Case managers who work with individuals with mental illness are typically bachelor’s or master’s level social workers or from another social service field (Klinkenberg, Calsyn & Morse, 2002).

This report provides a snapshot of case management practices for both youth and adult populations in the field of mental health. Research specific to case management in child and youth mental health services is limited. While there is extensive literature on case management for adults, we cannot confirm the generalizability of these findings to children and youth. For instance, the only research on case management caseloads we identified involved adult clients. Findings such as those pertaining to family satisfaction are promising but we cannot provide concrete recommendations based on the identified literature. The table provided in Appendix A gives a synopsis of the main research on outcomes related to case management.

Models of case management

Case management can take many different forms such as a broker model or more intensive direct clinical care (Burgess & Pirkis, 1999). In a standard case management model, an individual or a group of case managers have primary responsibility over a caseload. In this report, case management refers to several models including Community Treatment Team (CTT), Clinical Case Management (CCM), Intensive Case Management (ICM) and Assertive Community Treatment (ACT). In brief, CTT is characterized by intense treatment of a client with trained staff (Sands & Cnaan, 1994). In CCM, one person is responsible for conducting a needs assessment, creating a treatment plan and coordinating access to services (Ziguras, Stuart & Jackson, 2002). ACT and ICM share very similar definitions and are not consistently distinct in the literature. They both involve multidisciplinary teams, small caseloads and the use of an assertive outreach approach (Smith & Newton, 2007). Two defining features of ACT are 24 hours-a-day, seven days-a-week team availability and input from a part-time psychiatrist. A consistent, distinctive element of ICM is that it does not involve shared caseloads, whereas ACT does (Smith & Newton, 2007).

Although each model of case management is distinct, a major limitation of the literature is that definitions are inconsistent between authors. Additionally, intensive types of case management vary considerably in the intensity of services offered. The difference between case management and other intensive types of treatment is narrowing as case management has evolved and now includes frequent contact, including home-based contact (Smith & Newton, 2007).

4.1 Case management for children and youth

It has been suggested that case management is an essential service for children with emotional or behavioural challenges because it helps them to move through the system as their needs change while ensuring the delivery of multiple services (Stroul & Friedman, 1986). However, compared to research involving adults, there is little research on case management for children and youth (Burns, Farmer, Angold, Costell & Behar, 1996; Schley et al., 2008; Schley,
Case management

Radovini, Halperin & Fletcher, 2011; Shannon, Walker & Blevins, 2009). Services provided by a case manager for children and youth can involve linking clients to different services, planning and implementing a treatment plan, and advocating on their behalf (Burns et al., 1996). Duties typically include working with the families, community agencies and resources to make sure necessary services and support are in place (Stroul & Friedman, 1986). Additionally, case management for youth can include coordinating care with psychiatrists and school personnel and making referrals to other services and supports (Zoffness et al., 2009).

One potential benefit of case management for youth in particular is its effectiveness in linking youth with mental health services and continuing service contact (Bender, Kapp & Hahn, 2011). This is an important consideration because youth tend to have a low retention rate in services. Adolescents who receive more case management services tend to participate in more mental health treatment, regardless of the severity of their symptoms and socio-demographic factors, indicating that case management may be an effective means of maintaining services and reducing drop-out rates (Bender et al., 2011).

Case management for youth with emotional and behavioural problems

Case management may be particularly relevant for children and youth struggling with severe behavioural and emotional problems (Neill, 2006), such as those with psychiatric symptoms and significant functional impairment (Burns et al., 1996). Youth experiencing such difficulties who are assigned to a case manager tend to have more participation in services, use more community-based services, have fewer incidences of running away and are often hospitalized for fewer days (Burns et al., 1996). Improvements in internalizing and externalizing psychiatric symptoms (Baier, Favrod, Ferrari, Koch & Holzer, 2013; Cauce et al., 1994), along with increases in self-esteem (Cauce et al., 1994) have also been associated with case management. In particular, ICM programs have been shown to reduce the number of hospitalizations and the number of days spent in hospital for youth experiencing severe emotional disturbance, in addition to increasing the number of days spent in the community (Evans, Banks, Huz & McNulty, 1994). A 12-month evaluation of an ICM approach that aimed to support children and families struggling with serious emotional or behavioral challenges found positive outcomes. For instance, after the intervention, the participants who were originally at risk of being removed from their homes had found significantly less restrictive community-based residences (Yoe, Santarcangelo, Atkins & Burchard, 1996). Although several negative behaviours decreased after participation in the program, target issues such as truancy, contact with police, alcohol use and suicide attempts were not improved (Yoe et al., 1996). Another study found ICM to be successful in improving the outcomes in children with emotional or behavioural maladjustment (Clark et al., 1994). The model of service that was used involved a multidisciplinary team of family-centered clinical case managers and other family specialists who led interventions incorporating strengths-based assessments, life domain planning, clinical case management and various other support services (Clark et al., 1994). Baier et al. (2013) found that assertive community case management may also be a promising intervention approach for severe cases of psychiatric disorders in adolescents.

Intensive Mobile Youth Outreach Service is one case management model that has been used for at-risk youth who display signs of mental illness. In an evaluation of the model by Schley et al. (2008), 47 youth with a mean age of 15.5 years received the outreach service in a natural setting (e.g. the youths’ home). The team provided services Monday through Friday during business hours and a Youth Access Team was available 24-hours a day, seven days a week. The team was staffed by three psychologists, two social workers, one occupational therapist and one psychiatric nurse. Each
A full-time clinician carried a caseload of eight to nine youth and provided an average of two home visits per client per week. Supports were offered to the family and school. At six-month follow-up, the frequency of hospitalization was reduced by 29% and the average length of time in hospital was reduced by six days. The intervention led to a significant reduction in both the number of clients requiring admission and the number of inpatient days compared with the previous nine months of office-based treatment. In addition, clients were less likely to engage in self-harming behaviours, be involved in violence and crime, and to have contemplated suicide. However, there was no change in levels of substance abuse (Schley et al., 2008). These study findings are limited due to the absence of a control group.

**Case management for unique populations**

Case management might be a useful support for youth considered at high risk, including adolescent mothers, youth who are homeless or in foster care, and those on the autism spectrum. A study involving adolescent mothers receiving case management services found that that ICM helped lower the number of subsequent births among low-income clients (Lewis, Faulkner, Scarborough & Berkeley, 2012). In another study, teen mothers’ parenting attitudes improved following a home-visiting intervention that combined case management and parenting programs (McKelvey, Burrow, Balamurugan, Whiteside-Mansell & Plummer, 2012). Although this study did not focus exclusively on the impact of case management, the intervention’s positive outcomes were consistent with Wagner and Clayton’s (1999) findings in which the addition of case management services benefited parenting education.

Interventions for foster care and homeless children were explored in a systematic review by Zlotnick, Tam & Zerger (2012). Out of the 26 reviewed studies that featured case management interventions, most reported positive outcomes with regards to family stability, child outcomes and satisfaction with services. However, most studies did not use rigorous designs, limiting the extent to which the reported evidence should be used to inform clinical practice (Zlotnick et al., 2012). Nevertheless, researchers emphasized the relevance of the case manager’s role in coordinating housing resources for homeless youth and in attending to their immediate needs (Zlotnick et al., 2012).

Case management also might be a support for youth with autism spectrum disorder after leaving high school. In a nationally representative population sample, case management accounted for 42% of support and special education services used by these transitioning youth, although the study did not investigate outcomes associated with case management service use (Shattuck, Wagner, Narendorf, Sterzing & Hensley, 2011).

Despite showing promise in certain areas, case management is not always associated with improved outcomes. A meta-analysis of the literature on juvenile diversion programs found that case management interventions did not significantly reduce recidivism rates in young juvenile offenders (Schwalbe, Gearing, MacKenzie, Brewer & Ibrahim, 2012). The study drew conclusions from 21 different interventions that either incorporated or fully relied on case management models and yielded overall weak evidence. However, further analyses suggested that enhancing participant engagement and leadership may be key factors to improving outcomes for delinquent youth. Subsequent development and evaluation of case management-based diversion programs should place more emphasis on this aspect of intervention (Schwalbe et al., 2012).

**Parent satisfaction**
Parents and primary caregivers of children and youth with severe emotional difficulties report being largely satisfied with the case management services they received (Measelle, Weinstein & Martinez, 1998). Variations in the number of days spent in care, length of service and caseload sizes do not seem to affect parent satisfaction. More frequent contact with the case manager every month and fewer days spent in-hospital are related to higher rates of parental satisfaction, regardless of child diagnoses, severity of impairment and stress levels (Measelle et al., 1998). One investigation of parental satisfaction with case management services indicated very positive results, with the majority of respondents reporting high satisfaction scores (Martin, Petr & Kapp, 2003). Parents reported being most satisfied when they felt engaged and consulted throughout their child’s entire case management process (Martin et al., 2003). Browne, Cashin & Graham’s (2012) review also highlighted the importance of providing family-focused case management services and developing strong partnerships with parents.

4.2 Case management for youth with complex health care needs

Case management is typically applied in health care settings to reduce the length and number of hospitalizations among patients with complex health issues and complications (Svoren, Butler, Levine, Anderson & Laffel, 2003). Patients are identified as candidates for case management if they are at high risk for excessive use of resources, poor outcomes or poor coordination of services (Norris et al., 2002).

For youth, accessibility to treatment increases compliance. For this reason, providing a single source where all services are available is important (Johnson et al., 2003). Youth who are the hardest to keep in treatment can receive appropriate care under the services of a case manager to coordinate care from a team of practitioners.

This type of coordination is particularly important in the treatment of high-risk, hard to reach clients, such as HIV-infected youth (Harris et al., 2003). Medical care alone is not sufficient for this population and supportive program elements such as flexible scheduling and a multi-disciplinary team are necessary (Johnson et al., 2003). For example, case managers can help to coordinate provision of housing, transportation, child care, emergency financial assistance, prescriptions and help youth connect with a personal support system (Johnson et al., 2003). Regardless of their demographic or HIV profile, youth have been found to stay more consistently in care if they receive specific support services (Harris et al., 2003). Satisfaction with case managers within this context is high. For instance, in one study youth reported that they considered their case managers to be a part of their social support network (Johnson et al., 2003).

For independent minors and youth over 18 years, parents may be involved in the case management process if the youth gives permission (Johnson et al., 2003).

The assignment of a case manager to youth with diabetes has been found to significantly increase the number of visits to a specialty center (Svoren et al., 2003). Although increasing visits to a clinic is not sufficient to reduce acute complications, the addition of a psychoeducation component into the case management intervention has been found to decrease adverse outcomes for the patient, including hospitalization, emergency department use and hypoglycemic events (Svoren et al., 2003). One of the most important principles of case management is the constant availability of a clinical team member to respond to questions and provide support for clients (Johnson et al., 2003). Youth are best able to engage in treatment when the clinic schedule and medication regimens fit their personal and school schedule.
Peer involvement
In working with HIV-infected youth, peer involvement reinforces the effectiveness of case management because it sets the tone for a youth-friendly treatment setting and atmosphere (Johnson et al., 2003). Also known as case aides, these peers volunteer to enhance client comfort and engagement in different ways, but they must be well trained and carefully supervised by the case manager. Similar to mental health care, the case manager and case aide help the adolescent negotiate services, make referral appointments, complete forms, comply with medication and coordinate transportation. A peer advocate can even provide support by accompanying the patient to support groups and appointments (Johnson et al., 2003).

4.3 Case management in adult mental health services
The effectiveness of case management
The effect of case management is difficult to measure with any treatment population because it is one component among a diverse array of interventions and services (Burns et al., 1996). However, adult literature on case management identifies several factors that may play a mediating role in its success, including the relationship between the assessor and the client, practitioner and agency fidelity to the model of management, availability of staff, availability of other resources, amount of funding available for services and characteristics of the client (Holloway, 1991; Ziguras & Stuart, 2000).

Systematic reviews of case management interventions for adults with complex mental health care needs have come to contradictory conclusions about the impact of case management in mental health services (Ziguras, Stuart & Jackson, 2002). Most reviews conclude that this type of service is effective in improving outcomes for clients (Ziguras & Stuart, 2000; Ziguras et al., 2002). In 1998, the Cochrane library published a review of case management (Marshall et al., 1998) that generated resistance and debate. The review concluded that case management moderately increases a severely mentally ill person’s chance of being followed in the community and that case management nearly doubles the number of hospital admissions (Marshall et al., 1998). The review was heavily criticized for a number of reasons (Smith et al., 2007; Ziguras & Stuart, 2000). First, only nine studies were included in the review and there were substantial differences between studies (Rosen et al., 2001). Second, the review used a very narrow definition of case management when selecting articles to include. Third, the review was criticized for its choice of main outcomes. For instance, it measured success by decreases in hospital admissions but disregarded changes in the duration of patients’ hospitalization (Parker, 1997). It was argued that the reported outcomes did not accurately reflect a failure on the part of the system (Parker, 1997) and failed to provide sufficient context with regard to the usefulness of care services (Smith et al., 2006).

In 2000, a follow-up Cochrane review on this topic focused on Assertive Community Treatment (ACT) for individuals with severe mental disorders (Marshall & Lockwood, 2000). The review concluded that ACT was an effective approach for managing care for severely mentally ill adults. The review concluded that with high users of in-patient care, ACT can substantially reduce costs of hospitalization care, while improving outcome and patient satisfaction at the same time (Marshall & Lockwood, 2000).

A 2007 review concluded that assertive types of ICM can reduce the number of days spent in hospital, improve engagement and compliance, independent living and patient satisfaction. However, there is insufficient evidence for the effectiveness of case management to reduce the number of admissions and improve symptoms, social functioning and
The authors of the review suggest that the question *does case management work?* is too simplistic and that one must specify the type of case management to determine its benefits (Smith et al., 2007).

To investigate whether different case management models achieve different outcomes, Sands and Cnaan (1994) compared Intensive Case Management (ICM) and a Community Treatment Team (CTT). CTTs worked intensively with patients upon discharge from a psychiatric hospital, while ICM teams operated out of community mental health centres and provided a less intensive form of care than the CTTs. Client participants in the two groups were matched with respect to age, sex, race and psychiatric diagnosis. CTTs worked at a ratio of 1 to 5 while the ICM teams saw clients at a 1 to 20 ratio. The CTT program met with clients weekly compared to every 2 weeks for the ICM; staff training in the CTT program was more intense at 6 weeks compared to 3 weeks for the ICM. Outcomes measured included medication compliance, re-hospitalization, the use of community services, engagement in recreational activities, contact with social supports and length of time in housing. At follow-up, both groups receiving services were doing well. There were no differences in the number of re-hospitalizations and both groups had stable housing and made use of community and recreational services. The main difference in outcomes was in terms of compliance to medication: all clients in the CTT group took medications regularly, while those in the ICM group had a 79% compliance rate. The major finding of this study was that the difference between the intense care and moderately intense care is very small. The authors suggested that intense care may not be productive as it may generate some type of ceiling effect.

When compared with treatment as usual (e.g. regular psychiatric services or standard treatment in outpatient clinics), case management is associated with greater improvement in symptoms, fewer days in hospital, fewer clients hospitalized, more contacts with mental health and other services, lower dropout rates from mental health services, greater improvement in social functioning, greater client and family satisfaction with care, reduced family burden of care and lower total cost of care (Ziguras & Stuart, 2000). Clients in case management programs are admitted to hospital more frequently than clients receiving standard care, but admissions are shorter and the overall impact of case management on hospitalization is positive (Ziguras & Stuart, 2000). By initiating an increased level of service use, case management may lead to greater quality of life and better mental health outcomes (Goering, Wasylenki, Farkas, Lancee & Ballantyne, 1988).

**Cost effectiveness**

For individuals at risk of repeated hospitalization, ACT can be a cost-effective alternative to hospitalization (Goering et al, 1997). Specifically, ACT has been found to decrease hospital use while making no difference in cost to the public mental health system (Essock et al., 1998). In order to be cost-effective, ACT treatment may be most appropriate for clients who are severely ill and who are heavy users of hospital services (Essock et al., 1998). Compared to a more general form of case management, one study found that ACT was more cost-effective for clients who were hospitalized at study entry. Other studies have found ICM to be cost effective as it reduces the frequency and duration of acute inpatient visits (Drake et al., 2000).

**Caseload and staff satisfaction**

Wykes, Stevens and Everitt (1997) investigated stress levels and overall staff well-being in community care teams. The researchers found that high levels of burnout are experienced by these care providers as a result of various work stressors. Case managers have a vested interest in the success of their clients and may feel more responsibility for
suicidal patients. There is no evidence that any particular type of community care produces less emotional exhaustion, but working in an inner city has been found to be particularly demanding. In addition, case managers who travel long distances for home visits or work in isolation may feel a lack of support from colleagues, while also being at increased risk of assault. Staff on fixed work schedules report feeling less stressed than those on flextime, as do those who take sick time as necessary (Wykes et al., 1997).

Caseloads were found to have a significant impact on the self-perceived performance of case managers (King, Le Bas & Spooner, 2000). The ideal caseload should be judged in light of the proportion of the case manager’s workload that is specifically allocated to case management. Typically, case managers are assigned less than half their working time to non-case management tasks for individuals at risk of repeated hospitalization duties including crisis work, psychotherapy, education and other liaison roles (King et al., 2000). The ideal staff to client ratio for an ICM service ranges from 1:10 (Taube, Morlock, Burns & Santos, 1990; Witheridge, 1991) to approximately 12:1 or 15:1 (Rapp, 1998). No studies have found positive client outcomes with caseloads greater than 20:1 (Rapp, 1998), as a heavier caseload leaves staff less time to work with individual clients and leads to reactive rather than proactive styles of working (Intagliata et al., 1986). Factors that should be taken into consideration when determining caseload include the level of need among the clients being served, the general expectations of the case manager (Stein, 1990) and the outcomes or benefits expected out of the intervention (Witheridge, 1991).

Client satisfaction and staff considerations
When compared to other forms of mental health care, client satisfaction is high for those receiving case management (Ziguras & Stuart, 2000). The case management literature highlighted the following service considerations that contribute to better client experiences (Rapp, 1998):

- The frequency of case manager to client contact has more impact than the number of hours of contact.
- Case managers can be paraprofessionals (i.e., have completed an undergraduate degree), but they should have access to specialists.
- Although the intensity of the services provided by the case manager will vary, the duration of services should be indefinite. While short-term case management can produce short-term gains, the continuity of the relationship is important and clients should not be required to switch to different case managers.
- A team of case managers is recommended for the purposes of problem-solving, sharing resources and support. In addition, clients should have access to round the clock crisis and emergency support.

Family members of patients working with a case manager report feeling less burdened than family members accessing service as usual (Macias Macias, Kinney, Jackson & Vos, 1994). In general, case management is related to high rates of client and family satisfaction and is not a burden on families (Goering et al., 1997).

Clients who receive ACT have been found to be more satisfied with their treatment program than clients in a broker-style case management program. In the latter, the case manager is in charge of connecting clients to other services and typically maintains a very high staff to client ratio (Calsyn, Morse, Klinkenberg, Yonker & Trusty, 2002).

In one study, 92 chronically mentally ill patients assigned to a case manager were assessed at six-month follow-up. Patients completed a structured interview to measure their perceptions of the program. Results indicated very high
levels of satisfaction: 87 percent felt as though they were understood by their case manager, 88 percent felt as though they were partners in developing goals and plans, 89 percent felt that their case manager was interested in what they thought about their problems, 94 percent percent indicated that they clearly understood the reason for each referral made and 90 percent said they would recommend their case manager to a friend who needed help (Wasyleńki, Goering, Lancee, Ballantyne & Farkas, 1985). By six months, a strong supportive relationship developed between the case manager and the client, buffering stressors which had previously led to hospitalization (Wasyleńki, et al., 1985).

5. Next steps and other resources
Knowing what works and receiving training on an evidence-informed practice or program is not sufficient to actually achieve the outcomes that previous evaluations indicate are possible. A program that has been shown to improve mental health outcomes for children and youth but that is poorly implemented will not achieve successful outcomes (Fixsen et al, 2005). In order for a program to be evidence-informed, it needs to be applied with fidelity to the design and it needs to be implemented using supportive “drivers” related to staff competency, organizational leadership and organizational capacity. These drivers include assessing and monitoring the outcomes of your practice using evaluation or performance measurement frameworks, which are particularly important when there is insufficient evidence in the literature to guide clinical decisions. Choosing a practice is an initial step toward implementation, but the implementation drivers are essential to ensure that the program reaches appropriate clients, that outcomes are successful and that clinical staff members are successful in their work.

The Ontario Centre of Excellence for Child and Youth Mental Health has a number of resources and services available to support agencies with implementation, evaluation, knowledge mobilization, youth engagement and family engagement. For more information, visit:

http://www.excellenceforchildandyouth.ca/what-we-do or check out the Centre’s resource hub at http://www.excellenceforchildandyouth.ca/resource-hub.

For general mental health information, including links to resources for families:
http://www.ementalhealth.ca
References


Appendix A. Synopsis of adult literature

Models of case management:

- Community Treatment Team (CTT): intense treatment of a patient with trained staff.
- Clinical Case Management (CASE MANAGEMENT): one person is responsible for conducting a needs assessment, creating a plan, and coordinating access to services.
- Intensive Case Management (ICASE MANAGEMENT): characterized by small caseloads, provision of services in the patient’s own environment, and assistance with daily living.
- Assertive Community Treatment (ACT): a model for care and treatment that provides locally-based treatments for people with severe mental illness; a team of individuals from a variety of backgrounds work collaboratively to deliver treatment, rehabilitation, and necessary support services; is an evidence-based practice and one of the most rigorously researched models of community care for people with severe mental illness.

↑ = increase, ↓ = decrease (e.g. ↑ CASE MANAGEMENT: client and family satisfaction indicates that in case management, client and family satisfaction increased)

*The table includes data related to adult literature only*

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<th>Overarching Question</th>
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<td>1. Impact of working with family/caregivers</td>
<td>CASE MANAGEMENT &amp; standard care</td>
<td>Ziguras &amp; Stuart (2000)</td>
<td>Meta-analysis: Randomized controlled trials and quasi-experimental studies included in review. Review limited by uncertainty as to the extent models (as described by the original authors) fit the description of ACT or CASE MANAGEMENT.</td>
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<tr>
<td>Case Management, ACT, CCASE MANAGEMENT</td>
<td>Ziguras, Stuart, &amp; Jackson (2002)</td>
<td>Systematic review: Summarized the results of two major meta-analyses. Limited by a lack of consensus about models of CASE MANAGEMENT.</td>
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<td>ACT, ICASE MANAGEMENT, CASE MANAGEMENT</td>
<td>Smith &amp; Newton (2007)</td>
<td>Systematic review: Compared ACT, ICASE MANAGEMENT, &amp; CASE MANAGEMENT. Study limited by inability to differentiate between ACT and ICASE MANAGEMENT. Authors found very little data on CASE MANAGEMENT.</td>
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| 2. Structure of service delivery |
| CTT & ICASE MANAGEMENT |
| CTT: compliance to medication | Sands & Cnaan (1994) | Study compared CTT to ICASE MANAGEMENT, clients assessed at one year. Study limited by small sample size ($n = 60$), few significant outcomes. No random assignment. |

| 3. Workload implications |
| CTT & ICASE MANAGEMENT |
| CTT = 1 to 5 ratio; weekly meetings with clients; 6 weeks training for staff | Sands & Cnaan (1994) | Study compared CTT to ICASE MANAGEMENT, clients assessed at one year. Study limited by small sample size ($n = 60$), few significant outcomes. No random assignment. |

| CASE MANAGEMENT, ACT, CCASE MANAGEMENT |
| Effectiveness of CCASE MANAGEMENT questionable for caseloads above 30 | Ziguras, Stuart, & Jackson (2002) | Systematic review: Summarized the results of two major meta-analyses. Limited by a lack of consensus about the best way to specify models of CASE MANAGEMENT. |

<p>| 4. Client feedback and satisfaction |
| ACT &amp; standard care |
| ACT: patient satisfaction | Marshall &amp; Lockwood (2000) | Meta analysis: Reviewed effectiveness of ACT as alternative to other forms of CASE MANAGEMENT. Limited by uncertainty as to whether programs described fit the description of ACT or CCASE MANAGEMENT. |</p>
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<tr>
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<td>Insufficient evidence that ACT &amp; C CASE MANAGEMENT improves client and family satisfaction</td>
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**ACT, ICASE MANAGEMENT, CASE MANAGEMENT**

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<td><strong>5. Annual client targets</strong></td>
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**CASE MANAGEMENT & standard care**

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<td>↓ CASE MANAGEMENT: clients hospitalized</td>
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**ACT & C CASE MANAGEMENT**

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**ACT, ICASE MANAGEMENT, CASE MANAGEMENT**

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