Integrated models of primary care and mental health & substance use care in the community

Literature review and guiding document

Ministry of Health

August 2012

Purpose

The work to develop this guiding document was overseen through a tripartite partnership between the Ministry of Health's Mental Health and Substance Use Branch, the Ministry of Children and Family Development's Child and Youth Mental Health Branch, and Fraser Health.

The objectives of the project were to:

- Review the academic and grey literature to identify the best and most promising models of integrated primary and mental health and substance use community care across the lifespan.
- Develop a report including a menu of program models for various populations that health authorities can explore and implement as appropriate, across the continuum of needs.
- Assess the quality of evidence and make recommendations regarding areas for further research and/or evaluation.

Qualifying statement

This review undertook to identify researched models of integrated care that were found to be specifically effective for individuals with mental health and/or substance use needs, and included primary care services. It further outlines the unique service considerations/elements that need to be addressed when planning services for various subpopulations.

This document is to act as a guide on current, best known practices for health authorities, regional managers, physicians and those considering realignment of care strategies. It does not form policy or indicate what configuration of models should be available in which communities. In some cases, limited evidence-based literature was found and therefore, definitive advice cannot be provided. As well, the magnitude of the task meant that in-depth inquiry into any one model's design could not be conducted within the current scope of this work. The reader is encouraged to look to specific program standards and guidelines (where they exist) to provide more specific direction for these models.

This document is to act as a guide on current, best known practices for health authorities, regional managers, physicians and those considering realignment of care strategies. It does not form policy or indicate what configuration of models should be available in which communities.

Finally, the information presented in this review represents the evidence that was found through the methodology applied at the time. It is expected that this may be the first in a series of inquiries. Further questions may arise from these materials that will need to be pursued in order to support transformations of mental health and substance use systems, into an evidence-based, integrated, and client-responsive community care service. As such, this document should be considered to be a 'living document' that will be further developed as the integration process evolves in B.C. and new evidence becomes available.

Acknowledgements

A special thank you is extended to the following individuals for their participation in the development of this literature review in 2011:

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This document was also reviewed by the following committees:

- Provincial Mental Health and Substance Use Planning Council
- Assertive Community Treatment Provincial Advisory Committee
- Integrated Primary and Community Care Advisory Committee
- Integrated Primary and Community Care Implementation Leadership Committee
- Integrated Primary and Community Care Steering Committee
- General Practice Services Committee

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Executive summary

While it is not difficult to argue the value in integrating health services to provide holistic, coordinated care, the process to do so is not simple. The need to review the evidence related to specific models of integrated primary and mental health and substance use (MHSU) care in the community aligns with the Integrated Primary and Community Care initiative in B.C. to integrate family physicians, home and community care, and the mental health and substance use system with the focus on populations with complex health and mental health/substance use needs. It further considers the key elements for high quality care of health of the population, client experience, and cost impacts as identified by the Institute for Healthcare Improvement Triple Aims Model. Finally, the presentation of materials from an integrated lens involving both primary care and mental health and substance use clinicians supports the long standing work in collaborative care of the B.C. Medical Association.

The purpose of this review is to inform planning around the particular program models that are appropriate for individuals with mental health and substance use problems when integrating primary and mental health and substance use care in the community. Like the varied levels of care needs that individual's present, a full continuum perspective needs to be considered in service development. Service approaches for those with mild to moderate depression are not the same as those needed for the individual living with schizophrenia and abusing substances. This report takes an evidence-informed approach to guidance on those models of care that have found to be effective with those experiencing mental health and substance use concerns, across the continuum of severity of needs. As well, considerations for the particular needs of a number of subpopulations (e.g. children and youth, individuals with developmental disabilities) have been presented where evidence from the literature was found. Finally, it provides an overview of cost considerations where found in the model literature and profiles engagement activities to support physician involvement.

Critical themes supporting integrated primary and MHSU community care

The following summarize the critical themes arising from the literature as it relates to the above noted alignments and provide guidance to health planners and providers as a foundation to approaching integrated models of primary and mental health and substance use care in the community.

1. **No one model will be appropriate for all individuals**. When considering the most appropriate model of integrated primary and MHSU care, understanding the overall severity of health and MHSU needs by the given population will determine the model(s) to apply. For instance, individuals with severe mental illness and problematic substance use experience a variety of barriers to receiving high quality, coordinated care. Approaches to this vulnerable population differ and service provider expertise and alternative forms of care are necessary.
2. **Individuals with mental health and substance use problems will experience fluctuations** in their overall health and quality of life, requiring a coordinated system that allows them to move in and out of the appropriate model and amount of care based on their needs.
3. The system is flexible and responsive, **approaching care from a recovery focus**, and involving and empowering individuals to be as involved in their care planning and service delivery as they can at any particular point in time.
4. **Stigma is a significant barrier** to accessible and appropriate services delivery. Stigma is felt in the community and from service providers, and how services are designed may be further stigmatizing. Because traditional services are often not able to address the needs of this vulnerable population, innovative and creative service delivery models are necessary.
5. **Access to services that are welcoming and appropriate is necessary**. Alternate means of ensuring access that is respectful

of the individual with a severe MHSU need is necessary. Service access needs to occur beyond the typical nine to five schedule, be outreach-based and available where the patient is at, and be appropriate for the variety of symptoms and behaviours that may present.

6. Due to the above, **many individuals have unmet health needs**. Attachment to a general practitioner for individuals with severe MHSU needs is not likely to happen through traditional primary care approaches. Provision of primary health care that is responsive to the service implications and needs associated with severe MHSU problems requires consideration of alternative means, approaches and environments to facilitate continuity and comprehensive care (e.g. a broader range of primary care providers appropriate to more accessible service delivery models). **The evidence is not equal.** There is strong, high quality evidence for some models of care and much less for others. As a result of this discrepancy, we have only included those models that are promising in their effectiveness, given what the literature presents today. However, such models should be applied with caution including research-based evaluations to further advise the knowledge base.
7. **The right care provider for the needs**. Mental health and substance use clinicians and psychiatrists have specialized training that allows them to provide appropriate, high quality services to those with severe and complex needs, increasingly in collaborative models with primary care providers. Individuals with less severe MHSU problems are best served and generally more attached to the primary care system. Options and tools to support physicians to enhance that quality of that care have been underway for some time in British Columbia.
8. Regardless of the model applied above, the key to the success of any integrated approach is the **active involvement of clients/patients as partners in planning and care delivery**. Historical thought has often been that the provider knew best and the appropriate treatment would therefore follow. However, individual and family involvement and self-management

opportunities have been shown to enhance the adherence to treatment regimes, improve provider and individual satisfaction with care, and create more meaningful outcomes at both clinical and quality of life levels. Thus, appropriate intensity of care is provided at the necessary point in the care plan, saving valuable health care resources as well.

Summary of models

The following summarizes nine different types of collaborative models[1] of care found in the evidence literature ranging from communication through integrated. The quality of research support varies across the models and the analysis revealed that some models have been found appropriate for certain populations, whereas their application to other populations is either unknown or the literature evidence was lacking. The models are presented according to intensity of the coordination of service providers and according to the severity of needs of the population that the models have been found to best serve.

[1] Note: There was wide variance in use of common terms such as collaboration and shared care. The terms used in this document reflect the research base on specific models of care and are not meant to dismiss the collaborative and coordinated work environments/programs that have already been established.

Collaborative models of care

	Community models of integrated MHSU care	Severity of needs	Setting / provider / type of care
I. Communication approach	**Communication between practices**	mild to moderate	Separate practices, care/case management, psychiatric consultation
	Medical-provided MHSU care		Consultation-liaison; care is physician-provided with specialized support
II. Co-location and collaboration approach	**Co-location**	mild to moderate	Shared space - separate service; collaborative care; provision of education & self-management; independent treatment plans which may include references to the other.
	Shared care		Services generally provided **at primary care (PC) site**, care manager provides follow-up care by monitoring individual's responses and adherence to treatment; MHSU service outreach to GP; provision of education & self-management; treatment plan is primary care of which MHSU is a component.
	Reverse shared care	moderate to severe & persistent	Services provided **at the MHSU site**, shared space where the general/nurse practitioner (full or part time) is in a psychiatric/MHSU setting; treatment plan is primarily MHSU of which primary care is a component.
	Specialized hub & Spoke Outreach teams	severe &/or persistent/ complex	Building upon shared care, specialized multi-disciplinary teams provide the GP, family and other care providers with specialized assessment, consultation, education & support, and time-limited direct treatment to the individual **in the community setting**.
III. Integrated team approach	**Unified care**	severe & persistent	Full-service primary care & full-service MHSU/psychiatric care in one place; organization-wide integration of clinical services, financing, administration and integrated medical record/treatment plan.
	Primary Care MHSU team	moderate to severe	Fully-integrated – MHSU staff part of PC Team and co-manage care; focus on brief interventions for a large number of client/patients; one-stop concept at intake.
	Fully-integrated system of care	severe & persistent/ complex	Wrap-around teams, seamless continuum of outpatient and supported housing; inter-disciplinary (outpatient and residential); Individualized care plans for high-risk individuals across multiple service agencies/ disciplines.

I. Communication models (mild to moderate MHSU needs)

Both **communication between practices** and **medically-provided MHSU care** are examples of the traditional linkage between primary care and MHSU care. These are communication-based models and are not considered to be integrated, and, depending on the formalization of the relationship and/or amount of consultation, may or may not constitute a collaborative model.

In both of these models of care, the family physician is the primary provider and access to/involvement of MHSU practitioners (psychiatrists and/or clinicians) is provided in a less formalized collaboration of care. These models are generally referral-based approaches providing limited care management or ongoing collaboration between providers. These models are similar to any other traditional specialist referral that a primary care practitioner would make.

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- For individuals whose health and MHSU needs are mild or sporadic, this model is often adequate to address the individual's needs and is quite an appropriate use of health resources.
- Primary care services are enhanced when physicians are adequately trained in assessment and treatment of mental health issues and self-management tools are accessible[2].
- As access to psychiatry can be a challenge often with long wait lists, rapid access clinics hold promise in providing primary care practitioners with timely access to psychiatric assessments and consultations that help guide the physician in determining if more intensive, collaborative care is necessary.
- The evidence does NOT provide support for these as integrated models or the desired clinical outcomes associated with Integrated Primary and Community Care.

[2] B.C. has been especially proactive in this regard, with the development of such things as the Practice Support Program modules, Bounce Back program through the Canadian Mental Health Association, and the Family Physician Guide as a few examples.

II. Co-location and collaborative models (mild, moderate, severe MHSU needs)

Models of collaborative primary and community care that have evidence to support their effectiveness with individuals with moderate mental health and, in some cases, problematic substance use, include:

Co-location of primary and MHSU care refers to provision of independent services at a common physical location. This model may be a first step in creating relationships between programs/providers resulting in improved collaboration and client/patient physical access to services.

- Co-location improves access to services but on its own will not create collaborative or integrated care.

Shared care involves a partnership between primary care and mental health practices wherein the general/nurse practitioner remains the primary care provider, accessing consultation, assessment, and educational/self-management tools from the mental health system[3].

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- This model has been found effective for those with mild to moderate depression, some anxiety disorders, with older depressed adults, and those using substances.
- It has also been found effective with individuals with severe mental illnesses (e.g. bipolar disorders, severe depression) where symptoms and functioning has been stable for a good period of time, and where physicians have been trained to identify and assess the signs of deterioration.
- This model is most effective when physicians have received training in MHSU problems and have access to education resources and self-management tools for patients.

Reverse shared care is a newer, less studied model that has developed to better serve those with severe mental illness or

[3] The term 'shared care' in B.C. holds a broader definition reflecting a variety of approaches/models of collaborative and coordinated care, not only related to those with MHSU needs. However, in the literature a specific model of coordinated primary and MHSU care termed 'shared care' was noted and it is this model that is referred to in this document.

problematic substance use who are already engaged with the MHSU system but who are not well connected with the primary care system due to a number of reasons such as: inability to access a general practitioner (GP), stigma, location of services, negative past experiences. Here, the MHSU clinician is the primary service provider and primary care services are brought into the MHSU setting. By receiving care in their environment, surrounded by providers who are known and comfortable to them, individuals are more likely to engage with primary care providers and follow-through with health treatment regimes.

- Reverse shared care holds promise for those individuals that will not access the traditional primary care services and/or have experienced difficulties attaching to a GP and are actively receiving MHSU care.

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- Examples of promising applications include Methadone Clinics, Metabolic Monitoring, and Wellness Clinics.

The **specialized hub and spoke outreach team** approach recognizes that there are specific populations that require specialized assessment and treatment services. These populations tend to be a small demographic, but their treatment needs require specialized training that would not be generically available in a MHSU system. Because of this high level of specialization, these multidisciplinary, specialized teams cannot provide ongoing treatment in the community, but rather conduct the assessments, coordinate and direct care planning for the variety of providers involved in an individual's life, and provide education and consultative services to community providers on an ongoing basis.

- There is evidence to support this approach to care with individuals who have a dual diagnosis of developmental disabilities and mental illness, often complicated by substance use, young adults experiencing first episode psychosis (i.e., Early Psychosis Intervention), and psycho-geriatric services.

III. Integrated team models (severe and complex MHSU disorders)

There is strong evidence supporting the positive impact of multi-disciplinary teams and integrated care on symptom severity, functioning, employment and housing of people with severe mental illness[4], compared with conventional services. The evidence supporting particular integrated team models, however, varies significantly.

Unified care is a full-service health and MHSU/psychiatric service available within the same setting involving full administrative integration in billing, single client file and care plan. Typically this approach is necessary for those with severe and complex mental illness and problematic substance use and embodies co-location and collaborated care, and, from a health perspective, it provides the whole of health needs through one care plan/location.

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A recent development of this model in the literature, however, is the patient-centered medical home (PCMH) or primary care home. This team-based model of care is led by a family physician who provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes. The PCMH practice is responsible for providing for all of a patient's health care needs or appropriately arranging care with other qualified professionals. This includes the provision of preventive services, treatment of acute and chronic illness, and assistance with end-of-life issues.

- While the unified care model is a complete and integrated model of health care, it is not comprehensive in addressing the variety of social variables that impact a client/patient's overall wellness (e.g. housing, income/employment).
- The evidence for this model is in its developmental stages – unfortunately, there is little evidence from which to make recommendations on its effectiveness for MHSU populations.

[4] This evidence is developing for those with severe substance use disorders and addictions, with promising outcomes expected.

The **primary care MHSU team** embodies a population health approach to treat the whole person, including working, to address all determinants of health. The team providers do not have any particular specialty (i.e., all team members are expected to have a strong knowledge base of MHSU disorders), focus on at risk individuals, and provide brief, solution-focussed care. By primarily focussing on health needs, this model is able to engage individuals who may not access MHSU services, because this model may be experienced as less threatening. However, the approach needs to be assertive and take place where the individual is at.

- This model bodes well for outreach and street programs that are targeting unattached, complex individuals who have multifaceted health, mental health, substance use, housing and other social challenges.
- The evidence supporting this model is developing, but it is considered a promising approach to engaging a typically difficult, high risk population (e.g. homeless, street youth).

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For individuals with complex mental illnesses such as psychosis, where daily living functioning is significantly impacted in terms of overall quality of life, **fully-integrated system of care models** need to be available. These teams are all-inclusive and 'wrap-around' the individual, ensuring all determinants of health are either provided for directly or through formal partnerships with other organizations/providers (e.g. housing providers, employers, education/training, family reunification). This is the most intensive model of care that many individuals will require for an extended period. The evidence supporting various team approaches within this model differs. There is over 20 years of evidence supporting assertive community treatment, often considered to be a tertiary level service provided in the community, at a much lower per diem cost and impacting rates of hospitalization with a population that has typically been served primarily in the acute system. Unfortunately, the evidence supporting other forms of intensive/outreach based community approaches has not been as rigorously studied but holds promise for vulnerable, hard to reach populations such as those who are homeless,

have addiction issues, or significant comorbid needs (e.g. developmental disabilities, involvement with the correctional system, or substance induced brain injury).

- The literature supports assertive community treatment (ACT) as a gold standard service model for adults with psychosis, high hospitalization utilization (including tertiary level care), with many functional challenges (such as housing, income/employment) with or without concurrent substance use.
- Promising practices include intensive case management/assertive outreach for individuals with severe mental illness – but not necessarily at a psychotic level – with significant functional challenges to live in the community, and high hospital utilization. This model may actually be most effective for those with concurrent disorders where the substance use is the primary diagnosis, but conclusive research in this area is lacking.

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- Emerging adaptations of the above models would include transitional youth ACT, particularly for those youth at risk of being homeless, as well as forensic ACT as a means of better serving individuals who have a significant history of incarceration. However, the evidence here is still developmental.

Introduction

Health care around the world is struggling with growing demands, aging populations, complexities in health conditions, and challenging systemic and financial constraints--all of which require health services provided through more innovative and strategic means. Integration of community care is the approach that has consistently been reviewed and/or implemented to address these challenges. Individuals who have mental health and/or substance use problems significantly benefit from holistic health care that coordinates the variety of providers and ensures consistency and collaboration between providers. This document provides a review of the scientific literature on models of care that consist of a coordinated approach to service provision between primary care and mental health and substance use community care providers.

Defining integrated care

The literature on the value of integrated and collaborative care is robust. And while the terms 'collaborative care' and 'integrated care' tend to be used synonymously, this review of the literature revealed that they do in fact represent different approaches to multi-provider, coordinated service delivery. Therefore, the definitions used in this document represent a summation of the various perspectives found in the literature, to build a concise differentiation between the two for the purposes of outlining a continuum of models based on the level of collaborative care across providers.

Collaborative care

For the purpose of this review, the term collaborative care acknowledges the need for various providers to partner, communicate, and provide services through means that support each other's components of a holistic care plan. Here, providers have independent services and care plans but have agreed to work together for the betterment of comprehensive client care. Collaborative care may also

include specific modes of consultation such as stepped care which is typically the application of algorithmic applications to determine the least intrusive approach for the best possible outcomes (Blount, 2003; Hegel et al., 2002; Garfinkel, 2009; Lin et al., 2000). The term collaborative care is most commonly applied to treating individuals with chronic conditions, such as in the British Columbia Chronic Care Management (2012) strategy, and to those with less complex health conditions where comorbidity does not necessarily confound the appropriate treatment (Gum, Arean & Bostrom, 2007; Harpole et al., 2005; Huang et al., 2009).

Integrated care

Integrated care in this document refers to those models of care where one care plan and a multi-disciplinary team is responsible for the overall care of an individual and often goes beyond the particular area of specialization to address numerous health and social needs. Individuals who require integrated care models would likely have complex health and social needs that require specialists, various health providers and support workers to work as a team to address and improve the determinants of health for these individuals (Canadian Psychiatric Association, 2000; Bazelon Center, 2010; Daniels et al., 2009; Collins et al., 2010; Hollander & Prince, 2008; Unutzer et al., 2007).

A truly client/patient-centred approach would consider the approach that best meets the health needs and goals of a particular individual or population, providing the least intrusive option appropriate to the particular needs. The flow and amount of service provided changes as the individual's needs change.

This clarification is important to outline. For many clients/patients, an integrated approach may be the most appropriate and effective route to improve the health of the population, and enhance the client/patient experiences, through delivery of cost-efficient services. However, collaborative approaches may also be appropriate for some client/patient populations (e.g. individuals experiencing mild to moderate depression) and/or may be a stepping stone towards the development of more integrated service systems, given the massive change management that accompanies this type of system-wide service re-alignment.

Integrated primary and community care in B.C.

A Ministry of Health strategic initiative for 2010/11 was to integrate primary and community health services in B.C. by 2015. This work requires understanding the options for integrating mental health and substance use services with primary care and home and community care for individuals who have complex treatment needs, are high users of acute, emergency and psychiatric inpatient services, and for whom access to primary care through traditional models is limited (Government of British Columbia, 2010). The integrated approach aims to improve coordination of care for people with chronic and/or severe illness and/or co-morbidity, as their care is often fragmented across multiple providers and settings. The overall goal of integrated care is the provision of a variety of services to better meet the health service needs of the individual while addressing rising costs of care.

Key Results Area

Implement an integrated system of primary and community health care to more effectively meet the needs of frail seniors and patients with chronic and mental health and substance use conditions

Vision

Health care built on community knowledge and participation, delivered by a collaborative team of professionals supporting patients and caregivers to effectively manage their own health condition. Core health services are provided in community settings and committed to effective care for the entire population, including appropriate health services for seniors, people with chronic health conditions, women in pregnancy and childbirth, and for people with mental illness and substance use challenges. Health care is measured by successful client/patient and provider experiences that reduce the need for people to require urgent care in emergency departments and hospitals.

Goal

Increasing the effectiveness of primary and community care by proactively meeting the needs of these populations will impact positively on the quality of life of these individuals and reduce projected demand for both acute and residential care services.

The work undertaken in B.C. is in alignment with that of the Institute for Healthcare Improvement (IHI) Triple Aims Model (2010). As the title suggests, successful health care provision needs to simultaneously address three critical objectives:

Figure 1 – Triple Aims Model (IHI, 2010)

- Improve the health of the population
- Enhance the patient experience of care (including quality, access, and reliability)
- Reduce, or at least control, the *per capita* cost of care

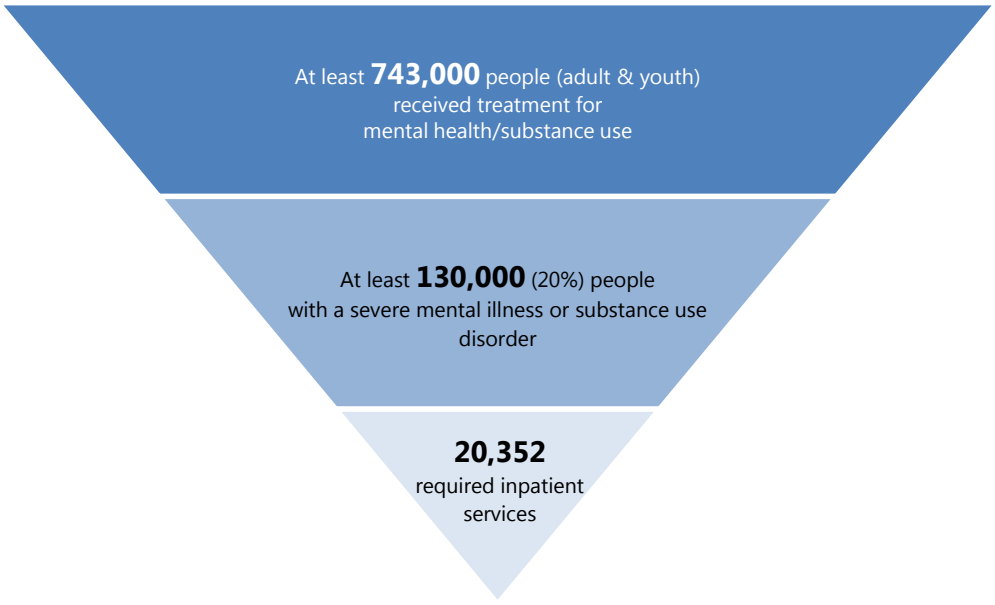
Mental health and substance use in B.C.

The impact of mental health and substance use problems is significant. Mental illness and problematic substance use affect people of all ages and all walks of life. According to prevalence data, approximately one in five B.C. citizens experience a mental health and/or substance use problem annually (Government of B.C., 2011). The majority of individuals with mild to moderate mental health and substance use problems can be and are effectively managed through the traditional primary care system, with family physicians providing approximately 80 per cent of MHSU care in B.C. (Government of B.C., 2009). The majority of these patients are generally not served through the community MHSU system. A smaller but more severe population receives the majority of their services through health authority MHSU services. Ministry of Health data (Government of B.C., 2009) indicates that $1.2 billion was spent in these mental health and substance use services[5] to support individuals with severe needs.

As service needs intensify, the numbers of individuals requiring that level of service decreases, but the whole of the continuum of MHSU services need to be considered. Ensuring that the highest intensity secondary (including community mental health and substance use services) and tertiary MHSU services are sustainable, effective, efficient and responsive to the unique needs of the subpopulations within is critical. However, individuals' MHSU needs are not stagnant and people will move across the various categories throughout the course of their lives. Coordinated care approaches that support this flow are necessary.

[5] These figures do not account for the millions of dollars spent in other ministries that also provide services to individuals with mental health and substance use problems, including the ministries of Healthy Living and Sport (previously), Children and Family Development, Housing and Social Development (previously), Public Safety and Solicitor General, Education, and Advanced Education.

Figure 2 – The inverse relationship between size of the population and severity of MHSU presentation



In any given year, prevalence data indicates that approximately 132,000 adults have a severe mental illness or substance use disorder. In 2010/11, 21,048 unique individuals required inpatient services (Government of B.C., 2011[6]) and represented:

- 5.7 per cent of all inpatient discharges in B.C. for that year
- 15.3 per cent of all acute inpatient days
- 18.6 per cent of alternate level of care days
- Average length of stay 12.9 days

[6] Quantum Analyzer; DAD; 2010/11

Table 1 – Over five years (2006/07 to 2010/11), the average length of stay (ALOS) varied by diagnosis[7,8]

Diagnosis	ALOS (days)
Schizophrenia/Psychosis	20.8
Bipolar	18.6
Depression	13.3
Anxiety	10.8
Substance Use	5.5

In November, 2010, the B.C. government released *Healthy Minds, Healthy People: A Ten-Year Plan to Address Mental Health and Substance Use in British Columbia*. The plan establishes a decade-long vision for collaborative and integrated action on mental health and psychoactive substance use in B.C. It identifies a population-based approach that not only aims to assist individuals with the most severe challenges, but also addresses the needs of all British Columbians, and whenever possible, prevents problems before they start. To be consistent with this approach, the literature review of models of integrated primary and MHSU care considered the range of health and mental health severity to represent those models that have been found more effective for particular populations.

[7] Quantum Analyzer; DAD, 2006/07 to 2010/11
[8] Emergency department data regarding non-admitted individuals is unavailable at this time.

Barriers to care

While there has been a strong and long history of working together between family physicians and MHSU providers, and evidence of a variety of collaborative care approaches have been initiated, the focus has tended to be on supporting physicians to care for those clients/patients with MHSU needs in their practice. As noted above, while this is a large proportion of the MHSU population, they also tend to have milder to moderate MHSU needs. Individuals living with a severe mental illness and/or problematic substance use experience a variety of health service challenges that further impact how and if services are provided and bolster the argument for improved collaboration and integration across service providers. Dominant challenges include:

- **Stigma.** Decades of work and progress have occurred provincially, nationally and internationally to address the ever-present experience of discrimination for those with mental illness. Advocacy groups have improved awareness over the last couple of decades in communities and among service providers about mental illness and efforts to combat stigmatizing responses. That same level of advocacy in the substance use field, however, has not occurred until more recently and therefore many barriers still remain for individuals whose substance use has become problematic. This stigma is further compounded if the individual has been previously involved in the criminal justice system. Those that have been found not criminally responsible on account of a mental disorder remain marginalized even though not criminally responsible. Therefore, stigma continues to be a challenge both within communities and service sectors and needs addressing in order to be successful at integrating care for this complex population.

- **Access.** Beyond stigma, services often are not accessible to the most seriously ill individuals whose symptoms and behaviour make treatment in the community more challenging. For instance, traditional office-based health and MHSU services often are not welcoming or appropriate for

> "Substance use can pose an important barrier to coordinated use of services, in part because many service providers exclude people who are actively using addictive substances"
>
> (Mares, Greenberg & Rosenheck, 2008, p. 374)

those who are unattached to the current system of care, nor are they easily accessible for many complex clients.

- **Unmet medical needs.** Many individuals with severe mental illness and/or problematic substance use also have significant health and medical needs (e.g. diabetes, wound care, cardiac conditions, HIV/AIDS) that may not be well-managed in the traditional health system; consequently, these individuals often present in the emergency department when community care would have been more appropriate and effective and could have prevented deterioration to a level requiring inpatient care.
- **Lack of training/knowledge.** Many of the challenges above relate to the lack of specified education and training for physicians and health practitioners on treating severe mental illness and problematic substance use, alternative modes of care, and clinical guidelines[9]. Physicians and community nurses often feel unable to assess and treat individuals with MHSU problems when they have limited access to support/consultation from which to learn. Furthermore, people with psychosis that are not responsive to the regular antipsychotics (treatment resistant) need a more intensive treatment at a community level complementary to tertiary care. Not only is there limited access to these specialized services, but there is also a particular lack of knowledge about how to treat these individuals who require both medical and psychosocial interventions and support.

In summary, the magnitude of mental illness and problematic substance use in B.C. and the variety of service challenges they experience supports the prioritization of this population in the movement towards improved collaborative and integrated care. While these individuals represent a small proportion of the population overall, they often require high-intensity and high-cost services when the whole of their care needs are not addressed in a coordinated and consistent manner.

[9] Development of the B.C. Medical Association Practice Support Program training models in B.C. has been a significant movement towards bridging this gap and is gaining recognition nationally for a variety of health conditions including MHSU.

Overview of the research

Consistent with previous reviews of mental health and primary care, the number of experimental studies conducted across the lifespan and levels of severity of MHSU and health needs varied significantly by level of integration and quality of evidence. Four processes were utilized to access and review research for this document; while emphasis was placed on acquiring studies with strong experimental designs, there was also value in exploring studies, program evaluations, and policy documents that that were more developmental in nature, as it was expected that the quantity and quality of research across the number of variables and populations of interest would vary significantly. The majority of studies focussed on a single diagnostic population (most commonly depression,) and methodology across studies also varied considerably.

While the desire was to avoid discussing models in terms of an individual's diagnosis but rather by severity of illness, this was found to be challenging given that the majority of studies have been conducted primarily with individuals with depression and/or anxiety disorders, who were already accessing primary care services.

Over 300 primary and secondary studies were reviewed. Through this process, it became clear that research related to a few models was robust, whereas research on other models was not yet conclusive. However, these models may hold some promise and should not be summarily dismissed – a lack of research does not necessarily indicate that an approach is not effective, but that the emphasis has not been placed on it to determine its effectiveness. Therefore, in keeping with an evidence-based approach, the literature on these models should be vigilantly monitored for new developments, including qualitative studies, in the upcoming months and years. See Appendix A for details on search methodologies and outcomes.

The research quality and quantity reporting on/related to substance use specifically (across all ages) was limited. Randomized controlled trials were rare and therefore, much of what was found was of a lesser strength of evidence. In the research reviewed, there was clear disagreement between authors regarding the ability to distinguish the effects of systematic care from those related to integrated care. The degree of collaboration does not necessarily predict positive outcomes, whereas the relationships that occur across providers and the resultant ability to engage clients/patients may. Therefore, in order

to understand the role of integrated MHSU services in the primary care setting, it is necessary to isolate the effect of integration from the impact of other factors, such as the development of a therapeutic relationship and social determinants.

Further, though there is a clear epidemiological research base indicating that concurrency of mental health and substance use issues is significant, few studies reviewed through this process considered (or reported on) study populations with concurrent mental illness and substance use (Bartels et al., 2004; Druss & von Esenwein, 2006; Olsin et al., 2006; Stoff, Mitnick & Kalichman, 2004). The challenge in this report is to balance out that uneven distribution of evidence to support any one model's application to three populations: mental health, substance use, and concurrent disorders. Where known, this review has been written clarifying whether the literature speaks specifically to mental health, substance use, or concurrent disorders; however, within many of the articles reviewed, this level of clarification of study population was provided. What is very clear is that no one model will serve the variety of MHSU needs of the population.

Models of collaborative/integrated care differ depending on the population.

No one model will serve all mental health/substance use needs.

Services can be organized in a variety of settings, depending on the service needs and the severity of mental illness/substance use problem.

Lead care provider is based on severity and client needs

This literature review examined integrated models from a population basis versus a program approach[10]. By reviewing models across populations and age ranges, we eventually saw it was clear that health service planners need to consider the most effective and appropriate model according to the particular population to be served, and those delineations have been made in this report where evident.

Collins, Hewson, Munger, and Wade (2010) conducted a recent review of the evolving models of integrated mental health and primary care which was used as a foundation for this review, and has been adapted and built upon to reflect the B.C. context along with further research evidence. Collins and his colleagues nicely summarized the approaches to integration by levels of coordination and population

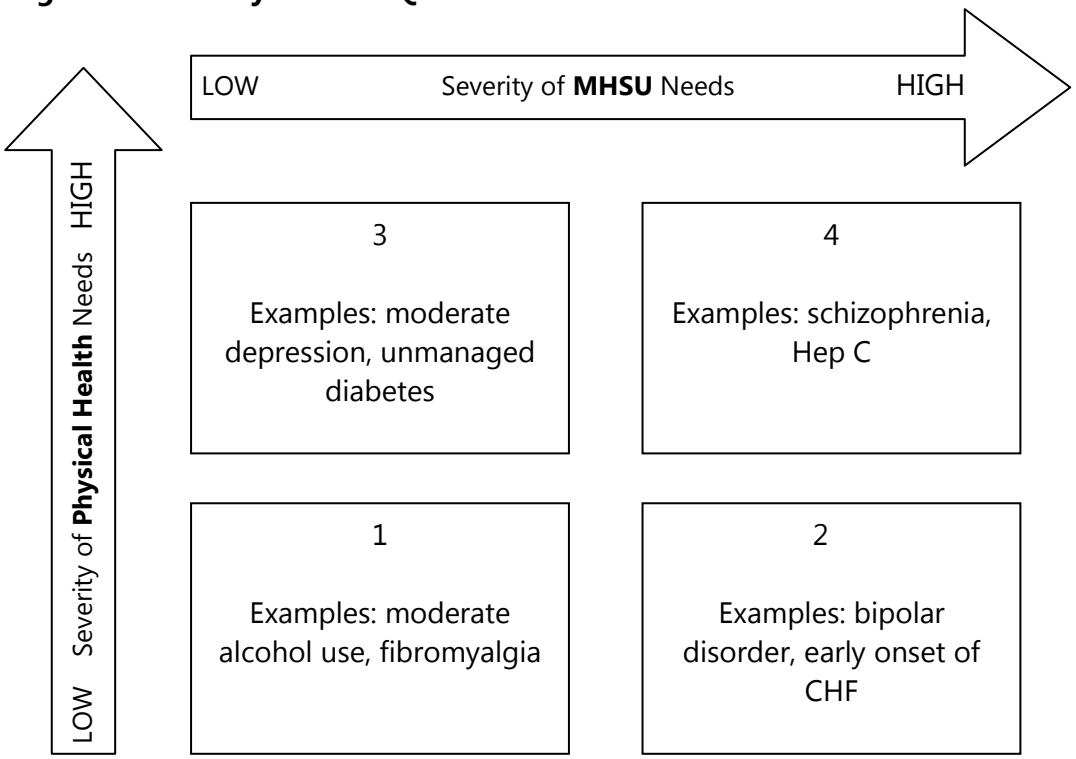
[10] Reference to particular programs (e.g. assertive community treatment) is included where specific reference was indicated in the literature.

most appropriately served, and included brief descriptors of each model and the evidence supporting it.

Determining who the primary care provider should be is dependent on the severity of the mental health need. That is, for those with high MHSU needs it is most appropriate to have their care led by those specialties. Conversely, if there is a low MHSU need or a high health need, the general practitioner or health specialist may be the most responsible provider. The challenge in more traditional service models, however, has been the under-valuing of the lesser conditions, resulting in a disconnection between service providers. Further, traditional primary care approaches have not always been conducive to treating those with severe MHSU. As discussed earlier, barriers to care, and therefore alternate approaches (e.g. outreach based) or alternative primary care providers (e.g. nurse practitioners) may be important developments for an integrated system. Collins and colleagues (2010) describe four quadrants of severity that are helpful in determining the lead provider based on individual client need.

All individuals, regardless of MHSU challenges or not, require services of a primary care provider for the maintenance of their overall health.

Figure 3 – Severity of Need Quadrants



Stepped care

Within any particular model of care is the growing focus on utilizing a 'stepped care' approach. That is, providing the least intrusive and cost efficient care to respond to a client/patient's current needs and adjusting that care based on response to treatment and/or changing needs (Hegel et al., 2002; Lin et al., 2000). Within the literature, stepped care was often considered a model of care unto itself, or a mode of intervention within shared care models; however, within this review, the stepped care concept would best serve as an underlying philosophy in the provision of high quality care.

Stepped care algorithms assist clinicians in identifying the least intrusive course of action as the first course of treatment, are based on best evidence, and have been found effective particularly across the spectrum of severity of MHSU (Daniels, Adams, Carroll & Beinecke, 2009; Hollander & Prince, 2001). For instance, through such an approach, individuals with depression may be offered a course of psychotherapy before pharmacotherapy is prescribed. Similarly, those with multiple medical interventions and with complex needs, including refractory psychosis, may find the appropriate treatment regime without undergoing all the unnecessary negative side effects of more intrusive approaches. Given a client-centred system, a stepped-care approach to service delivery overall may be appropriate for any population or health care sector.

The stepped care philosophy is client-centred and regularly monitored to ensure the best outcome, with the best client experience, through the least resource intensive yet appropriate approach (Blount, 2003; Hollander & Prince, 2008). Further, it allows for downwards and cost-effective substitution of care combined with effective specialist oversight at critical and/or ambiguous junctures, thus optimally balancing safety and efficiency (Garfinkel, 2009; World Health Organization, 2008). According to the New Zealand Ministry of Health (2011), stepped care ensures:

- there are interventions of different levels of intensity available
- the client/patient needs are matched with the level of intensity of the intervention
- there is careful monitoring of outcomes, allowing treatments to be 'stepped up' (or down) if required
- individuals usually move through less intensive interventions before receiving more intensive interventions (if necessary)
- there are clear referral pathways between the different levels of intervention
- the importance of supporting self care is recognised as an important aspect of managing demand (Government of New Zealand, 2011).

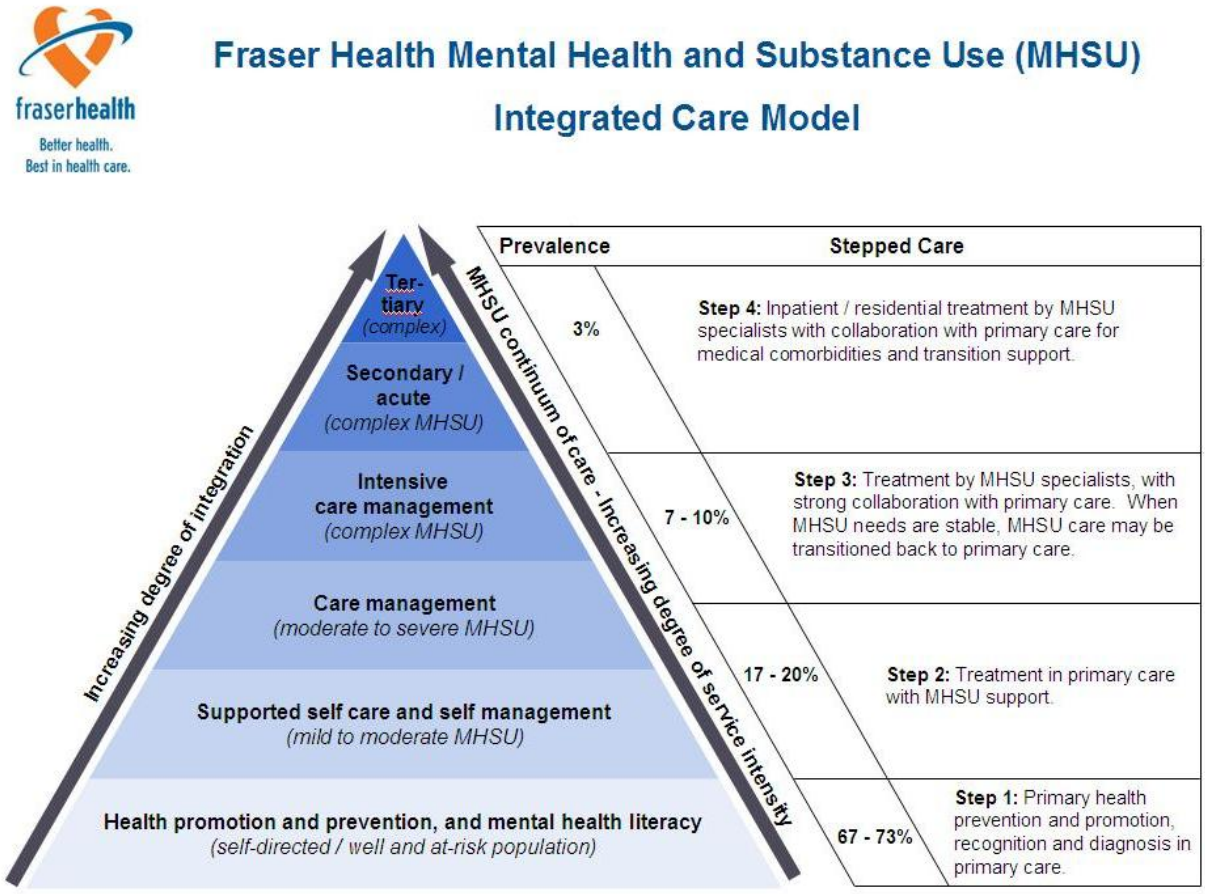
B.C. adopts the stepped care approach by ensuring a continuum of MHSU services throughout the province. The continuum of MHSU care considers the individual's pathway across the intensity of needs and appropriate service providers and settings (see Figure 4).

Table 2 – Continuum of MHSU care in B.C.

Primary Care	Community Secondary Care	Acute Secondary Care	Tertiary Care
MHSU care provided through a partnership between General Practitioner(s) and/or Nurse Practitioner(s) and MHSU clinicians/psychiatrist for those with mild to moderate and stable severe mental illness and/or substance use problems. Linkages to more intensive services generally through referral processes. Training in MHSU, provider and patient resource tools and prompt access to the rest of the continuum are necessary components.	Community-based treatment by mental health and substance use clinicians, including psychiatrist and specialized community care, for those with severe mental illness and substance use problems. Integration of primary care within MHSU services/teams is critical to the ongoing comprehensive health treatment in the community. Critical player in discharge planning activities of inpatient services for consistency and continuity of care.	Inpatient psychiatric/substance use treatment when the severity/complexity of needs requires treatment in a hospital setting (including involuntary care under the *Mental Health Act*). Inpatient treatment is generally short-term with the goal of prompt discharge to community through a continuity of care approach with the primary and community secondary care systems.	Specialized inpatient treatment for complex conditions and or those requiring longer term treatment in a secure environment (including involuntary care under the *Mental Health Act*). Discharge planning to community through a continuity of care approach with the primary and community secondary care systems and may include options for prompt re-admission.

Considering this continuum of care and stepped care approach along with the inverse triangle of MHSU needs of the population, mapping service needs to the population demographics is possible. The following is a representation of this stepped care approach that provides various levels of integrated service delivery depending on the position in the MHSU continuum as developed by Fraser Health (see Figure 4).

Figure 4 – Fraser Health MHSU integrated care model



Models of integrated primary care & MHSU care

An appropriate model of care has many elements. Such things as severity of the mental illness and/or problematic substance use, age, approach to integration, the client's co-existing health conditions, and cultural implications in service provision all need to be considered. This review has attempted to provide that overlay.

Building upon the lens of severity of needs, Collins and colleagues (2010) outlined eight unique models of integrated MHSU care defined not only by the services provided, but also by target population and approach (level of integration) to improve care. The models are organized by severity of client/patient needs from mild/moderate to severe and complex, all of which hold value and have a role from a continuum of care perspective, providing the right level of care, by the right provider(s), at the right time!

The current review also identified a ninth model – **specialized hub & spoke outreach teams** – that represents a more intensive case management approach that is specialized and necessary for particular subpopulations. Table 3 summarizes the models by target population and provides examples of the particular model currently in practice in British Columbia.[11]

[11] The reader is encouraged to note that for the purposes of the B.C. integration work, the models listed apply to both MHSU but the literature represents different levels of evidence, resulting in a model potentially being more appropriate for some client/patient
populations over others.

Table 3 – Models of integrated primary care & MHSU care

	Community models of integrated MHSU care	Severity of needs	Setting / provider / type of care	Examples of approaches in B.C.	
I. Communication approach	1. **Communication between practices**	mild to moderate	Separate practices, care/case management, psychiatric consultation	Traditional office-based practice or brokerage care management	✖
	2. **Medically-provided MHSU care**		Consultation-liaison; care is physician-provided with specialized support	Traditional office-based practice	✖
II. Co-location and collaboration approach	3. **Co-location**	mild to moderate	Shared space - separate service; collaborative care; provision of education & self-management; independent treatment plans which may include references to the other.	Community health centre	✖
	4. **Shared care**		Services generally provided **at primary care (PC) site**, care manager provides follow-up care by monitoring individual's responses and adherence to treatment; MHSU service outreach to GP; provision of education & self-management; treatment plan is primary care of which MHSU is a component.	Shared care CDM/ IHN	➡
	5. **Reverse shared care**	moderate to severe & persistent	Services provided **at the MHSU site**, shared space where the general/nurse practitioner (full or part time) is in a psychiatric/MHSU setting; treatment plan is primarily MHSU of which primary care is a component.	Metabolic monitoring clinics Methadone monitoring	➡
	6. **Specialized hub & Spoke Outreach teams**	severe &/or persistent/ complex	Building upon shared care, specialized multi-disciplinary teams provide the GP, family and other care providers with specialized assessment, consultation, education & support, and time-limited direct treatment to the individual **in the community setting**.	Psycho-geriatric outreach team Early psychosis intervention team Developmental disability mental health	✔
III. Integrated team approach	7. **Unified care**	severe & persistent	Full-service primary care & full-service MHSU/psychiatric care in one place; organization-wide integration of clinical services, financing, administration and integrated medical record/treatment plan.	Native health centre	✔
	8. **Primary care MHSU team**	moderate to severe	Fully-integrated – MHSU staff part of PC Team and co-manage care; focus on brief interventions for a large number of client/patients; one-stop concept at intake.	Street/ outreach clinics	✔
	9. **Fully-integrated system of care**	severe & persistent/ complex	Wrap-around teams, seamless continuum of outpatient and supported housing; inter-disciplinary (outpatient and residential); Individualized care plans for high-risk individuals across multiple service agencies/ disciplines.	Integrated case management Assertive community treatment	✔

Legend: The final column represents whether or not the model can be considered 'integrated'. ✖ = Not considered a model of integration; however, this model represents early stages of relationship building across providers. ➡ = Collaborative in nature; care tends to be integrated but separate care plans often exist; is appropriate for some populations from a stepped-care or specialization perspective. ✔ = Integrated service and care plan across multi-disciplinary teams/providers.

Three approaches to integrated care

It became clear in the literature that there are essentially three 'approaches' to integrated care for individuals with MHSU: through **communication**, **co-located and/or collaborative practices**, and **integrated service teams**. Within each of these approaches are models of care management that have varied levels of evidence to support them. In some cases the evidence clearly does or does not support the model (including applicability for particular subpopulations,) while in others the dearth of quality research on the model makes it difficult to speak to efficacy. Further, some models were applied as mixed models where it was not a clearly defined model but had elements of other models incorporated in response to the population being served.

Communication approaches are processes/tools employed to enhance information sharing across providers

Collaborative care involves MHSU and primary care working with each other

Integrated care involves MHSU and primary care working within one practice

-Collins et al., 2010

I. Communication models

Collaborative care that occurs through communication approaches is generally characterized by the development of informal referral networks and relationships that allows a family physician or MHSU clinician to access the other's individual client information. While it is often the case that particular family physicians may care for a number of individuals with a MHSU concern, the relationships developed between care providers often happens more out of circumstance and existing relationships than intentional strategy. Communication approaches include telephone/email consultations and information/education-sharing opportunities; nevertheless, each provider is conducting independent care. One may see references to consultations and follow-up activities in the independent care plans, but there is no concerted effort to link the two. Physicians have access to various guidelines, assessment, educational and self-management tools for their patients, who are most commonly capable of managing their illness with few supports.

1. Communication between practices

Separate, independent practices where services may be linked through ad-hoc communications or brokerage-style care/case management

This model of service provision would be typical of brokerage case management and has been applied to a variety of populations (Fitzpatrick et al., 2003; McGovern et al., 2008; Morley, Pirkis, Sanderson & Burgess, 2007; Rollman, Belnap, Mazumdar, 2005). Collaboration occurs on an everyday basis within the MHSU system. Whether this is communicating with an individual's family physician or with a teacher, the care provided by one provider is not formally linked to any care provided by others. Individual care plans exist within each service-providing organization and communications tend to be on an as needed basis. Similarly, navigators/care managers work directly for the physician and on behalf of the patient, assist in linking to the emergency department and various community referral sources. The navigator acts as a liaison between providers, the individual and families and maintains consistent though usually time-limited communication with clients/patients and families to enhance the overall experience.

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Limited evidence supports this mode of service provision and it was often the comparison group (i.e. traditional [usual] care) for studies of collaborative or integrated models, including randomized controlled trials (Grimes & Mullin, 2006; Kinder et al., 2006; Lin, Tang & Katon, 2006). Low-intensity collaborations such as communication between practices did not show significant effects on mental state, treatment uptake, or satisfaction with psychiatric services (Farrand, Confue, Byng & Shaw, 2008; Findley et al., 2003; Warner et al., 2000). It may be that some individuals with a mental illness or problematic substance use request that their care be provided by someone other than their health care provider and/or the individual may not be attached to a GP.

Given the evidence supporting integrated care (England, 2005; Grimes & Mullin, 2006; Yaggy et al., 2006), the communication between practices approach should be only practiced in the early stages of care

– when perhaps there are trust issues – prior to attaching individuals to a GP, or where individuals have mild mental health and/or potentially problematic substance use and are able to manage their situation with minimal formalized supports. These clients/patients generally possess strong internal resources/skills, have the capacity to determine and access providers, and have a well-established support network (Collins et al., 2010). MHSU issues may be episodic and may or may not co-exist with other health conditions.

Communication between practices is not recommended as an approach to integrated care but may be a first step towards developing relationships for future collaborative/integrated care.

Key elements

- Independent, unlinked care plans; GP is the lead for health care, MHSU is the lead for mental health care
- Services provided in separate practices
- Traditional office service
- Client/patient is self-supporting and able to manage with limited supports
- Brokerage case management is only feasible when there are appropriate resources to refer to

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Example program

- Traditional adult short-term assessment and treatment programs

2. Medically-provided MHSU care

The primary care practitioner is the only direct provider of MHSU care

Medically provided MHSU tacitly acknowledges that for some individuals the primary (and perhaps only) source of MHSU care is through their family physician. A consultation-liaison relationship may exist with the MHSU system but the care is not co-managed. As noted earlier, the majority of mental health care in B.C. is provided through the GP and an individual may or may not also receive services from the MHSU system. If they do, it is more commonly for a time-limited, specific purpose, rather than ongoing involvement in the care. During the course of care, the GP may link to MHSU promotion and support

services offered through various not-for-profit organizations (e.g., Canadian Mental Health Association (CMHA) Bounce Back program). From a prevalence perspective, this form of mental health care is most commonly practiced in B.C. (Government of BC, 2011).

The randomized controlled trial literature for this model of care presents consistent but not conclusive evidence that it is an appropriate approach for general primary care populations with depression, some co-morbid health concerns and high users of medical services (Katon et al., 2004; Katzelnick et al., 2000; Schoenbuam et al., 2001; Solberg et al., 2001; Simon, Ludman, Tutty, Operskalski, Von Korff, 2004; Warner, King, Blizard, McClenahan & Tang, 2000). However, in order to be successful and achieve the expected outcomes, physicians need access to evidence-based tools, education, and consultation for this form of care. This was particularly noted in the substance use literature (Drug and Alcohol Findings, 2009; Friedman, Zhang, Hendrickson, Stein & Gerstein, 2003; Gilbody, Whitty, Grimshaw &Thomas, 2003).

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Alcohol and substance use screening instruments have been found in the research to be important tools to address this challenge and improve responsiveness in care planning. The literature suggests that alcohol screening and counselling accurately identify individuals at risk for physical health complications from drinking, and counselling interventions result in small to moderate reductions in consumption. Though long-term outcomes studies are rare, short-term results (over 6-12 months) are promising (Fortney et al., 2007; Katzelnick et al., 2000; Saitz et al., 2005; Sajatovic et al., 2009). There is strong evidence to suggest that employing such tools in the primary care practice overall is effective, if the GP has been trained to use them (Craske et al., 2009; Dietrich et al., 2009; Foy et al., 2010). However, there remains a disconnection in the actual implementation of this knowledge in family physician practices. Ensuring access to follow-up substance use services and/or specialists in substance use care has been identified as a key element to improve uptake of this function in the family physician practice (Bartels et al., 2004; Katon et al., 2009).

The majority of studies of this model were with those suffering from milder forms of depression. Some such studies reviewed physician-patient telephone interview/consultation and resulted in increased patient satisfaction but not necessarily symptom reduction (Ludman, Simon, Tutty, Korff, 2007; Rollman et al., 2009; Simon, Ludman, Tutty, Operskalski, Von Korff, 2004). Overall, this approach seems to improve service coordination and support across providers, but the actual clinical impacts for clients/patients are minimal. There was some evidence to suggest support for this model in rural communities where access to specialists is limited and, in those settings, positive outcomes were noted but cost may be a limiting factor (Farmer, Clark, Sherman, Marien & Selva, 2005; Sullivan, Parenteau, Dolansky, Leon, LeClair, 2007).

Key elements

- GP is the lead for all care
- Traditional office service
- Client/patient is able to self-manage with limited supports
- Access to evidence-based screening tools and brief intervention guidelines
- GP has received training in alternate modes of treatment (i.e. options instead of medication)
- Access to psychiatry consultation
- Self-management tools and supports are provided to the individual/family

Example programs

- Traditional GP practice
- Canadian Mental Health Association's Bounce Back program
- Family Physician Guidelines for Depression

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The medically provided MHSU approach is recommended as an appropriate form of integrated care for serving individuals with mild/moderate forms of mental health and substance use needs ***only*** when physicians have access to evidence-based guidelines, screening tools, patient self-management resources and psychiatric consultation.

II. Co-location and collaborative models

It is a generally held belief that coordination of care can be aided by proximity of services and therefore, many health centres will include practitioners beyond the GP office, including public health, MHSU, physiotherapy, massage therapy, and in some cases naturopathy. Collaborative efforts extend beyond proximity to include processes and/or tools that help facilitate access across service providers.

3. Co-location

Independent MHSU and primary care practices are located within the same facility

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Co-location is an important strategy in improving integration of services, for both clients and service providers, and has often been applied in communities in an attempt to improve collaborative care. Defining characteristics include the use of evidence-based treatment plans, client/patient education, and follow-up and care management. However, because services remain independent, collaborative efforts in care provision are due more to clinical practice and relationships than to organizational commitment. One-stop concepts may apply in this model, only in the sense that all services are in the same building. Proximity does not guarantee receipt of all necessary services.

Unfortunately, this mode of collaboration has not been well enough evaluated through randomized controlled trials to provide conclusions on expected outcomes. The research reviewed provides little evidence for its effectiveness in symptom improvement and overall study results were mixed. Further, co-location was not found to be an enabling factor in knowledge transfer between practitioners, both at the specific client service-delivery level and in provider education and skill development. It is possible to see clinical impacts from co-located services, as compared to non-co-located care. However, the long-term effect/maintenance of those outcomes was not clear (Alexopoulos et al., 2004; Hedrick, Chaney & Felker, 2003; Vines et al., 2004; Winefield, Turnbull, Seiboth, & Taplin, 2007). Positive outcomes were more likely to occur when ongoing follow-up (beyond one year) was provided (Capoccia, Boudreau, Blough, 2004; Campbell, 2005;

McGuire, Gelberg, Blue-Howells, & Rosenheck, 2009). There was some evidence suggesting improved client/patient presentation to organizations the GP has referred to (particularly in older adults and those using substances) when those services are co-located (Harmon, Carr & Lewin, 2000; Krahn, Bartels & Coakley, 2006; van Orden et al., 2009; Watts et al., 2007; Zaller, Gillani & Rich, 2007).

Co-located services may be effective for clients/patients with the following characteristics: individuals who experience access challenges (i.e., physical mobility, transportation, rural/remote) where having health and MHSU services together improves access; when patients' (or clients') needs and severity of mental health/substance use issues are low and they are capable of self-management as a primary treatment mode.

Key elements

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- Independent, unlinked care plans; GP is the lead for health care, MHSU is the lead for mental health and/or substance use care
- Independent practices located in the same facility
- Traditional office-based service
- Access to evidence-based screening tools and brief intervention guidelines
- Access to psychiatry consultation and/or direct referrals to MHSU
- Self-management tools and supports are provided to the individual/family
- Co-location alone is not enough to achieve clinical outcomes.
- Access to a variety of support materials is necessary (e.g., client education materials)
- Positive outcomes were only noted when systematic follow-up is provided
- Specific service restructuring is necessary to ensure skill transfer across providers

Co-location improves **access** to services, but on its own will not create collaborative or integrated care.

Example program

- Traditional community health centre

4. Shared care

MHSU services are provided on-site within the primary care practice. The care plan outlines specific MHSU goals and often includes follow-up within the community

By far the most highly researched and recognized model of collaborative MHSU care in the literature is shared care[12] and the most studied population, within this model, was clearly individuals with a diagnosis of depression or anxiety, generally of mild to moderate severity. As noted earlier, shared care has been a model of practice in Canada for many years. While originally designed as a partnership between a GP and psychiatrist, in practice this definition has expanded to address the ongoing needs of the severely mentally ill. Shared care now includes mental health clinicians as case managers, as well as other practitioners who assist with ongoing mental health stability, substance use, and other determinants of health (such as housing, income support/employment). Overall, shared care represents a holistic approach beyond any particular physician.

In shared care, mental health clinicians and/or a psychiatrist provide services to individuals directly in the GP's office. Referrals and appointments for MHSU care are made through the GP's office – including assessment, education, treatment and follow-up for the client/patient. Follow-up supports, education and consultation are provided to the GP by the MHSU clinician/psychiatrist.

One of the benefits of shared care is its adaptability to target populations (Kinder et al., 2006; Miranda, Schoenbaum, Sherman, Lanto & Wells, 2004; Roy-Byrn, Russo, Cowley & Russo, 2003; Vera et al., 2010), including those with bipolar disorder (Bauer et al., 2006; Bauer, Biswas & Kilbourne, 2009; Kilbourne et al., 2009). Furthermore, a significant amount of shared care research[13] has been conducted with older adult/elderly populations with depression, including the well known Improving Mood Promoting Access to Collaborative

> *"Shared mental health care is a process of collaboration between the family physician and the psychiatrist that enables responsibilities for care to be apportioned according to the treatment needs of the patient at different points in time in the course of a mental health problem and the respective skills of the psychiatrist and the family physician."*
>
> Canadian Psychiatric Association and the College of Family Physicians in Canada, 2000
>
> (Collins et al., 2010)

[12] In Canada, Dr. Nick Kates refined this model through the 1994 Hamilton-Wentworth Health Service Organization Shared Care program.

[13] A considerable amount of studies were found on the use of shared care for this population. For more information please see the shared care section of the bibliography.

Treatment program (Arean et al. 2005; Hunkeler et al., 2006; Lin et al., 2000; Lin, Tang & Katon, 2006). These studies reported significant improvements in access, symptomology, physical functioning and satisfaction (Halpern, Johnson, Miranda & Wells, 2004; Hegel et al., 2005; Lin et al., 2003; Unutzer et al., 2001; Unutzer et al., 2002;). Further, shared care is effective for the elderly population at a low incremental cost compared to traditional primary care (Counsell, Callahan, Tu, Stump & Arling, 2009; Gilbody, Bower & Whitty, 2006; Katon et al., 2005; Liu et al., 2003; Wiley-Exley, Domino, Maxwell & Levkoff, 2009).

Shared care was also a model with promise for clients/patients using substances. The Primary Care Research in Substance Abuse and Mental Health study was identified in a few articles with limited positive outcomes (Arean et al., 2008; Domino et al., 2008; Gallow et al., 2004). Similar to the mental health shared care studies, these studies involved elderly populations with depression/anxiety as well as at-risk drinking, so the limited outcomes may not be representative of the general population. However, there does seem to be accord that convenient access to substance use services via collaborative care models does improve the likelihood that an individual will accept care for problematic substance use (Bartels et al., 2004; Watkins, Pincus & Tanielian, 2001; Wiley-Exley, Domino, Maxwell & Levkoff, 2009).

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Similar to the key elements noted in medically provided MHSU care (model # 2), effective shared care interventions included guidelines, screening and client/patient identification tools, client/patient and physician education, tracking systems and coordination and direct involvement of a mental health specialist[14]. In particular, care managers and individual tracking significantly improved outcomes, and the direct involvement of a specialist (either consulting or treating) showed the greatest improvements (Asarnow et al., 2005; Batten & Pollack, 2008; Bauer, Biswas & Kilbourne, 2009; Lin et al., 2003). Guidelines alone did not. Further, the relationship that develops between GPs and specialists facilitates a variety of alternate treatment options, including telephone consultation, email, and tele-psychiatry

"One of the most powerful predictors of positive clinical outcomes in studies of collaborative care for depression was the inclusion of systematic follow-up…"

(Craven & Bland, 2006, p. 10)

[14] These elements were found in many of the studies reviewed; please refer to the shared care section for more information.

initiatives (Brawer, 2010; Doey, Hines, Myslik & Leavey, 2008; Dickinson, et al., 2003; McKay, 2009).

A fundamental characteristic of shared care is systematic follow-up which does predict positive outcomes (as opposed to simply the level of integration) for depression and symptom improvement. Positive treatment adherence has been noted for individuals with panic disorders, anxiety, personality and eating disorders (Bartels et al., 2004; Gruen et al., 2010; Hegel et al., 2005; Katon, Roy-Byrne, Russo & Cowley, 2002; Katon et al., 2006; Price, Beck, Nimmer & Bensen, 2000; Roy-Byrne et al., 2001; Roy-Byrne et al., 2003). However, when the shared care model was applied to populations with serious and persistent mental illness, significant benefits were not achieved and in fact may not be any better than traditional brokerage case management or communication between practices (model #1) for this population (Cummings, 2009; Huang et al., 2009; Reynolds, Chesney & Capaobianco, 2006; Smith et al., 2006).

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Shared care employs care/case management wherein the MHSU care manager role extends beyond that of a navigator and plays an important part in care provision. Therefore, clinical care/case management may include such treatment activities as medication management, education, and provision of therapies such as cognitive behavioural therapy. Evidence supports the philosophy of integrated care management in terms of client reported benefits, and as a medium for accessing primary care following a psychiatric crisis.

Shared care is an effective model of integrated care for those with mild to moderate depression, bipolar disorder, and some anxiety disorders and with older depressed adults with or without co-morbid medical or psychiatric issues.

Key elements

- GP is lead care provider
- MHSU clinicians provide care in the GP office
- Care plan is developed by GP with MHSU goals that MHSU clinicians document on that file
- Traditional office-based care
- Psychiatrist may provide assessment/consultation in the GP practice or through a collaborative partnership

- Co-located service with systematized communication, record keeping, care management, educational elements for both providers and the client
- Access to evidence-based screening tools and brief intervention guidelines
- Access to psychiatry consultation and/or direct referrals to MHSU
- Self-management tools and supports are provided to the individual/family

Example programs

- Mental Health and Addictions Collaborative Care Clinics (FH)
- Kamloops Urban Collaborative Care program (IH)

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5. Reverse co-location with shared care

Primary care is provided on-site, within the MHSU service, to individuals already engaged with the MHSU system

When the mental illness is moderate to severe and more debilitating, individuals are often already connected to a mental health practitioner/service.In reverse shared care, general/nurse practitioner services are provided onsite in a MHSU facility/program where the individual is already receiving services. This model builds on enhanced collaboration, treatment plans that encompass health needs related to or compounded by the mental illness/substance use, and systematic follow-up.

Reverse shared care also allows for flexibility in responding to the variety of health-related issues that are common for those with moderate to severe mental illness. For instance, wellness clinics are becoming more prevalently linked to MHSU centres for those on atypical antipsychotic medications in order to address metabolic issues associated with their treatment. Similarly, for those on long-acting antipsychotic medications for illnesses such as schizophrenia,

depot clinics[15] can provide other health services such as nutrition counselling, social opportunities, and substance use counselling. Harm reduction approaches such as methadone maintenance clinics may be provided on-site as a component of a substance use service. In these examples, a traditional mental health service is expanded to address primary health care elements within the context of treating the mental illness.

Research on this model is limited; however, the studies do suggest that this model may be effective in ensuring health care needs are addressed with individuals who have severe mental illness but who have neither had access to nor been attached to a primary care practitioner for a variety of reasons (e.g., stigma, lack of a trusting relationship, paranoia) (Bartels, 2004; Boardman, 2006; Druss, Rohrbaugh, Levinson & Rosenheck, 2001; Marion et al., 2004; McCarthy, Meuser & Pratt, 2008; McDevitt, Braun, Noyes, Snyder & Marion, 2005).

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Randomized controlled trials on reversed shared care for those with problematic substance use have shown improved outcomes related to abstinence and general medical care, and positive impacts on primary care linkage and quality of medical care (Druss et al., 2001; Rubin et al., 2005; Weisner et al, 2001; Willenbring & Olson, 1999). They've also shown that the largest impacts of integrated services may be greatest for individuals with co-morbid conditions who are at greatest risk of service fragmentation (Druss & von Esenwein, 2006). Further, when individuals stabilized in a residential treatment program receive primary care services within the program, the likelihood of readmission for the substance use problem is decreased for as long as five years (Druss et al., 2010; Martens, Flisher, Satre & Weisner, 2008).

Evidence was also found for improved collaborative practice when the service providers were co-located and when the location of service provision was familiar and non-stigmatizing (Friedmann, Zhang, Hendrickson, Stein & Gerstein, 2003; Reynolds, Chesney &

[15] Mental health nurses provide medications to individuals on a regularly scheduled basis. New developments are to make these clinics more holistic in nature, providing a variety of health-related services.

Capobianco, 2006). This is an important factor for those with severe mental illness and problematic substance use who are already engaged with the MHSU system, as those clinics tend to be more comfortable, familiar, and welcoming than the typical GP office. This provides support for the increasingly relevant concept of reverse shared care and recent exploration of the role nurse practitioners can play in this model (Marion, Braun, Anderson, McDevitt, Noyes & Snyder, 2004; Matalon, Nahmani, Rabin, Maoz, & Hart, 2002).

Reverse shared care is a promising practice for treating individuals with severe mental illness and/or problematic substance use who are already engaged with the mental health and substance use system.

Key elements

- MHSU clinician/psychiatrist is the lead provider
- Care plan is MHSU but comprehensive to include health care needs; and physician/GP contributes to it
- Mostly office-based but can include outreach
- Co-located in the MHSU program
- Consistent primary care practitioner providing health care in the MHSU service results in attachment to a primary care practitioner
- Role/function of nurse practitioners could address limited GP resources in some communities
- Reduction of stigma because holistic service is provided in a safe and familiar environment

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Example programs

- Fort St. Johns MHSU Methadone Clinic (NH)
- Mental Health and Addictions Primary Care Clinics (FH)

6. Specialized hub & Spoke Outreach teams

Access to multi-disciplinary outreach teams, for specialized assessment, case consultation, short-term treatment, education and support.

Specialized outreach teams are multi-disciplinary including psychiatry, nursing, occupational therapy, physical therapy, rehabilitation therapy treatment, and social work with specific training/expertise in the population of concern. Given the level of specialization, they generally would not be the lead service provider, but would be a key resource in establishing the individual's care plan. An integrated care plan is developed based on the completion of a specialized assessment, involving all providers and outlining specific roles/functions/responses depending on the locale, ensuring consistent interventions based on a clear understanding of needs and presentation. Different approaches to behaviour, therefore, may be necessary in the school environment than in the family day home, for example, but all providers and approached are consistent with and knowledgeable about the overall assessment and collective approach.

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The hub and spoke model – where the hub is the specialized team and the spokes are the various care providers involved directly with the client/patient – allows the outreach team to develop a core knowledge base across the necessary disciplines. For the primary care practitioner and those caring for the individual in the community (including residential care) this knowledge accurately defines the intervention options that are unique to the current set of presentations. The outreach team, therefore, is accessible to the variety of care providers to assist in the individual's natural environment. For instance, a non-verbal individual may present his/her need for food through disruptive behaviours that could be misinterpreted as related to a mental illness or intentionally defiant behaviour. Because of their specialized knowledge, the outreach team assists in deciphering such communication tactics, and assists the care staff/family members in how to interpret and respond.

Evidence also supported the need for specialized outreach teams that provide care through formal collaborative arrangements with primary

care practitioners, other health providers, and community/family caregivers (Cummings, 2009; Franx et al., 2008; Shiner et al., 2009). The research in this area, however, is developmental, population-specific, and often reflects the components/operations of the outreach team itself as opposed to emphasizing the integration with primary care per se (Berardi et al., 2002; Butler et al., 2008). Particular subpopulations for which this model was specifically outlined are those with complex health, mental health, and mental issues such as the psycho-geriatric and dually diagnosed populations (see Subpopulation Considerations, page 33). Here, the unique combination of presentations requires specialized knowledge to tease out which elements are representative of health, mental health, substance use, developmental or neurological variables in order to establish appropriate interventions.

Other populations for whom this model may be appropriate, but further investigation is required, are those with eating disorders, those involved in the criminal justice system, and those with severe addictions.

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Key elements

- Lead care provider is the physician responsible for the overall care, but the hub is the specialized team as they define the integrated care plan with providers, the individual, and family
- Integrated care plan, based on the consistent specialist assessment, advises on interventions for care plans held by various providers
- Care may be provided with in an office/hospital setting but includes outreach in the community, where the individual is at (e.g., home, residential care)
- Specialized assessment and client/patient consultation from multidisciplinary team (including psychiatry) with specialized training/knowledge

Some highly complex diagnostic populations require access to specialized MHSU outreach teams to support collaborative care across a variety of providers.

Example programs

- Seniors Outreach Team (VCH)
- Early Psychosis Intervention Team (FH)

III. Integrated team models

When considering service approaches for the most severely ill, hard to reach, and/or homeless population, traditional clinic-based services are not likely to be effective (Rife et al., 1991). Integrated teams typically reach out and are accessible where individuals actually are. An analysis of systematic reviews and meta-analyses' by Franx et al. (2008) confirms there is a lot of evidence on the positive impact of multi-disciplinary teams and integrated care on symptom severity, functioning, employment and housing of people with severe mental illness, compared with conventional services. For example, the inner city shared mental health care program in Halifax, NS, provides health and mental health care through community outreach to marginalized populations, such as the homeless (Kisely & Chisholm, 2009). Service providers include psychiatrists, psychiatric nurses, social workers and GPs. Services include consultation-liaison to primary care, education and outreach to clients (shelters, methadone clinics, transitional housing, drop-in centres, needle exchange). The program targets those who have difficulty accessing service, as well as the front-line staff of organizations who are often the initial point of contact. While not a randomized control trial, this program reports wait times reductions from almost 40 days to six, significant improvements in overall health, mental health and satisfaction (clients & physicians), and enhanced knowledge of mental health issues in GPs (Kisely & Chisholm, 2009).

Harm reduction approaches are often included as either a service model and/or treatment approach within integrated teams. Various outreach-based services, such as street clinics, have been developed and organized based on a harms reduction philosophy but can also be considered as a service model of care. The model core programs developed by the former B.C. Ministry of Healthy Living and Sport (Government of British Columbia, 2009) emphasized the importance of collaborative, integrated services across governments, health, other social services, private and volunteer program planning and coordinated delivery across primary, acute, emergency and residential care providers within both harm reduction and communicable disease prevention initiatives.

Integrated teams

- ✓ Holistic health care looking at the whole of the individual's health needs
- ✓ One service (co-located)
- ✓ One care plan/file
- ✓ One information system
- ✓ Team care management
- ✓ Outreach to clients/patients

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7. Unified care

Full-service health and MHSU/psychiatric services are available within the same service - full administrative integration in billing, single client file and care plan

In a unified care model, MHSU/psychiatric services are a part of the primary care practice. Therefore, services are co-located and administratively integrated. There is a single client file and care plan and this model has been described as 'full-service primary and full-service mental health care' in that it is a one-stop provision of comprehensive health services. Typically this approach is necessary for those with severe and complex mental illness and problematic substance use. This model embodies co-location and collaborated care. From a health perspective, it provides holistic health needs through one care plan. Therefore, by our definition of integration, this model represents the fully-integrated category (Collins et al., 2010). However, the model does lack the linkages to key determinants of health and other social and support services that would encompass a completely integrated, one stop service.

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The evidence supporting this model is limited. Some work with veteran populations in the United States suggests possible impacts on emergency department presentations and physical status (Blue-Howells, McGuire & Nakashima, 2008), but there are not enough studies to make recommendations on this model. Similarly, references specific to substance use research were not found, but given the severity of this population's needs, concurrent substance use problems are highly likely.

A recent development of this model in the literature, however, is the patient-centered medical home (PCMH) (also known as the primary care home). The PCMH model was developed by the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Osteopathic Association in 2007 (Rosenberg, 2009). Still in its infancy, this model has been applied to several specific populations, including children and youth, individuals with chronic conditions, veterans and uninsured

adults. The foundation of a PCMH rests on the principles of providing client-centered, comprehensive, coordinated and round-the-clock care for all or most of clients with health care related needs (Brody, 2009; Rich et al., 2012). Caring for the whole person (including their mental health, substance use and primary care and health behaviour needs,) instead of just treating their disease, is another aspect of this model (DeGruy & Etz, 2010). The purpose of the PCMH is to improve access and coordination of primary and behavioural healthcare services for all patients (Rich et al., 2012), with a focus on managing (and sometimes reducing) cost (Harper & Balara, 2009).

Unified care is a complete and unified health model of care, but is not comprehensive in addressing the variety of social variables that impact a client/patient's overall wellness. The evidence base is early in its development and thus it is difficult to make recommendations on its effectiveness.

The PCMH model is just beginning to be applied to the MHSU population, which means there are few effectiveness studies addressing their complex and unique health issues. As Mouer (2009) notes, "...the medical home model has not been adapted for people living with serious mental illnesses" (p. 4). However, several authors argue for why this model should be aimed at this population. They state that this recovery focused, continuous and client-centered model is in line with MHSU service approaches, and could be applied to those with severe and persistent MHSU issues such as individuals with severe mental illness (Dickinson & Miller, 2010; Smith & Sederer, 2009) and veterans with depression, PTSD and anxiety (Pomerantz et al., 2010; Tew, Klaus & Olsin, 2010). Furthermore, as integrated primary and MHSU care has been shown to produce positive outcomes, the PCMH may be one way to facilitate this provision of care (Dickinson & Miller, 2010).

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Smith and Sederer (2009) outline the benefits of a PCMH, and advocate for a mental health home for individuals with serious mental illness. They argue for implementing in concert with "existing clinics, assertive community treatment teams, psychiatric rehabilitation programs, and partial hospitalization or day treatment programs" (p. 530), which have similar holistic, recovery-based philosophies to the PCMH. Building these linkages to the specialized MHSU services is appropriate, given the varied needs of this population. However, programs such as assertive community treatment provide for all the individual's needs, not just health-based needs. Therefore, the primary

care MHSU team (described next) may be a more appropriate approach for those with severe and complex MHSU disorders.

Key elements

- GP is the lead provider
- Single client file and care plan for all health, mental health & substance use needs
- Tends to be traditional office-based
- A service specifically designed to treat the needs of individuals with both health and MHSU concerns

Example programs

- Central Interior Native Health Centre (NH)

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8. Primary care MHSU team

Population health approach to treat the whole of the person – All team members are required to have a MHSU knowledge base (i.e. not specialists), focus on at risk individuals, and provide brief, solution-focussed care

By primarily focussing on health needs, this model is able to engage individuals who may not access MHSU services due to perceived stigma. Therefore, addressing their MHSU needs through this model may be less threatening. The approach needs to be assertive and take place 'where the individual is at'. Here the focus is on a public health, epidemiological approach to care versus specialty care. This model bodes well for outreach and street programs that are targeting unattached individuals who have complex health, mental health, substance use, housing and other social challenges.

This model's goal is to also reach out to at-risk individuals with an emphasis on brief (15-30 minutes), solution-focussed interventions. Therefore, the evidence to support this model is specific to the effectiveness of brief interventions for various populations (e.g. depression, alcohol use, conduct disorders in children/youth) versus the integrated service delivery itself, which remains un-evaluated. Limited empirical evidence specific to this model of integrated care

was found (Funderbuck, Maisto & Sugarman, 2007; Kaner et al., 2009; Kisely & Chisholm, 2009; Nilsen et al., 2008; Willenbring & Olson, 1999).

Street clinics and street nursing are promising models for further exploration. Early evidence would suggest they are highly effective in accessing high-risk, hard-to-reach individuals who would not generally use traditional health services (Hilton, Thompson & Moore-Dempsey, 2000; Lefebvre et al., 2010; Poole & Urquhart, 2009). Evidence is also growing in this model's application to harm reduction programs with the homeless, sex-trade workers, and individuals with HIV/AIDS (Dodds et al., 2004; Rife et al., 1991; Whetten et al., 2006).

Brief interventions as a mode of treatment provided mixed but promising results in studies considering clients/patients presenting at the emergency department for substance use issues (Funderbuck, Maisto & Sugarman, 2007; Havard, Shakeshaft & Sanson-Fisher, 2008; Gerada, Barrett, Betterton & Tighe, 2000; Willenbring & Olson, 1999). These treatments could be provided through a variety of the models identified herein, but were most commonly associated with the primary care MHSU model. However, it is premature to suggest that this model is most effective for people with problematic substance use due to the lack and robustness of research studies.

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Key elements

- While the GP is the primary provider, the team is collectively-led; an identified care manager may be determined based on the individual client/patient needs
- Fully-integrated care plan often involving actions related to social needs as well
- Variety of locations may be reasonable depending on the target population

Primary care MHSU is a promising fully-integrated model of care that may be most effective in reaching out to hard-to-reach, high risk populations.

Example programs

- Downtown Eastside (DTES) Low-Barrier Housing program (VCH)
- Kelowna Outreach Urban Health Clinic (IH)

9. Fully-integrated system of care (wrap-around services)

Holistic service provision that addresses a multitude of health determinants through an interdisciplinary team approach, working off one care plan, and providing for or formalizing partnerships to ensure overall quality of health for high risk, vulnerable, individuals who have typically received the majority of their health services through the inpatient/tertiary system

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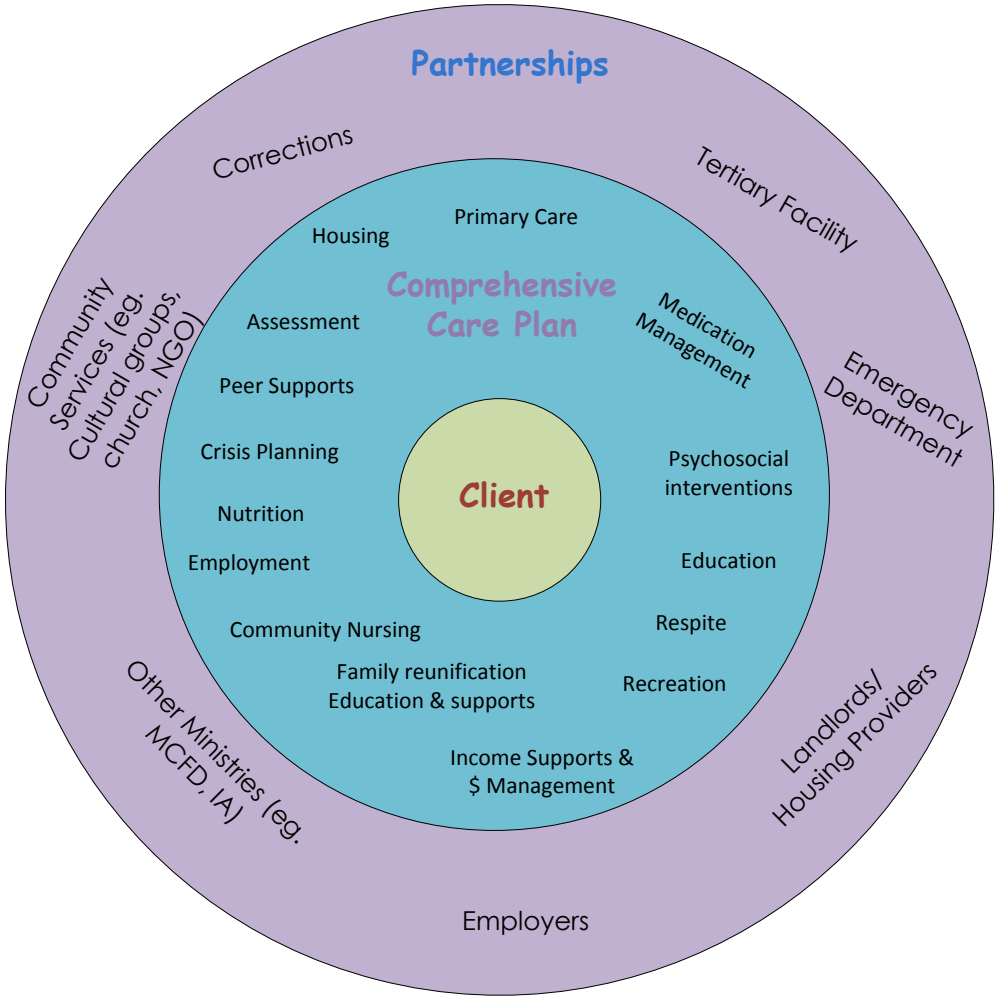
Fully-integrated systems of care are also known as wrap-around services, or fully-integrated multidisciplinary teams, with the key defining factor being a system of care versus individual services. When considering service needs and approaches for the most severely ill, hard to reach, and/or homeless population, traditional clinic-based services are not likely to be as effective and services that reach out and are accessible where individuals are, are more appropriate. The goal is to provide for a client/patient's basic needs (e.g. food, shelter, and clothing) alongside their MHSU treatment. The model goes beyond the primary care MHSU model in that multi-disciplinary teams work collectively to address all determinants of health needs. To achieve this, the team must comprise more than mental health/substance use and primary care providers, to include occupational therapy, rehabilitation practitioners, employment and income support specialists, and peer support workers. Ultimately, this model requires all team members to be employed by/accountable to one organization (e.g. health authority, non-profit organization, community council). Formal partnerships are established with those providers who, due to various community or organizational challenges, cannot be employed as team members (e.g. correctional officers are full members of the team but must remain employees of the correctional system). Figure 6 depicts this fully-integrated model of care.

Figure 5 – Fully-integrated, wrap-around system of care[16]



Fully-integrated models of care move towards reducing barriers to access through such devices as open door policies, fast-tracking access to services, flexible hours of operation and reducing waitlists, thus enabling increased engagement and retention. Further, when combined with other community and social supports (such as housing, practical life skills assistance, and services that are perceived as non-threatening and safe), engagement with services are more likely.

[16] Note that the number and variety of potential service needs is representative of the complexity of vulnerabilities and estrangements. Many individuals require ongoing assistance with addressing the basics of everyday life.

Two specific types of wrap-around services have been well documented in the research literature: intensive case management/assertive outreach and assertive community treatment (ACT). Burns et al. (2007) analyzed 49 RCTs of intensive case management approaches, including ACT, and found that intensive case management resulted in the greatest impacts with clients who were already high users of hospital care, and less so with individuals who were not, suggesting that these clients/patients had been accessing hospital care by default. The Homelessness Intervention Project Service Model Framework literature review made it evident that the homeless population is highly vulnerable to a variety of complex and chronic health conditions and that access to primary health care is a constant challenge (Government of British Columbia, 2009). Integrated and collaborative care that includes primary care providers, mental health and substance use clinicians, community services, home and community care, and other specialists constitutes a better continuum of services in terms of early identification, prevention, and long-term care (Government of British Columbia, 2009).

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Intensive case management / assertive outreach

At its most formalized level, intensive case management (ICM) operates as a multidisciplinary team, where each client/patient generally has one key provider/care manager that is assigned based on their predominant service needs. While ICM teams often address many of the individual's health, MHSU, and social needs, some services continue to be accessed from outside the team. For instance, instead of taking on accessing housing, the ICM team may access housing outreach workers through a partnership agreement or protocol. Teams may establish partnerships with specific GPs and/or nurse practitioners to ensure primary health care needs are met. Similarly, a formal partnership may exist with a primary care MHSU team (e.g. street clinic) or unified care clinic to ensure that ongoing primary care, nutritional health, smoking cessation, and other public health services are integrated into the individual's care plan.

In addition to the aforementioned benefit for high-users of hospital services, ICM and assertive outreach seem to have growing evidence specifically for the substance using population (with or without a mental illness) (Anderson et al., 2003; Graham, 2004; Stoff, Mitnick & Kalichman, 2004; Willenbring & Olson, 1999). Specifically, the availability of substance use treatment within community clinics in large city downtown cores shows promise in increasing adherence to methadone maintenance and health care treatment for issues resulting from or exacerbated by substance use (Umbricht-Schneiter et al., 1994). It is important to acknowledge that the population benefiting most from this level of intensive treatment is also least attached to preventive health and social services. That is, they tend to be high users of emergency and acute services as health needs are often not addressed until severe (Burns, Catty, Dash, Roberts, Lockwood & Marshall, 2007; Morbey, Pannell & Means, 2003; Rota-Bartelink & Lipman, 2007; Vancouver Police Department, 2009). They use much of the correctional system's resources, as well as income supports. Intensive wrap-around services are necessary to assist them in acquiring good health and will therefore shift costs from acute/emergent care to home support services, pharmacy, and outpatient programs (Clark & Rich, 2003; Cornwall, Gorman, Carlisle & Pope, 2001; Dolovich et al., 2008; Huxley, Evans, Burns, Fahy & Green, 2001; McGrew, 2009; Simpson, Miller & Bowlers, 2003).

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A preliminary review of the literature[17] on this model suggests it is appropriate for individuals who are homeless or have unstable housing, the severely mentally ill, individuals who have difficulties (for various reasons) in navigating health and social service systems, and those with concurrent disorders (Clark & Rich, 2003; Morse et al., 1997; Grimes, Kapunan & Mullin, 2006; Grimes & Mullin, 2006; Ploeg, Hayward, Woodward, Johnston, 2008; Weinreb, Nicholson & Williams, 2007; Yaggy et al., 2006).

[17] A fulsome literature search on ICM/AO programs is to be conducted through a separate process and that information will further inform this document in future iterations.

Assertive community treatment (ACT)

Perhaps the most comprehensive form of integrated community care for this population is the assertive community treatment (ACT) model. The evidence for ACT teams, both here in Canada and worldwide, is extremely robust, demonstrating both effectiveness and efficacy in systematic reviews of randomized controlled trials (Falk & Allebeck, 2002; Franx et al., 2008; Nelson, Aubry & Lafrance, 2007; Ziguras & Stuart, 2000). Rosen, Mueser and Teesen (2007) summarized the results of major reviews and found that ACT teams, when compared with usual mental health care, increased and maintained contact with care, decreased use of hospital-based care, improved outcomes, reduced symptoms and increased housing stability. Further, only those ACT services that have fidelity to the ACT service model requirements achieve these outcomes, including significant decreases in hospitalization rates, for this complex population (Rosen, Mueser and Teesen, 2007).

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The distinguishing features of ACT are the availability and persistence of care: ACT teams operate 24/7, 365 days, with a 1:10 clinician/patient ratio, and repeatedly offer services directly, as opposed to brokering them; more than 80 per cent of services are delivered in clients' homes (Government of B.C., 2008). This allows for relationship building and strong alliances with clients/patients (Chinman, Rosenheck & Lam, 1999; Tommasello, Gillis, Lawler & Bujak, 2006). ACT teams integrate psychiatric, medical and nursing care and their availability allows them to effectively intervene in crises and facilitate faster access to income and housing entitlements (Hemming & Yellowlees, 1997; McGrew, 2009; Rosen, Mueser & Teeson, 2007).

As ACT services are specifically designed for individuals with severe mental illness and with the greatest functional impairments, it is reasonable to expect that these individuals will also have high service needs including medication support, vocational rehabilitation, substance use treatment, and housing supports (Government of British Columbia, 2008.) An ACT team operates with 11.8 FTE staff including: one team leader, one psychiatrist, a program assistant, five to six case managers, three nurses, one vocational specialist, one addiction

specialist, one social worker, and three to four support workers (Government of British Columbia, 2008).

The team also includes nurse practitioners and/or general practitioners as full team members or through sessional contracts. Nurse practitioners in particular may provide added value to an ACT team. They not only assist in addressing the shortfall in GPs, but can also take on other functions as full team members, such as prescribing medications (Davis et al., 2011; Nardi, 2011; Weinstein, Menwood, Cody, Jordan & Lelar, 2011; Williams, KuKla, Bond, McKasson & Salyers, 2009). By incorporating primary care as a component of the overall ACT team treatment, the health needs of an individual are not reviewed separately, but as an aspect of overall functioning in the community and within inpatient services when required (e.g. planned inpatient treatment/respite).

The illness management and recovery focus of ACT services through the employment of peers to provide support is a significant element of this service (Government of British Columbia, 2008; Salyers, 2009). Peers are important and active members of the team, providing an environment of understanding and safety, relationship building and engagement, employment/vocational coordination, and personal supports.

Key elements

- Multi-disciplinary, cross-jurisdictional team-led care that provides for the whole individual
- Fully-integrated, comprehensive care plan
- GP/nurse practitioner is part of the team
- Provided in the community, where clients/patients reside
- Appropriate for individuals with severe and complex mental illness, co-existing problematic substance use and health needs, and multiple social and functional challenges
- Fully-integrated system of care via intensive case management/assertive outreach may be the most appropriate model for at-risk, hard to reach, and homeless populations with severe substance use problems, abuse and addictions

Intensive case management/assertive outreach systems of care hold promise for providing comprehensive health and social care to at-risk, hard to reach individuals with severe and complex mental illness and problematic substance use.

Assertive community treatment (ACT) is a best practice of integrated team care for individuals with severe mental illness (psychosis) who have complex and multiple health and social needs and have not been successfully cared for in traditional systems. Fidelity to the ACT model of care is necessary to obtain positive outcomes.

- Formalized partnerships with other key community agents
- Maximize opportunities to involve peers in service provision

Example programs

- ACT teams (VIHA, NH, VCH)

Subpopulation considerations

Older adults / psycho-geriatric

As mentioned in the shared care section above, many of the primary research studies on the effectiveness of this model of collaboration/integrated care occurred with older adult populations, particularly veterans in the United States. For the older adult with a mild to moderate mental health concern, the GP is the most predominant care provider, as these individuals are generally already receiving a variety of medical services. MHSU care within the primary care practice therefore provides improved access and coordination of care for this population. Follow-up supports in the community include not only medical care but also social/anti-isolation interventions. By far the most highly researched approach to collaborative care with elderly populations is Project IMPACT (Improving Mood-Promoting Access to Collaborative Treatment) for depressed elderly clients/patients in the primary care practice (Callahan et al., 2006; Hegel et al., 2002; Huang et al., 2009; Lin et al., 2000; Lin et al., 2006; MacAdam, 2008; Unutzer et al., 2002). Results have included improved client/patient outcomes, coordination of services, satisfaction, and cost efficiencies (Lin et al., 2000; Lin et al., 2006; Unutzer et al., 2002). Mental health components of this approach include pharmacology and psychotherapy (cognitive behavioural therapy, solution-focussed therapy), complete with telephone and face-to-face follow-up.

The degree to which substance use in the elderly population is a significant concern is neither yet well understood nor verified in this review. However, the potential for complications as a result of poly-pharmacy, vulnerability to falls, fractures, and disorientation makes the substance-using older adult at higher risk for hospitalization. In these cases, the MHSU issue is a secondary but facilitating presentation (Lin et al., 2010; Rota-Bartelink & Lipmann, 2007). Older adults are more likely to follow through with MHSU care when the service provider is integrated into a primary care setting (Gallo et al., 2004; Oslin et al.,

2006), suggesting that integrating specialty care into primary care may be a preferred option for older individuals with at-risk or problematic substance use.

Co-morbidities & chronic disease management

As shared care begins to build a team of providers, it is also a reasonable approach to coordinating the variety of care needs that an individual with co-morbid chronic diseases may require. Given that the majority of individuals with chronic diseases are older adults, it was not surprising that a variety of studies focussed on Shared Care for depressed elderly individuals with co-morbid conditions such as Alzheimer's Disease, arthritis, diabetes, anxiety, panic disorder and post traumatic stress disorder (Gum, Arean & Bostrom, 2007; Koike, Unützer & Wells, 2002; Ploeg, Hayward, Woodward & Johnson, 2008; Reuben et al., 2010). For older adults with depression and arthritis, shared care's positive effects on pain management were only effective for those presenting with low levels of pain (Lin et al., 2003; Lin, Tang et al., 2006). For those with depression and diabetes, the outcomes of shared care on depressive symptomology were consistent with the general population – significantly positive. However, improvements in diabetes self-management were not found (Lin, Katon et al., 2006; Kinder et al., 2006). Further, there seems to be evidence that when there are two or more health complications, the effects of shared care are greater overall (Bartels et al., 2004; 2005; Druss & von Esenwein, 2006; Harpole et al., 2005; Hegel et al., 2005). Therefore, from a MHSU perspective, the shared care model may very well be an effective mode of intervention for depressed older adults with or without co-morbid health conditions; however, the effects may be more predominant in the treatment of depression than in the co-morbidities.

Shared care is an effective model of intervention for depressed older adults with or without co-morbid health conditions.

Dementia and neurological deterioration

For older adults who are demented, delirious, suffering from severe neurological deterioration as a result of prolonged substance use, frail and/or have growing problematic behaviours, access to specialized

psycho-geriatric assessment, consultation, and outreach services is required in order to provide the best care for individuals in their homes (Bartels et al., 2004; Callahan et al., 2006; Cummings, 2009; Harvey, Skelton-Robinson & Rossor, 2003; Reuben et al., 2010). The primary care provider needs access to consultation and assessment services in order to adequately define the care plan, and health providers and family members need education and support to implement appropriate interventions, given the level of deterioration. The care team can define and facilitate social/recreational stimulation opportunities with non-health providers (e.g. volunteer organizations). Further, access to this specialized resource may improve the duration and ease of transition back to community when an older adult has had to be hospitalized. The hub and spoke model of care is most appropriate for this population of older adults.

A small proportion of individuals experience dementia and neurological deterioration younger than age 65[18] (Alzheimer Society, 2010) and therefore may experience challenges in accessing appropriate services. If service models truly reflect the needs of the individual, then it is important to acknowledge that traditional systems need to be responsive to those needs. In many cases, this will involve outreach of providers (including GP services) to facilities, including long-term care.

Homeless older adults

The majority of the references to appropriate and effective integrated models for individuals who have experienced homelessness have been included in the discussion on Integrated Teams above. However, there is growing acknowledgement that the population described as frail, older, homeless adults requires separate consideration (Ploeg et al., 2010; U.S. Department of Health, 2003). While it is true that individuals who are homeless have a life expectancy far below the general population's, they too will be living longer as services become more responsive. There is currently a population living on the streets whose health and social issues place them at severe risk.

[18] A variety of research estimates that approximately 15% of individuals with dementia are below the age of 65.

First, it is important to note that elderly in the homeless population is generally considered to be age 55+ and that they are less likely to access/receive outpatient care for a variety of reasons (including stigma, transportation, ability to book appointments, office-based care is not desired, previous negative experience with the health system)(Cagle, 2009; Mental Health Commission of Canada, 2011; Ploeg et al., 2010; U.S. Department of Health, 2003. They are also younger than those in B.C. who would qualify for elder-appropriate services. Wrap-around service models were found in the literature for this population, whose services included immediate access to primary care, care management, substance use counselling, social programs, housing and/or assistance to shelters, hot-meals, and care provided where the individual is at (Cagle, 2009; MacAdam, 2008; Oslin et al., 2006).

Frailty is intensified not only due to unmet health care and mental health needs, but also due to poor nutrition, prolonged and harmful substance use, exposure, and physical and emotional abuse (Yaggy et al., 2006). As a result, hospice/end of life care needs must also be considered for this population. The primary literature in this area is very limited. It has only been on the radar since 2005, so the knowledge base is in its infancy. Neither shelters nor intensive residential treatment programs (like the Burnaby Centre) are equipped for hospice care, and individuals experience many barriers to traditional care, as they have no fixed address for a nurse to visit them, are often difficult to find, and may not have a power source or clean water supply (Gallo et al., 2004; MHCC, 2011).

There is a growing literature exploring alcohol-related brain injury, particularly in frail older adults who have been chronically homeless and who have residential care needs (Lin et al., 2010; Oslin et al., 2006). For many, the primary problem is housing; some jurisdictions, such as Australia, are beginning to look at the need for specialized residential care that includes 24/7 health and mental health care for this population given their level of frailty (Rota-Bartelink & Lipmann, 2007).

An early example of this work is the Homeless Intervention Project in Ontario (Ploeg et al., 2008). Established through a reputable not-for-

profit agency, specialized case management teams were able to deal with the frailty of this client/patient population. The program is in its early years of implementation but may be an area to monitor.

Key Elements

- Shared care models have been most studied and found effective in treating older adults with depression
- Hub and spoke models of care are necessary to treat those with dementia and neurological deterioration
- Outreach-based services need to also link into/support the services provided in long term care facilities
- Integrated systems of care (intensive community treatment/assertive outreach) seem most appropriate in providing care to homeless older adults
- The concept of aging in place - and subsequently dying in place- is widely accepted; the system's responsiveness to this goal needs to be broadened to include those who are homeless

Children, youth and families

Of the literature reviewed for models specific to children, youth and families, only three studies identified child outcomes, and their strength of evidence was varied. None of the studies included substance use issues.

Early screening is critical in the identification of MHSU problems and access to best practice screening tools within the primary care setting is paramount. Brief interventions have also been found to be beneficial and cost-effective for youth and therefore the primary care MHSU model may be appropriate.

It is reasonable at first glance to suggest that the GP would hold lead responsibility for the care plans of children and youth. There was some evidence to suggest that shared care with the depressed adolescent populations is effective in decreasing symptoms and improving quality of life in the short term (six months); however, these gains deteriorated over time (follow-up at 18 months) (Asarnow et al., 2005; Asarnow et al., 2009). Within the secondary analysis, there was some indication that adolescents may be more open to receiving their mental health care through a shared care model versus reverse shared care, (meaning in a primary care practice,) which is likely a reflection of considerable stigma issues (Richardson et al., 2009). However, these studies reported mixed mental health outcomes. The Improving Mood-Promoting Access to Collaborative Treatment approach to shared care did present some promising applications for the adolescent population (Hegel et al., 2002).

A few studies of weaker evidence (case studies) studying wrap-around care in male at-risk youth suggest decreased hospital costs *and* improved functionality with the increase of ambulatory care (Grimes, Kapunan & Mullin, 2006; Grimes & Mullin, 2006). The findings also include improvement at regular intervals to four years in almost all functional measures, including significant improvement in risk to self or others (Grimes & Mullin, 2006).

Transitional youth requires particular consideration in the discussion of integrated care. Transitioning into adulthood creates challenges for all youth. However, when there are mental health, substance use, housing, stigma, and developmental barriers, the process becomes much more complex and demands an integrated approach to ensure continuity and consistency of care. The hub and spoke and the fully-integrated systems of care models should both be explored.

Given the limited evidence specific to this population, the results should be considered carefully. However, the following elements are salient:

- Inclusion of psychological services within a GP practice may improve opportunities for earlier interventions thereby decreasing the amount of care overall (Craven & Bland, 2006).
- Psychological consultation for youth with special needs may be effective in addressing behavioural issues (Naar-King, Siegel, Smyth & Simpson, 2003).
- Co-location, particularly in rural communities, may be effective in improving accessibility (particularly as it relates to confidentiality) and commitment to treatment as well as in supporting relationship building between youth, their families and service providers (Valleley et al., 2007).

While no definitive approach was noted through this review, it would seem that models of co-location/collaboration may be effective in treating children, youth and families where mental health and behavioural issues are emerging. Further, collaborative or integrated service models need to be more broadly focussed than just on health – the inter-relationships between health/MHSU services with school and family must be addressed. Finally, engagement with the primary care system needs to be considered from a family perspective.

Transitioning youth

Youth and young adults, compared to younger and older populations, generally have less need to access medical services. As such, they tend to lack familiarity with GPs and hospitals and are often unattached,

particularly if family attachment has not occurred earlier. Youth that have had strong attachments to the primary care system earlier on tend to have more positive attachments as they transition to adulthood (Kreyenbuhl, Nossell & Dixon, 2009). However, when youth do have mental health and/or substance use issues they wish to discuss with care providers, a number of key elements can present as further barriers[19]:

- Lack of trust of adults/professionals
- Concern for confidentiality
- Fear of being judged/labelled as a problem youth (stigma)
- Lack of knowledge and clarity of how developmental, health and mental health problems occur, which may lead to problematic behaviours
- Transition of care between paediatrician to general practitioner

Therefore, when transitioning youth access primary or MHSU care (and are not attached to a GP), it is generally through walk-in or crisis clinics that allow for some anonymity and ease of access. The challenge with these service approaches, however, is often a lack of continuity of care between and across providers within the same clinic, compromising the overall quality of care (Lubman, Hides & Elkins, 2008; McGrew & Danner, 2009).

The onset of a psychotic disorder also carries a number of important medical and non-psychiatric ramifications that merit close medical attention. Foremost is the need for monitoring and intervention with respect to metabolic syndromes attributable to psychiatric medications. Other issues that merit medical attention include substance misuse, tobacco addiction, sexually transmitted diseases, and accidents.

[19] Child Health BC is a network of health authorities and health care providers dedicated to excellence in health care provision to infants, children and youth and have explored the variety of needs of youth with various health concerns (including MHSU) and the challenges in transitioning to adult services. See www.childhealthbc.ca.

Early psychosis intervention program

As important as it is to identify MHSU problems in children and youth early on, there is a large body of evidence that indicates if a developing psychosis is identified and treated early, the overall prognosis and outcomes improve significantly. Early psychosis intervention (EPI) programs targeting transitional youth (generally age 15-25) have been shown to decrease duration of untreated psychosis, decrease hospitalization, decrease police involvement in admissions, lower medication use, improve functional outcome, lower relapse rates, improve treatment adherence and lead to greater client/patient satisfaction (Ehmann, Yager & Hanson, 2004). These programs have demonstrated cost-effectiveness in other jurisdictions. Linkages to emergency rooms, schools, child services, and corrections are particularly relevant. EPI programs provide many services and coordinate with other appropriate services. An integrated child, youth and adult service continuum and care plan is essential for this client population, in order to respond at the onset of psychotic disorders, at whatever age it occurs. In this regard, EPI programs are an example of a hub and spoke model of care.

Given that many health issues can manifest themselves as mental health issues in developing youth, a comprehensive physical examination upon entry into the EPI program – and periodically, as treatments or new circumstances dictate – is required. EPI programs help coordinate access to physical health providers such as GPs, specialists, physiotherapists, nurses, dieticians and others as needed. There is an impressive and growing body of research to support the early assessment and intervention of psychotic disorders in youth – the basis of the recently published *B.C. EPI Standards and Guidelines* (Government of BC, 2010).

The evolving research in early psychosis intervention suggests that the interaction between the elements of EPI services is potentially much greater than the sum of its parts (Ehmann, Yager & Hanson, 2004; Garety et al., 2004; Government of B.C., 2010). Therefore, it is important both for the integrity of the field and for persons with early psychosis that early intervention is applied comprehensively and in

accordance with the identified clinical needs. As with the ACT model, fidelity is critical in order to achieve the expected outcomes noted in the literature.

Preliminary evidence on youth-adapted ACT teams has begun to suggest appropriateness of this most intensive integrated model for those complex youth with psychosis and significant social and functional challenges (McGrew & Danner, 2009).

Key Elements

- Evidence for shared care with children, youth and families is in the developmental stage
- The hub and spoke model is appropriate for youth requiring EPI services
- Fully-integrated systems of care may be appropriate and effective for high risk, complex youth

First Nations, Métis & Inuit peoples

Within the search parameters of this review, no studies with effectiveness evidence were identified that suggested appropriate models of care for First Nations, Métis and Inuit peoples. References to the need for cultural sensitivity were found in studies of homeless and rural/remote populations (Arean et al., 2005; Arean et al., 2008; Halpern et al., 2004; Miranda et al., 2004,) but the analysis specific to this population was minimal. Research into First Nations communities has often been challenged on the grounds that it does not appropriately reflect community needs and culture. Therefore, only research conducted through a partnership with the community and its leaders are considered viable in current discussions. Consideration for cultural implications in research and service delivery for those living off-reserve are just as important. Further, studies of integration often refer to the integration of provincial/federal/community accountabilities for the provision of primary care than to specific models of care including MHSU.

Integration of health and MHSU services for First Nations, Métis and Inuit peoples is complicated by service system requirements and obligations at the community, provincial and federal levels as well as the need to provide culturally-appropriate, competent and safe services (First Nations Health Council, 2009). This involves the recognition that we are all bearers of culture and we need to be aware of and challenge unequal power relations at the individual, family, community and societal level. That is, services must go beyond being aware of or sensitive to cultural influences and uniqueness to fully enabling safe service to be defined by those who receive them (Henderson & Sunderji, 2010). Nonetheless, First Nations, Métis and Inuit people might benefit from integrated services, just as other individuals do.

While First Nations, Métis and Inuit typically experience inadequate access and provision of integrated primary care and MHSU care, work to identify particular models of care should take into consideration recent developments. The signing of the Tripartite Framework Agreement on First Nations Health Governance (October 13, 2011) is a legal document that commits the federal government to transfer the planning, design, management and delivery of First Nations health programs administered by Health Canada First Nations and Inuit Health Branch – B.C. Region, to First Nations control. The framework agreement also speaks to a new health partnership with the provincial government, including that B.C. health authorities will work with First Nations to coordinate, plan and deliver health services that better meet the needs of First Nations. By the fall of 2012, all regional health authorities will have signed regional partnership agreements with B.C.'s First Nations. Finally, the work underway to create a First Nations and Aboriginal mental wellness and substance use ten-year plan through partnered efforts of the interim First Nations Health Authority, Aboriginal partners, provincial, federal and health authority will establish a strong foundation to ensure the development of integrated, culturally appropriate MHSU service delivery models. [20]

[20] See website at www.fnhc.ca.

Developmental disabilities

Individuals who have both a developmental disability [21]and a mental illness and/or substance use problem (i.e. dual diagnosis) are even more vulnerable than others in that traditional health and MHSU services are not able to provide appropriate and continuity of care to respond to their complex needs. There were several research studies related to integrated treatment models for those with these dual diagnoses (Beasley & Hurley, 2007; Davis, Jivanjee & Koroloff, 2010; Jacobstein, Stark & Laygo, 2007; Naar-King et al., 2003). The available literature spoke more to what is not working in service provision rather than attempting to define effective models. Further, the majority of these articles focussed on child and/or youth needs, not adult needs. No articles were noted specific to elderly individuals with a developmental disability.

The complexity of health and MHSU care needs for individuals with a dual diagnosis is highly significant and further compounded by vulnerabilities associated with cognition, available care providers, and lack of specialization within health and social services sectors.

The *Guidelines for Mental Health & Addiction Services for Children, Youth and Adults with Developmental Disabilities* (Government of BC, 2007) was the most recent and comprehensive review of the literature regarding models of integrated care for this subpopulation; the current review uncovered few subsequent studies. These guidelines speak to service needs across the lifespan, acknowledging that the usual need for mental health/substance use service involvement would not typically occur prior to age 12, often due to a shortage of trained and accessible MHSU clinicians. In order to develop a more integrated model for this population, key elements are required.

[21] In B.C., the term developmental disability refers to a diagnosis of mental retardation (as per the DSM-IV-TR), as well as other developmental disorders, some of which are not linked to a specific range of intellectual measures. Still, all developmental disorders share adaptive function deficits.

Table 4 – Necessary service providers and their corresponding roles associated with a more appropriate, integrated model of MHSU and primary care service delivery, for individuals with developmental disabilities

Service Providers	Role	Key considerations
Paediatrician	Primary care provider since birth through childhood.	Interested in/skilled in this field.
Family physician	Takes over primary care throughout adulthood.	Interested in/skilled in this field.
Interdisciplinary team	Expertise in assessing and treating dually diagnosed individuals.	Teams consist of: nurse social worker rehabilitation practitioner occupational therapist
Psychiatrist	Specialist: assessment, treatment recommendations (including medication reviews), and follow-up consultations with team and family physician.	Requires a specialized psychiatrist or one with an interest in this population.
Inpatient services	The team must have access to specialized inpatient services.	Continuity of referral, admission, treatment and discharge is critical.
Community services	Provision of community living supports, housing, education, family supports and/or respite.	Community providers must be a part of the broader care team.

Of the few articles reviewed, case coordination/management through communication models seems to be the primary mode of service delivery currently employed. Significant problems have been identified in working with this population:

1. Lack of specialized services that understand the cognitive adaptations needed to successfully treat the mental health needs of those with developmental disabilities
2. Fragmentation of existing services where they do exist – across service providers as well as across age-based services
3. Lack of cross-training for support services to better understand how to be effective, particularly as it relates to behaviours, substance use, and trauma

Though no specific model of service delivery was identified, Paving the Way: Meeting transition needs of young people with developmental disabilities and serious mental health conditions (RTC Portland Mental Health and Family Support, 2010) also supports the need to match specialist expertise with primary and other community service providers and encourages improvements in provision of care through trauma-informed, person-centred, recovery/strengths-based practice that supports independence. Coordinated networks, as supported by the Substance Abuse and Mental Health Services Administration, have been applied to caring for children with complex needs and may involve standing community teams, intensive community treatment, wrap-around services, and reflective peer supervision, along with strong family supports.

The studies related to learning disabilities clients/patients (Government of UK, 2004; Snell et al., 2009; Taggart, Huxley & Baker, 2008) noted reasonable concern for the growing instance of substance use, (often a response to wishing to fit in,) increased co-morbid mental health issues, cardiovascular, respiratory and gastrointestinal problems, risk-taking behaviour, increased risk of physical disease, higher probability of presenting in emergency department and acute, and a high frequency of offender behaviours. These studies also reflect the disconnect between learning disabilities specialists being able to assess and treat substance use, and substance use specialists knowing how to work with individuals with a learning disability. Cognitive functioning capabilities need to be considered when planning treatment services, and as such, harm-reduction programs may have less success than abstinence-based programs.

Adequate funding of services continues to be a barrier in all jurisdictions, given the multitude of required services and levels of specialization. Supports that may alleviate unplanned health costs related to caregiver burn-out and developing crises include planned respite, on-call emergency supports, and inpatient step-down programs.

In 2006, Canadian best practice guidelines for primary care providers were developed to guide the treatment of health issues in adults with

developmental disabilities (Sullivan et al., 2006). These guidelines were piloted in Ontario and are currently undergoing revisions as a result of those learnings. The MHSU branch of the ministry has contacted Ontario to explore opportunities to link this work with B.C.'s and discuss potential enhancements.

Accreditation Canada's standards (Accreditation Canada, 2010) for programs serving those with a developmental disability require an interdisciplinary team approach as follows:

"The interdisciplinary team includes people with different roles and from various disciplines. Depending on the needs of the client and family, the team may include social workers, psychologists, psychiatrists, nurses, GP, vocational counselling, occupational therapist, speech-language therapist, physiotherapy, personal support workers, recreational therapist, interpreters, teachers, psycho-educators, and client advocates." (p. 5)

Other elements, such as shared workspace and regular communication mechanisms, are suggested. Accreditation Canada standards are based upon regular reviews of known best practices and therefore constitute the best possible advice.

Key Elements

- Promising models identified were the hub and spoke model and fully-integrated systems of care. Both involve a variety of community and health providers including specialists.
- Typical case management approaches (Models 1 and 2) do not have the specialization necessary to support the complexity of health, mental health, substance use, and other social needs of this population.
- General practitioners are critical to the overall care for this population given the variety of co-morbid health concerns.
- Improvements in training for service providers (across primary and community care overall) is necessary in all area of developmental disability; particular emphasis on appropriate treatments for those over the age of 20 and including specific presentations/treatments for substance use is needed.

Rural and remote

Studies specific to unique applications for rural and remote service provision were not abundant but are developing within the literature (Farmer et al., 2005; Gruen et al., 2003; Haggarty, Ryan-Nicholls & Jarva, 2010; Valleley et al., 2007). There is growing evidence that the shared care model may improve access to and continuity of services when compared to traditional case management (Anderson & Larke, 2009; Sullivan et al., 2007). Co-location was found to be a reasonable means to improve accessibility to services but on its own did not necessarily result in improved outcomes (Campbell, 2005). Within assertive community treatment, there are provisions for rural/remote team reconfiguration to address geographic and resource challenges, and it is therefore an appropriate model of a fully-integrated system of care for a rural/remote setting (B.C. Government, 2008).

Access to resources (both facilities, human resources, specialty services) does require heightened innovation. Individuals may not be available to travel, and the provision of home-based services requires strategic scheduling and a critical mass of clients (B.C. Government, 2009).

It is recommended that a more thorough and specific review of eHealth applications be conducted as a tool to support integrated care.

The use of eHealth applications in rural and remote communities was briefly acknowledged within the studies reviewed (McGovern, Lee, Johnson & Morton, 2008; Pyne et al., 2010). Such tools as email and telephone follow-up, hand-held electronic devices for information sharing and client filing, online counselling, and tele-psychiatry services were mentioned. However, due to the parameters of this particular review, we cannot provide recommendations.

Rural and remote considerations also need to include the First Nations lens as many of these communities are located in rural/remote areas of the province and therefore, cultural considerations need to be included.

Key Elements

- Use of technology may improve the ability to provide communication and collaborative models of care.
- Assertive community treatment (ACT) is appropriate for rural/remote communities when revised strategies outlined in the ACT program standards are addressed.

Corrections and forensic population[22]

Similar to other subpopulations, the number of studies outlining specific models of MHSU care for those in correctional facilities and/or transitioning to and from the community is quite limited. A great deal of information is available related to prevalence and the challenges of serving this population across systems that do not always align in service philosophy (i.e. mandated or voluntary participation in treatment) and response to criminal behaviours.

Even with the most commonly reviewed approach for the severely mentally ill, there is little consensus on its ability to impact recidivism and overall health and wellness of the individual. FACT is an ACT team that has a forensic lens; that is, the staffing model and approach to service delivery are adapted to embed correctional services staff on the team and there is an overarching focus on the need to protect the public. While there is growing interest in this model, which has been applied in the United States (with varied levels of outcomes), poor methodology, lack of standards, and dissimilar local program adaptations have created significant barriers to building the evidence for FACT (Cuddleback, Morrissey, Cusack & Meyer, 2009). There is further risk of marginalizing this population by specifically identifying teams as forensic and therefore identifying clients with a criminal

[22] Though grouped together for the purposes of this document, it is important to acknowledge the two populations – those involved with the provincial correctional system and those sentenced under the federal forensic system. The latter population includes those legally identified as not criminally responsible on account of a mental disorder and unfit to stand trial pursuant to the Criminal Code of Canada vs. those individuals previously or currently involved with the criminal justice system without that diagnostic status.

history. Rather, it may be better to incorporate into existing ACT team configurations to address those individuals who may have had, or are at risk of having, criminal justice involvement.

A promising community-based practice is perhaps the development of community court concepts that are linked to integrated case management (ICM) or ACT teams. Again, the models vary significantly, but essentially the goal is to better serve those with a predominant mental illness and/or problematic substance use who are participating in criminal activities that are low in severity but often high in frequency (Chaiken & Prudhomme, 2010). Through formalized partnerships with the courts and local judges, linking individuals to an ICM or ACT team may be more effective in the overall care planning for an individual, than a more traditional response to incarcerate or hospitalize.

Access to mental health services for those individuals involved with the criminal justice system remains a key requirement (Morrissey, Fagan & Cocozza, 2009). While this population may require additional efforts to engage in treatment delivery, or their criminal history may cause the care provider concerns, mental health care providers need to see beyond the nature of the offence and address the individual's mental health needs.

Access to primary care for these individuals is often challenging (as described above) and often not pursued. A team approach to engage, actively advocate for, and provide support to access and follow-up with primary care is essential (International Center for Criminal Law Reform, 2009).

Key Elements

- Given the complexity of their needs, it is most likely that some form of fully-integrated system of care will be most effective with this population.
- Limited evidence exists for forensic ACT services.
- Further research is needed to best understand the appropriate models for this population.

Commentary on cost effectiveness

The intent of this review was not to assess cost effectiveness of each identified model. However, notations were made where studies provided some analysis of cost impacts. Therefore, the following is only a brief synopsis and is not reflective of the cross-system cost analysis from a social perspective that is necessary to truly understand overall cost-benefits. A formal review of the cost effectiveness literature overall would need to be conducted as a secondary process to this report.

Cost effectiveness studies per se across all levels of integration, were not consistent in the types of cost indicators measured. Challenges in analyzing this research included contradictory outcomes, small numbers of studies reporting on costs from an impact on life expectancy/quality of life perspective, and short follow-up periods. Further, given that the study populations varied across levels of integration, it is difficult to provide a clear analysis of which approaches might be most cost-effective overall, or which might result in significant cost recovery due to decreased utilization of emergency room and acute services. Of particular importance, however, is the recognition that cost-effectiveness is only one element of the triple aim. Impacts on health and client/patient experience count too. Therefore, cost effectiveness analyses must be paired with the clinical and qualitative outcomes to be of particular relevance to the B.C. integration initiative's goals.

The systematic reviews of economic analyses suggest that effective integration comes at a cost comparable to other commonly performed medical interventions.

Having said that, the following statements based on limited information can be made:

- Greater costs at the community provision level are expected as a result of integrated care. That is, significant clinical outcomes can be achieved but at an incremental cost comparable to other accepted medical intervention (Gilbody, Bower & Whitty, 2006; Schoenbuam et al., 2001).
- Most cost-effective approaches include evidence-based practice guidelines as supporting intervention tools.

    - Use of screening tools has been found to decrease costs associated with substance use (Parthasarathy, Mertens, Moore & Weisner, 2003).
    - Interventions involving provider education along with clinical tools and /or supports provide enhanced clinical benefits for individuals with depression (Domino et al., 2008; Pyne et al., 2010; Simon et al., 2001).
- Co-location appears to be cost-neutral compared to usual care (with limited client outcomes), for adults with serious and persistent mental illness (Dewa et al., 2009; Wang et al., 2006).
- Cost effectiveness studies do not report dominant cost effectiveness for shared care generally, but suggested reasonable health outcome costs comparable to other medical interventions (Simon et al., 2001).
    - Shared care has the ability to decrease emergency department use and hospitalization while improving symptomology for individuals with depression and anxiety and costs are comparable to other medical interventions (Butler et al., 2010; Dickinson et al., 2003; Katon et al., 2005).
    - For individuals with bipolar disorders, the shared care model improved client/patient involvement in decision making and compliance with treatments improved significantly, while maintaining a cost neutral intervention (Bauer et al., 2006).
    - For panic disorder, there were fewer studies, but the results are similar to depression: effective and a reasonable health outcome cost (Katon et al., 2002; Katon et al., 2006; Rollman et al., 2005).
    - For individuals with severe and persistent mental illness, shared care was associated with a modest incremental cost, and consumed fewer resources than medically

provided MHSU care, but full psychiatric outcomes were not reported (Cummings, 2009). Shared care is considered a high value investment for the elderly; high clinical benefits at a low incremental cost (Counsell et al., 2009; Katon et al., 2005).

- Reverse shared care may be effective in decreasing costs related to referrals for tests, specialists, and emergency department and inpatient days (Druss et al., 2001; Matalon et al., 2002).
- Assertive community treatment is more cost-effective than inpatient tertiary care for the severely mentally ill adult population (including those with concurrent substance use), and will reduce costs associated with emergency department and inpatient care for high users (Franx et al., 2008; Rosen, Mueser & Teesen, 2007). Growing evidence is developing on its ability to impact costs associated with the corrections system and there are early research developments regarding its appropriateness with transitioning youth (McGrew, 2009).

Improving physician engagement in MHSU services

A number of key themes were identified that affect physician commitment to any form of collaborative and integrated care. These themes can be translated into concrete actions to improve integration between primary and community care, and MHSU services. As well, B.C. has established a number of activities/initiatives to facilitate better linkages between family practitioners to augment the overall care of the individual and set a foundation for moving forward.

Table 5 – Themes of improving physician engagement with MHSU care

Theme found in literature	Current supports in BC	What we can do
Best practice guidelines written specifically for the primary care practitioner	• Guidelines (e.g., dementia care, electroconvulsive therapy, problem drinking) • Canadian best practice guidelines for primary care providers developed to guide the treatment of health issues in adults with developmental disabilities through the Accreditation Canada (2010) Qmentum Program.	• Publish, implement, and support the application of best practice guidelines written specifically for the primary care practitioner. • Provide appropriate interventions to build the capacity within the GP community to respond to a variety of MHSU presentations at their early stages and/or access necessary MHSU specialty care in severe situations.
Access to high quality and easily applied tools and resources	• B.C. Partners – self-management tools, information/brochures, fact sheets, education. • Family Physician Guide: For Depression, Anxiety Disorders, Early Psychosis and Substance Use Disorders • A variety of clinical practice tools have been developed in B.C. to assist in early identification of mental health or substance use issues.	• Ensure physicians have access to high quality and easily applied screening tools, self-management tools, resource materials, and education/training. • Include specific training modules related to various subpopulations (e.g., children, youth and families; older adults).

Theme found in literature	Current supports in BC	What we can do
Importance of physician leaders	• Allied Leadership – expert physicians in the province focus on various elements of health service provision that would assist in the development of service options (e.g., ACT, methadone maintenance treatment, wellness clinics).	Develop, encourage and foster physician leaders – involving excited, passionate physicians in this work has a contagious effect on colleagues.
Planning discussions from the start	Physicians have been actively involved in Ministry of Health discussions for many years, most recently through: • British Colombia Medical Association • General Practice Services Committee • Divisions of Family Practice	Provide opportunities and mechanisms for physicians to have a voice in planning discussions from the outset.
Removal of barriers	• Ongoing challenge to combat stigma however a number of multi-organizational activities aim to address • Patients as Partners brings the commitment to the patient and family voice in service development and delivery.	Remove barriers to physician involvement (e.g., timing of meetings, types of input/ involvement required, financial reimbursement).
Ensuring fee structures	▪ Updated fee codes for mental health care planning – enable physicians to have the additional time they need to interact fully with patients to understand their symptoms and develop care plans.	Ensure fee coding/structures adequately compensate physicians for the expanded type of work and time associated with integrated care planning.
Networks of physicians	▪ Community Healthcare and Resource Directory (CHARD): a web-based directory of MHSU specialists and services, containing information to assist primary care providers with patient referrals ▪ Division of Family Practice: affiliations of family physicians with common heath care goals for specified geographic areas	Establish networks so physicians can access/support each other.
Alternative modes of service provision	▪ Improved use of tele-psychiatry and electronic health records. ▪ Provincial standards of care for assertive community treatment and early psychosis intervention.	Support and facilitate the use of alternate modes of service provision (e.g., eHealth applications) and ensure they are easy to implement, efficient, and operate properly.

Theme found in literature	Current supports in BC	What we can do
Linkages with schools and teaching hospitals	▪ Mandatory training in shared/collaborative care. A beginning step in building a philosophical approach to partners in care provision.	Linkages with medical schools and teaching hospitals to build the vision of integrated care in upcoming physicians including specific modules and locums with a focus on MHSU.
Knowledge exchange	▪ Knowledge Exchange activities (e.g., physician rounds, joint training). ▪ Practice Support Program modules and commitment to ongoing training.	Provide opportunities for knowledge exchange across physicians as well as community providers. Share evaluation experiences and outcomes.
Appropriate use of time/energy	▪ Physicians sit on projects and integrate where possible. ▪ Ongoing challenge to balance involvement, availability, cost and timing with other physical priorities.	Acknowledge physician resources are limited. Do not overextend the ability of physician leaders and specialists – use their time and energy wisely.

Making it work

It would appear that any level of integration improves self-reported client/patient satisfaction, but what really makes it work? What achieves actual physical, mental, and economic improvements? While some elements were studied in particular models (e.g. stepped-care algorithms), some common themes were noted through this review (Craven & Bland, 2006)[23]. Success will depend on any program's ability to provide:

- Ongoing, long-term follow up if needed by the individual. Much of the research did not follow study participants past two years.
- Treatment guidelines and protocols are not only effective but also necessary supports to integrated care.
- The degree of integration was not so much a factor in predicting success as the relationships built between the individual and his/her care providers.
- Changing the fundamental philosophical approach to service delivery will take time and ongoing commitment.
- Welcome early adapters and adopters -these leaders will pave the way for change.

A number of variables were noted, in both the literature and through service provider consultations, as common themes that make collaborative care work. These variables are important considerations for system redesign that allows for true integration of service delivery, responsive to the unique needs of the population and community.

[23] The review found that for those with depression, systematic follow-up and collaboration supported by treatment guidelines or protocols were important success elements. However, those concepts are also consistent with elements in the integration models and the chronic care management.

Client needs to drive the model of care

A universal model of integrated and collaborative mental health and substance use care will not be effective in responding to the needs and resources of the various current presentations of mental illness and substance use in the emergency department or acute care units. In order to develop responsive and appropriate service, we must consider and address the specific needs of each population and look beyond health needs to other social indicators (e.g., housing, income, employment, and safety). We also must ensure that services are provided at the right time, in the right place, by the right providers. This approach allows the service system to be creative in responding to individual needs, without being compromised by systemic barriers.

Similarly, by employing services through a recovery-oriented/strengths-based approach that also embodies the stepped care philosophy, the focus of care moves from illness and treatment to wellness and recovery. This change in focus alone empowers individuals to become more active partners in their overall care.

Relationships are key

Fostering the development of the critical relationships in the community must be a priority and the immense need (time, resources, and facilitation) for change management must be planned for. Collaborative and integrated care goes against the fundamental drivers of traditional health service provision and will require some time to adapt and evolve. Barriers across professions and historical hierarchies must be addressed in order for the particular expertise of various disciplines to be effective in the overall care team. Culture shifts will be necessary on many sides: lack of understanding of the culture and pace of the primary care setting among traditional MHSU clinicians, unclear and changing roles and responsibilities, poor communications between GPs and specialists about non-attending patients, and a harder-to-engage population will all create challenges.

Interdisciplinary team approach

Regardless of the level of patient severity, collaborative and integrated MHSU care ensures service provision by a team of various professionals and programs including psychiatrists, GPs, nurses, mental health, substance use, social work, and other community supports (housing, employment/income, rehabilitation). This approach also allows for ongoing consultation and support across service providers, including after hours and crisis care.

Use of technology

Technology can play an important role in bridging the gap between access to team specialities and bringing services closer to home. A single client file (via the electronic health record) that allows all providers access to a comprehensive picture of care – and therefore a comprehensive care plan – has been noted as a necessity for success. Video conferencing and educational/communication media were also cited as underutilized but capable of adding great value to client care. Many studies of innovative use of technology are available (Fortney et al., 2007; Ludman et al., 2007; McGovern, Lee, Johnson & Morton, 2008; Pyne et al., 2010,) but consistent, strategic, province-wide or organization-wide use of eHealth applications within service modelling is not nearly as common as it could be. It should be further explored.

Similar to the research on co-location alone or use of guidelines alone, technology as the only method to improve communication (i.e. without enhancements to the environment or relationships between providers), will not be successful at integrating care. In fact, quality evidence was found against using paper record-keeping strategies alone (Warner et al., 2000).

Education & training

Education and training is required at multiple levels. General practitioners have experienced great value from recent education initiatives, easy access to simple assessment tools, and referrals to specialist services as reported in the variety of integrated health networks and shared collaborative care approaches in British Columbia. However, there remains uncertainty related to appropriately treating the more severely mentally ill and those with problematic substance use; therefore, further attention to this area is still required.

Cross-training is also achievable through interdisciplinary team services. While primary care practitioners learn about mental health and substance use issues, MHSU program staff learn more about the co-morbid impacts of health factors on overall care. Further, individuals and their families will also benefit from education and awareness activities that assist them in understanding how integration of services work and the benefits to their overall quality of care. For some, this education may need to be recurrent and frequent.

Local champions / early adopters

Finding champions, such as GPs with a special interest in the population of concern (e.g. children and youth, schizophrenia, substance use,) will provide more authentic resolutions to service delivery challenges than larger, policy approaches.

It is clear that this level of change requires thoughtful and strategic planning, and it will take time to build new relationships, commitment to evidence-informed practices, and the restructuring of long standing practices that many health care providers have been indoctrinated into through their professional training. It will take a commitment from leadership to look beyond the dollar, to what is really needed for the clients/patients being served AND provide a variety of approaches to service delivery across the continuum of needs. In that regard, future considerations for the partnerships between the community system and this new way of doing business needs to be communicated and built upon through the inpatient and tertiary systems to ensure overall continuity of care.

Appendix A: Methodology

Four individuals conducted extensive literature reviews in three topic areas: Models of Integrated Primary Care and Mental Health and Substance Use; Children and Youth; and Substance Use. Three individuals independently led the search process for one of the topics and then the fourth individual conducted a literature scope review for all of the topics to check whether or not there were gaps in the reviews. The following is a summary of the search processes that were used for each topic.

Models of integrated primary care & MHSU care

Databases and Grey Literature

The library staff conducted a search for studies of integrated mental health and primary care between 2000 and 2010, in the following databases:

- PubMed. The search was broken down by sub-categories (i.e., by reviews, clinical trials, elderly, aboriginal, rural, etc.). Keyword combinations were also used.
- Ebsco, including PsycInfo, PsycArticles, Bibliography of Native North Americans, SocIndex, Academic Search Premier, Ageline, CINAHL (nursing and allied health), Health Business Elite; ERIC, Biomedical Reference Collection.
- Evidence Based Medicine Reviews (which includes the Cochrane database of systematic reviews)
- HHS Library online catalogue
- Worldcat, AMICUS
- Longwoods journals

The focus of the search was on organizational models and on evidence-based practice. The library also searched with these journals especially relevant to the topic area: *Family, Systems and Health*, *Administration and Policy in Mental Health, Community Mental Health Journal, Behavioural Healthcare, Evidence-Based Mental Health, International Journal of Integrated Care, Journal of Integrated Care,* and *Psychiatric Services*.

The library also reviewed bibliographic references at the end of pertinent articles/reports such as the Milbank paper "Evolving Models of Behavioural Health Integration in Primary Care" and the AHRQ "Integration of Mental Health/Substance Abuse and Primary care" reports. They identified and searched main authors writing in this area, and searched for more information on specific models mentioned in these studies.

In regards to searching the grey literature, some of the main organizational websites were listed in the study "Evolving Models of Behavioural Health Integration in Primary Care". The library also searched the grey literature repository at the NY Academy of Medicine, the Worldcat database (which houses the grey literature repository OIASter), and AMICUS (Library and Archives Canada national database). Examples of individual websites accessed include the: Canadian Collaborative Mental Health Initiative, The Hogg Foundation for Mental Health, Shared Care: Collaborative Mental Health Care in Canada. 2010 Conference presentations, Centre for Addiction and Mental Health [CAMH], Kaiser Permanente, Dept of Veterans Affairs.

Corporate Policy staff also performed its own search of PubMed and Ebscohost within the same date range and cross-correlated the results.

Identified Primary Studies

In all, the searches identified 428 studies, which in turn were narrowed down to 136 studies for the primary analysis. These 136 primary studies reported quantitative patient (symptom severity, treatment

response, remission, et cetera) and system (utilization) outcomes and also included cost effectiveness and other cost-studies.

Identified Secondary Studies

We identified 165 studies of secondary interest and narrowed them down to 25 studies, including a couple which were overlooked in the primary analysis. These 25 studies used qualitative data, often patient or provider satisfaction data, or limited access data.

Inclusion/Exclusion Criteria for Primary Studies

All of the studies that were included as a primary study reported quantitative patient (symptom severity, treatment response, remission, et cetera) and system (utilization) outcomes and also included cost effectiveness and other cost-studies. Studies that only reported qualitative outcomes, (for the most part patient and provider satisfaction), and non-systematic reviews of trials that nonetheless had something incisive to say about the integration models were excluded from the primary analysis, and will be discussed in the secondary analysis.

Inclusion/Exclusion Criteria for Secondary Studies

All of the studies included as a secondary study used qualitative data, often patient or provider satisfaction data, or limited access data. We excluded the studies which focussed on populations that were adequately studied in the primary analysis (e.g., veterans, older adults, depressed and anxious patients).

Criteria for Ranking Levels of Evidence

Primary studies were categorized according to level of integration, applying a schematic adapted from that proposed by Collins et al. (2010). The primary studies were arranged by intervention level within a Microsoft Excel spreadsheet and further sorted by evidence level on the Oxford scale (University of Oxford, 2009), disease and patient characteristics, and the better to aid analysis.

Children and youth

Databases and Grey Literature

To identify the best available research, the Children's Health Policy Centre uses systematic methods that were adapted from the Cochrane Collaboration (2010) (see www.cochrane-handbook.org). Using this methodology, they searched the following databases:

- Medline
- PsycINFO
- Web of Science

Key Terms

The search included the following key terms: shared, collaborative, and integrated mental health care in children.

Identified Studies

The search produced 114 potentially relevant publications, three of which mentioned child outcomes.

Inclusion/Exclusion Criteria

All articles were published in English about children aged 0 to 18 years of age. The topics of the articles were relevant to children's social and emotional wellbeing or to mental disorders in children. Limits were applied to identify systematic reviews and studies with comparison groups. Using the systematic methodology from the Cochrane Collaboration the following inclusion criteria applied:

- Clear descriptions of participant characteristics, study settings and interventions;
- Random allocation of participants at outset to intervention and comparison groups;

- Maximum drop-out rates of 20 per cent post-test, with intention-to-treat analysis;
- Follow-up of three months or more after post-test;
- For medication studies, double-blind placebo-controlled procedures used;
- Outcomes assessed according to two or more informant sources (child, parent, teacher, other); and
- Statistical and clinical significance reported for all outcomes.

Criteria for Ranking Levels of Research Evidence

Adapted from *The Bandolier Journal* (2007), the following criteria were followed:

- **Level I –** Systematic reviews summarizing multiple well-designed studies
- **Level II** – Well-designed randomized-controlled trials
- **Level III** – Prospective cohort studies
- **Level IV** – Retrospective case-control studies
- **Level V** – Case studies or expert opinion (including narrative reviews)

Substance use

Databases and Grey Literature

A literature search was conducted of the following databases:

- Medline
- Cochrane Database of Systematic Reviews
- DrugData
- Alcohol and Drug Findings
- Drug Treatment Outcomes Studies website

- Library databases of the Canadian Centre on Substance Abuse and the Centre for Addiction and Mental Health.

Key Terms

Subject descriptors and keywords included: hospital, primary health care, quality of health care, delivery of health care, integrated, substance abuse treatment centers, alcoholism, alcohol-related disorders, substance-related disorders, mental health, community mental health services, comparative effectiveness research, cost-benefit analysis, evaluation, and treatment outcome.

Identified Studies

The search identified 121 articles and documents judged to be potentially relevant. These materials were examined relative to the requirements of the statement of work and 53 articles were selected for analysis and inclusion in the review.

Inclusion/Exclusion Criteria

Initially the literature search focused on articles published from 1999 onwards; however, as the search progressed, review articles led to earlier studies. The search covered the jurisdictions of Canada, United States, Australia, and the United Kingdom.

Evidence reviews summarizing randomized controlled trials and high quality quasi-experimental design studies as well as individual studies were selected and analyzed relative to the requirements of the purpose and key questions of the review. Relevant theoretical material was also reviewed, with a focus on the most recent analyses and perspectives.

Appendix B: Consulted works[24]

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Models of Communication

1. Communication between Practices

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