



# Models of Outpatient Care for the Ongoing Care and Treatment of People Living with HIV



## Question

What models of outpatient care for the ongoing medical care and treatment for people living with HIV are most effective?

## Key Take-Home Messages

- Integrated care programmes that incorporate outpatient care, social support, psychosocial interventions and case management provide the best care for people with HIV.
- Accessible outpatient care can have positive effects on patient health outcomes and quality of life, reduce emergency department visits and hospitalizations, and improve antiretroviral adherence.
- The San Francisco Model and the Vermont Model, both from the US, are integrated, multidisciplinary care models that have shown great success in improving service delivery and the health of people with HIV.
- The literature also supports integrating mental health and addictions services with HIV medical care in the community.
- HIV specialists and primary care physicians with specialized knowledge in HIV provide the best care for people with HIV.

## The Issue and Why It's Important

The needs of people with HIV, both medical and psychosocial, are becoming increasingly complex. In addition to complicated medication regimens and ever changing concerns related to co-morbidities, many people with HIV need other services and supports, including mental health services, harm reduction/addiction services, housing, transportation, food security, and other support services. What are the best ways to meet these needs?

## EVIDENCE INTO ACTION

The OHTN Rapid Response Service offers HIV/AIDS programs and services in Ontario quick access to research evidence to help inform decision making, service delivery and advocacy. In response to a question from the field, the Rapid Response Team reviews the scientific and grey literature, consults with experts, and prepares a brief fact sheet summarizing the current evidence and its implications for policy and practice.

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Policy makers are looking for information on the most effective and cost-effective ways to structure health care and service delivery models to best meet the needs of people with HIV. The Rapid Response Team was asked to quickly review the literature to identify successful models of outpatient care for people with HIV and the characteristics that make them effective.

## What We Found

To understand effective models of outpatient care for people with HIV, the Rapid Response Team first reviewed synthesis studies investigating general outpatient models of care not specific to HIV. A meta-analysis of studies conducted in Western Europe, Australia and North America found that interactive communication about individual patients between primary care physicians and specialists is associated with improved patient outcomes.(1) The magnitude of improvement is significant enough that resources invested in promoting interactive communication offer an equal if not better return on investment than other clinical interventions. The evidence also suggests that these results are generalizable for both integrated and nonintegrated healthcare systems.(1) Shared care has also been shown to significantly improve appropriate prescribing and medication adherence and decrease patient drop out.(2)

A review of systematic reviews evaluating integrated care programmes for chronically ill patients found that the reduction in fragmentation and the improvement in continuity of care provided by integrated systems have a positive effect on quality of care.(3) The positive trends were seen in hospital utilization, quality of life, functional health, patient satisfaction and process outcomes such as adherence to guidelines and compliance with medication.(3) There are limits to the generalizability of these results due to the various definitions of “integrated care” across programmes.

### Outpatient Services for People with HIV

Care centres, whether ambulatory or inpatient, that serve a large number of people with HIV provide the best care.(4) This has been attributed to the more comprehensive ancillary services available at high volume centres as well as the specialized expertise that comes from a practice that is primarily focused on serving people with HIV.(4) A Cochrane Review found that care centres with a high volume of HIV-positive patients provide the most effective HIV medical care and have the most successful patient outcomes, including measures of mortality.(5) Case management services were also associated with improved outcomes, but due to the quality of data available it is unclear what forms of case management are most effective. Similarly, multidisciplinary and multi-faceted treatment, health information systems and extended hours of operation appear promising but the evidence is lacking to make a definitive claim.(5)

There is conflicting data regarding the impact of outpatient care use on hospitalization and visits to the emergency department. Using data from the AIDS Costs and Service Utilization Study (ACSUS), an American study found that engagement with ambulatory care services had only small and generally insignificant reductions in hospitalization rates and emergency department use.(6) For patients who developed AIDS-defining symptoms, however, the number of ambulatory visits caused a significant reduction. This study concludes that, “outpatient care may offset inpatient and emergency department services at particular points in the disease course.”(p.1228)(6)

Alternatively, a chart review, also undertaken in the US, revealed that one-third of hospital admissions of people with HIV were preventable.(7) Contributing factors included lack of proper outpatient follow-up, inappropriate or no prophylaxis for opportunistic infections, poor patient compliance, failure to refer appropriately and inadequate discharge planning from a prior admission.(7) The same study also included a survey of providers and patients which found a lack of awareness of HIV resources available in the community, among both physicians and patients, and low rates of referral for specialist and ancillary services.(7) To address these concerns, the clinic under review implemented a number of initiatives which included patient flow charts, the addition of an HIV-specialized nurse practitioner and an adherence nurse counselor, dissemination of evidence-based guidelines, the creation of a multidisciplinary specialty consultation team and the implementation of electronic medical records. These efforts resulted in an increased assessment of medication adherence, a reduction in the total ratio of emergency department visits to inpatient admissions, and a decrease in opportunistic infections.(7)

Tsasis (8), reporting from Canada specifically, also shows that outpatient care has been shown to decrease the frequency of HIV/AIDS patient hospitalization.

Features of the outpatient services specifically aimed to increase accessibility may in part account for this discrepancy in results. A study of New York Medicaid enrollees with HIV found that patients served by clinics with a variety of features to promote accessibility had a one third reduction in their odds of being hospitalized in the year preceding an AIDS diagnosis.(9) Such features include evening or weekend hours, case management services, appointments available within 48 hours, telephone consultations and urgent care services.(9) Such accessibility considerations are particularly important for vulnerable communities including women, people who use substances and low income patients.(9)

### **Integrated Service Models for People with HIV**

The literature repeatedly asserts that a holistic approach to care within HIV clinics is paramount to meeting the complex needs of people with HIV.(8;10;11) An American study using a national sample of people with HIV found that case management was associated with fewer unmet social needs and greater use of antiretroviral medications.(10) For individuals not yet on HAART, use of case management services was associated with an increase likelihood of accessing HAART. (10) These results have been confirmed by several other studies promoting case management services for people with HIV as they have repeatedly returned improved patient outcomes, both in terms of physical health and quality of life.(12-14) One study reported four specific ancillary support services that increased access to and retention in HIV primary care: case management, transportation, mental health services and addictions interventions.(15) The research team concludes that having a case manager is associated with a greater likelihood of receiving HIV medical care.(15) Another study specific to women with HIV shows that delivery of ancillary services was associated with improved retention and adherence, enrollment on research protocols, prescription of protease inhibitors and reductions in emergency department visits and hospitalizations.(14)

A Canadian analysis concludes that a full range of support, including medical, pharmacological, psychological, social, nutritional and educational services, appear necessary to achieve successful patient adherence to antiretroviral

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therapy.(8) As people with HIV fluctuate in terms of the level of care required, the current Canadian healthcare system does not facilitate movement across levels of care, making comprehensive care more difficult to provide.(8) A British Systematic Review additionally suggests that palliative care and hospice services be included in the spectrum of services available from the multidisciplinary team. (16)

There are currently no multidisciplinary standards of care for people with HIV in North America.(11) An example of an interdisciplinary clinical care path in use at Kaiser Permanente Medical Centre, Santa Rosa, has found that patients receiving treatment according to the care path had fewer visits to primary physicians and more visits with nurse practitioners, nutritionists and social workers. An evaluation of the services also revealed that these patients had fewer emergency department visits, less use of psychiatric services and shorter stays when hospitalized.(11)

A model repeatedly reported on in the literature is the San Francisco Model, which is a case managed continuum of care with an emphasis on outpatient services.(8;11;17) The Model provides comprehensive care across numerous healthcare settings and relies on a multidisciplinary team of infectious disease specialists, oncologists, psychiatrists, nurses and social workers. Its success lies in the collaboration and integration of professional activity and expertise revolving around locally accessible primary care.(8)

The San Francisco Model was adapted by a research team in Vermont for delivery in rural communities.(17) The Vermont Model, as it has come to be known, relies on the delivery of shared care by a rural physician who provides a majority of the care and an urban HIV specialist who provides periodic consultation as needed. The model was developed after a survey of rural people with HIV showed that 75% felt it was important to receive care in their own community. (17) The rural physician is based in a multidisciplinary team of nurses, social workers and community based support members who work together to address diverse needs. As with the San Francisco Model, the Vermont Model strives to concentrate the care of patients with HIV in a single specialty clinic and avoid regional fragmentation of services.

Worthington, et al.,(18) provide support for the implementation of a model similar to the San Francisco and Vermont models here in Canada. They noted that, as service needs of people with HIV become more complex, community-based organizations are being extensively used to address social issues such as income, housing and psychosocial issues. The research team concludes that new approaches are needed to coordinate care and enhance access for people with HIV in Canada including both medical care and social support. (18)

### **Child and Adolescent Care**

According to the Working Group on Antiretroviral Therapy and Medical Management of HIV-Infected Children, a multidisciplinary care team consisting of physicians, nurses, social workers, clinical pharmacists, nutritionists and counselors is the foundation of a successful pediatric/adolescent HIV program. (19) An American clinic has noted that this range of professionals addressing a wide range of needs necessitates extensive documentation making medical records quite voluminous and clinical data difficult to locate and track. To address this, the clinic implemented use of patient data flow sheets and found significant improvement on five quality indicators: hepatitis profile, screening for



previous toxoplasmosis infection, baseline EKG/echo, annual chest X-ray, and pneumococcal antibody titers.(19) In addition to reminding team members when tests need to be performed or actions taken, the flow sheets have increased the efficacy of patient care as care providers are easily, at a glance, able to identify which clinical tests have been performed, when, and what other needs require evaluation.(19) An additional benefit has been seen in team members ability to focus exclusively on their area of expertise as collaboration and interdisciplinary communication are built in to the very way that patients move through clinical services.

### **Integrated Care for Mental Health, Addictions and HIV**

In addition to integrating general healthcare services, integrating mental health and addictions services with HIV care return the best patient results.(20) Eight ancillary services have been identified as key to the management of co-morbid HIV/AIDS, substance abuse and mental health disorders, including: material support such as food and housing, education about HIV, self-help HIV support groups specific to substance users, case management, transportation, client advocacy, child care and dental care.(21) Receipt of either mental health or substance abuse services is a significant predictor of meeting HIV primary care standards.(21) Regular contact with a case manager is significantly associated with being prescribed a protease inhibitor, improvements in treatment adherence and retention in primary care.(21) These results support the notion that patients' interacting biological, psychological, and social needs should be addressed simultaneously rather than as separated, isolated dimensions.

An American evaluation of integrated substance use and HIV services returned impressive improvements across domains.(22) Patients enrolled in an integrated nursing-based treatment protocol improved their health, mental health, health functioning and wellbeing significantly and experienced sustained decreases in substance use at 12 month follow up.(22)

### **HIV-Specific Physician Expertise**

Time and again, research has shown that there is no substitute for experience. HIV specialist physicians and primary care physicians with specialized HIV knowledge provide the best care for people with HIV.(4;23)

A Swiss study using a prospective cohort design revealed that people with HIV can be treated by highly motivated general practitioners provided they have specialized knowledge in HIV and strive to keep updated with the rapid developments in the field of HIV medicine.(24) Similar to the results of the meta-analysis included above, co-operation and communication between the general practitioner and specialist physician(s) is fundamental to the success of such a model of service delivery.(24)

### **Trends in the Delivery of HIV Care**

This rapid review of the literature did not uncover any data regarding how much care is currently being provided by primary care providers versus infectious disease specialists. While the research repeatedly supports cooperation between the two, the actual division is not quantified.

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## Factors that May Impact Local Applicability

All of the studies included herein were conducted in high income countries with strong healthcare delivery systems. For this reason, the results of this Rapid Review are generally applicable to the Canadian context, particularly for studies that used health outcomes and quality of life as indicators of success. Cost effectiveness data must be evaluated with caution as the majority of included studies were conducted in the US, where a very different model exists for paying for healthcare.

## What We Did

We searched Health Systems Evidence ([www.healthsystemsevidence.org](http://www.healthsystemsevidence.org)) by combining HIV as a text term with the 'Integration of services' and 'Continuity of care' categories and scanned all reviews under the 'Skill mix – multidisciplinary teams' category. We also searched Medline and Embase using the following combination of search terms: HIV AND (Delivery of Health Care, Integrated [MeSH term] OR Delivery of Health Care [MeSH term] or Health Services Research [MeSH term] OR Health Planning [MeSH term]) AND (outpatient OR out-patient). Lastly, we conducted a related articles search in PubMed combined with text search terms (outpatient OR out-patient) using the Cochrane review by Handford et al. on settings and organization of care for persons with HIV.