



# Real World Experience in HCV Awareness, Testing, Care and Knowledge Transfer in Northern Canadian Rural Clinic

Acknowledgment to



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## Background

An estimated 10,000 people in Saskatchewan live with Hepatitis C (HCV).<sup>1</sup> Patient's access to HCV treatment outside of the urban centres is extremely limited. Since 2014 a specialist HCV team from Saskatoon (SIDCN)<sup>2</sup> has been conducting HIV / HCV clinics in the several northern rural communities around the province including La Ronge, located 400 km north of Saskatoon



La Ronge Medical Clinic is a primary care clinic with 14 primary care physicians (GPs) on site, catering to a population of 14,000, including four First Nation communities. The measurement/survey phase of the project indicated that a minority of the patients who tested positive for HCV Ab had been treated (n=5/238) and that the majority (74%) of those diagnosed had not engaged into care.



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1. HIV Strategy 2010-14 <http://www.skhiv.ca/>  
2. Saskatchewan Infectious Disease Care Network

## Objective

To evaluate the entire clinical model according to LEAN principals from screening, to diagnosis, evaluation, education, treatment and follow up with the intention of improving provider and community awareness, diagnosis, engagement, treatment and cure of HCV.

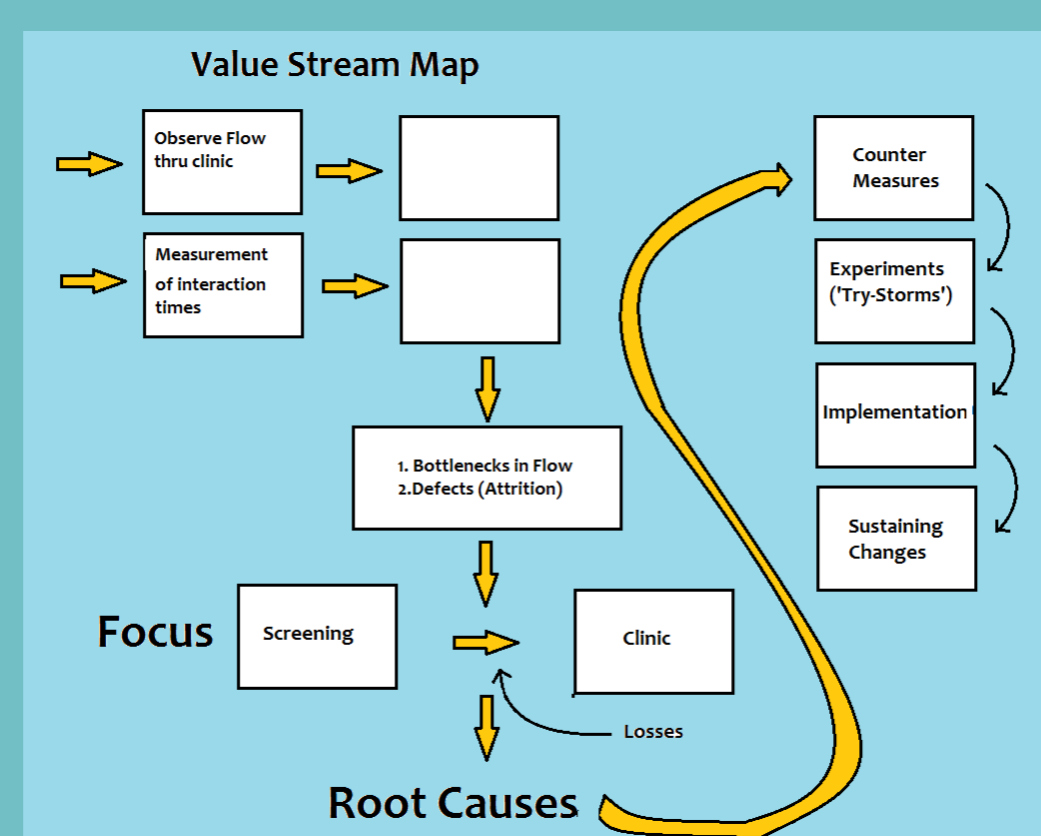
## Methods

A team of front-line clinicians applied LEAN practices to address the problem. Visiting specialists transferred crucial knowledge to local clinicians. The practice of linking patients immediately to RN case managers promoted engagement, investigations and follow up. A policy of selective referrals to the specialist was revised to referral of all HCV RNA + patients for assessment. The concept of age cohort testing was introduced to the clinicians to complement risk based testing. The team redesigned patient flow and introduced an efficient system of fibro-scanning and vaccinating. A "one-stop" lab visit eliminated the prior practice of 3 lab visits to ensure complete testing. A weekly HCV peer support group was initiated.

An inter-disciplinary team took a classical Lean approach (The Toyota Way) modelling, measuring, modifying and then trialing interventions that resulted in optimal quality and efficiency at all stages.

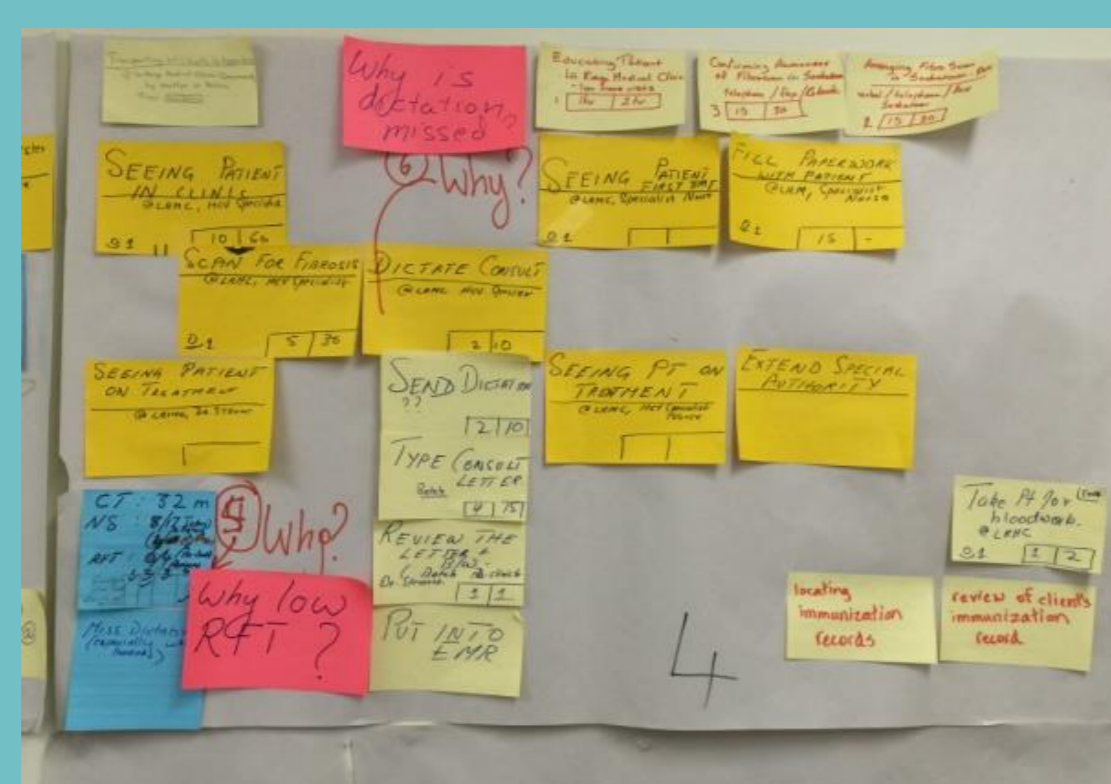
Processes targeted for improvement

1. Screening and testing of at risk patients
2. FPs' referral to Dr. Stewart
3. Hepatitis C 2 day Specialist Clinic
4. Patient engagement (RN Case Manager and Patient)



### LEAN techniques and processes

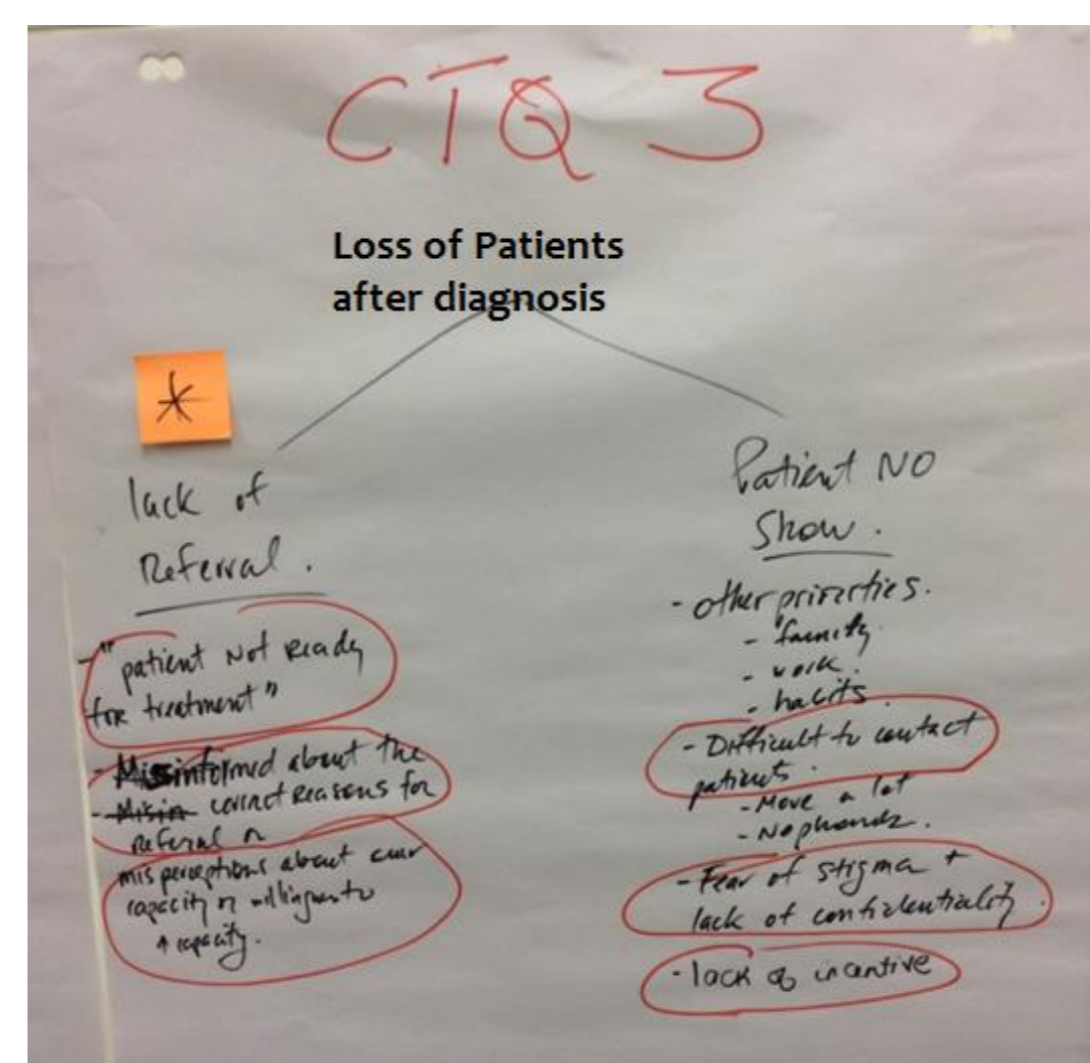
**Value Stream Mapping (VSM):** Analyzing the 'current state' of the clinical process to propose a desired 'future state' required a detailed evaluation of each step and or element of the process from start to finish. We began with HCV screening and evaluated each component of the care system right through post treatment and follow-up.



Example of part of Value Stream Map

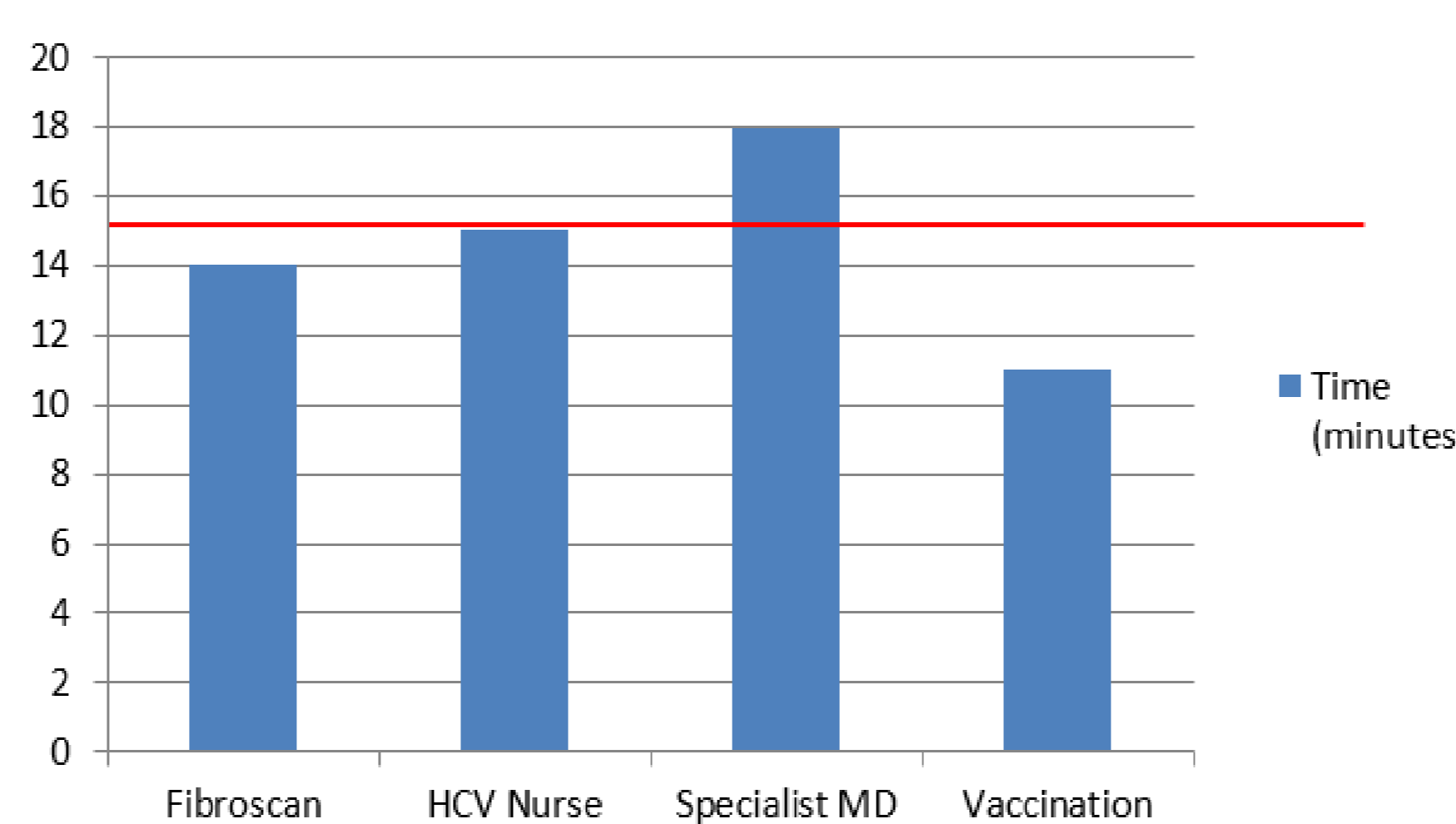
### Critical to Quality Analysis (CTQ):

Beginning with an observation of the general problem or deficiency in the system, a CTQ tree was used to define qualifiers for loss of patients after diagnosis. Then for each of these qualifiers the tree identifies quantifiable elements which can impact the greater problem. This allowed the development and implementation of focused solutions which favourably improved identified deficiencies in care delivery.



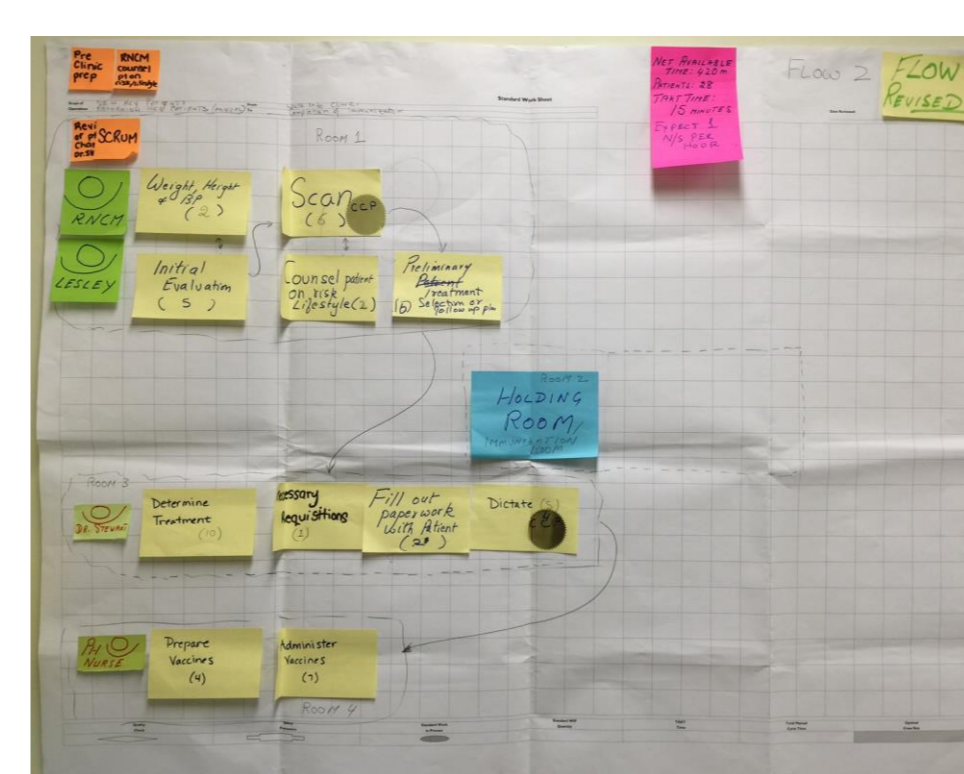
Critical to Quality Analysis

**Work Re-balancing:** A 'Takt time' is determined by observing patients and their interaction through the system. A Takt is determined by the number of personnel involved over the time required to complete each specific task during the complete clinical interaction. Determining the 'Takt time' for each segment helps redefine the appropriate order of patient care components and also in sum, determined the time required for one entire cycle (patient being seen at each station).



Takt time Vs process cycle times for new Hep C Patients

**Lean Standard Work:** Knowing the Takt time and the process cycle time, the most efficient order of components or 'stations' are established by 'try-storming' various combinations. In our evaluation, we determined that patients should first be fibroscanned and then they could see either the HCV nurse or the physician, whomever was available. Lastly, the patient would receive necessary vaccinations. This minimized patient's need to wait and allowed the HCV nurse and physician to focus on education and treatment selection.



Lean Standard Work

### Targets, interventions and proposed mechanisms to decrease patients lost to follow up

#### 1. Health System :

•Increase the level of patients screened from current level of 238 in the last two years to 200+ per year.

**Mechanism:** Educated GPs about age cohort + risk factor screening and improved community awareness through planned Liver Health Event.

•Increase referrals from 46% to 100% of those who are RNA confirmed.

**Mechanism:** GPs implement policy of referring all HCV RNA + cases to specialist team.

•Reduce % of patients diagnosed but not engaged from 74% to target of 25%.

**Mechanism:** All individuals with HCV AB+ test connected to Registered Nurse Case Manager (RNCM) who is trained to be a local HCV specialist nurse.

•Conducting support groups and spreading awareness by those cured of HCV improves engagement.

#### 2. Clinician:

• Hep C Specialist Clinic: Increase the number of patients seen in one day from 14 people per clinic day to 28 people per clinic day .

**Mechanism:** Create clinical stations so patients can receive vaccinations, be fibroscanned and undergo physician and nursing evaluation and education. The model is flexible and maximizes the nurses' and physicians' time spent on education and correct regimen selection.

• RN Case Manager (RNCM): Reduce patient loss from 74% to potentially 25%, and reduce risk of transmission.

**Mechanism:** RNCM patient engagement from time of initial diagnosis.

Simplification of lab testing protocol that can allow for only single lab visit prior to treatment initiation.

#### 3. Patient:

•Better health outcomes.

**Mechanism:** better engagement leading to more education, earlier treatment and higher likelihood of cure.

•Reduce risk of transmission.

**Mechanism:** Patients are educated about harm reduction, treatment and prevention of HCV.

•Reduce no-show percentage ranging from 13% to 52%.

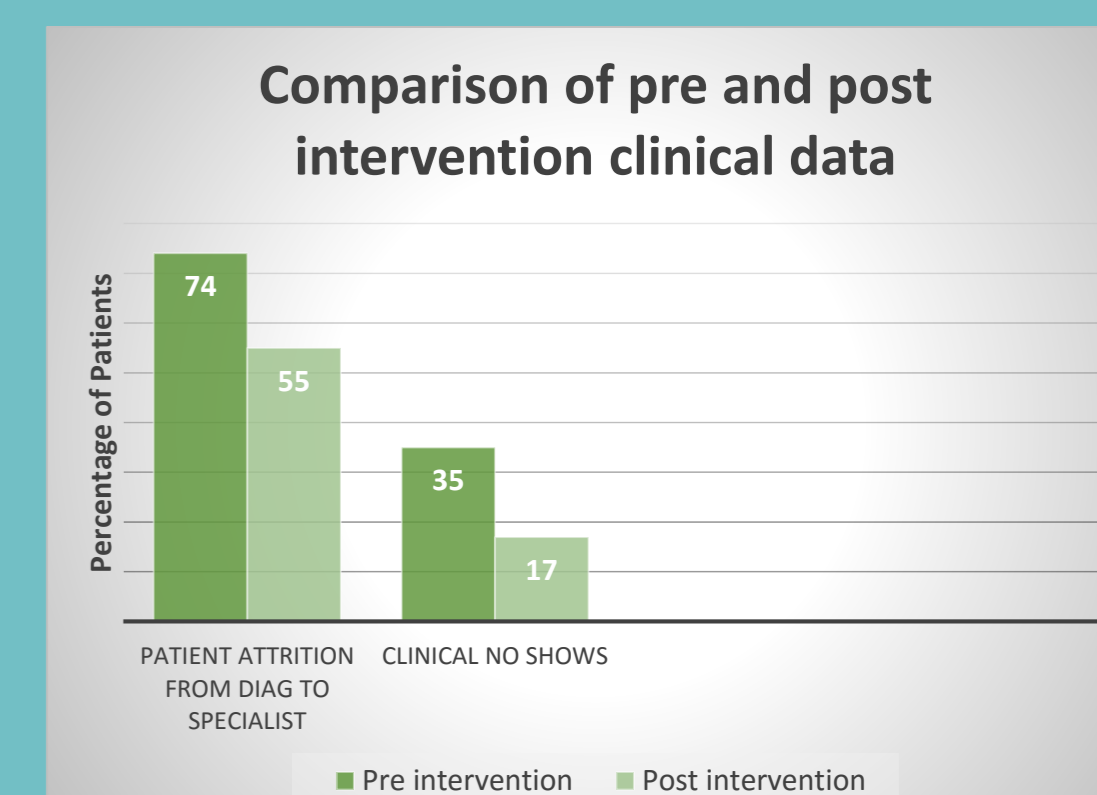
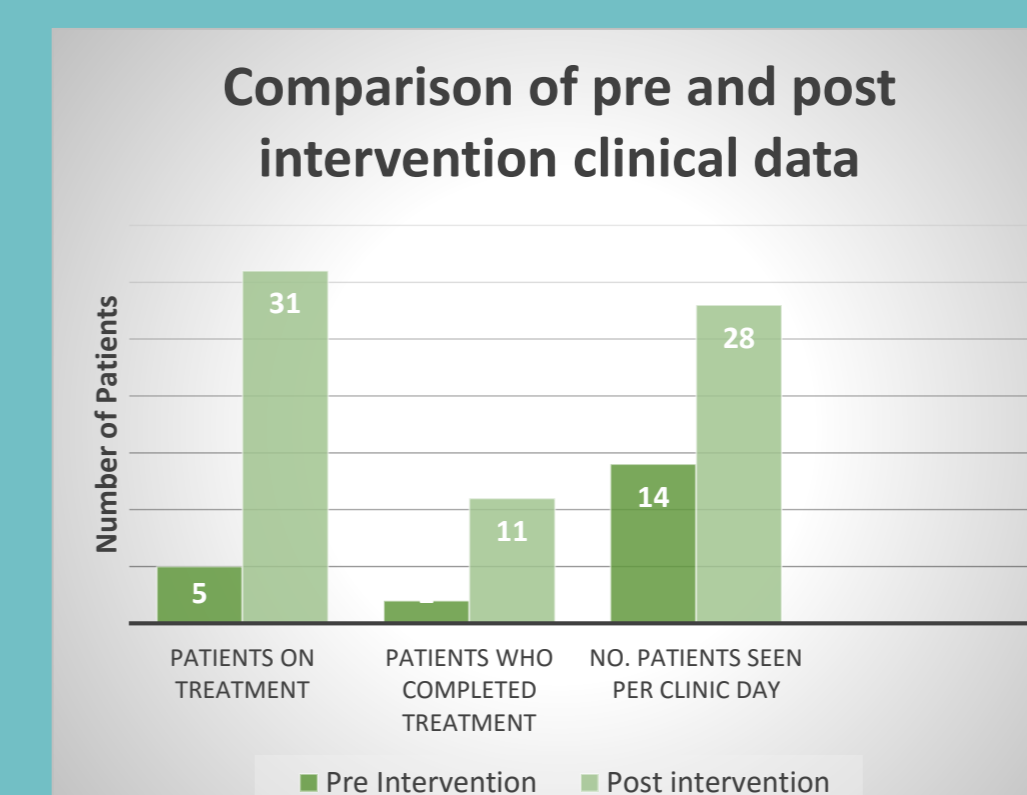
**Mechanism:** engagement with RNCM and through attendance at support group, attendance is improved as patients become invested in their care.

## Results

At the conclusion of this four month project, considerable improvements were demonstrated.

### Screening:

•GPs in La Ronge have adopted age cohort screening in addition to risk factor based screening.



1. Patients on treatment increased from 5 to 31 during the four month project
2. 11 Patients have completed treatment
3. Specialist clinic productivity increased from 14 to 28 clients daily
4. Patient no shows reduced from 35% to 17%
5. Patient attrition from diagnosis to specialist appointment decreased from 74% to 55% within 4 months
6. Patient awareness of a cure for HCV and it's availability in La Ronge, increased
7. The introduction of a program of RN outreach, streamlined assessment with specialist consultation resulted in improved follow up and uptake of HCV treatment

## CONCLUSIONS

HCV education, assessment and treatment are available in urban areas within a variety of models of care. HCV patients, living in rural areas, may be referred to specialists in the nearest cities. These referrals involve advance planning, arrangements coordinated through the First Nations' bands and several hours spent in medical taxis. Often referrals are postponed, appointments are not attended by patients or not pursued by GPs or clinic staff, who anticipate the complexities of patient follow up. Specialist clinics conducted where patients live can eliminate these barriers. The ability to efficiently engage, educate, assess and bring treatment to HCV patients within their communities, has increased the number of patients treated and cured. Because specialist 2 day clinics are conducted only 4x a year, this project sought to maximize the number of patients assessed and transfer knowledge to the local clinicians to provide continuity of care and follow-up.

This model is currently being adopted by two communities within the Prairie North Health Region.