

REMOTE CHEMOTHERAPY DRUG DELIVERY SERVICE MODEL

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BACKGROUND

Release of USP 797, USP 800, and NAPRA clean room and hazardous drug preparation standards in recent years has resulted in more stringent requirements for sterile drug preparation facilities. As a result, AHS Pharmacy determined it was not feasible to upgrade all existing facilities and a decision was made to move to a more centralized sterile drug preparation and distribution system.

In September 2015, discussions and work began to plan providing the remote chemotherapy drug mixing service out of the Cross Cancer Institute (CCI) pharmacy in Edmonton to support the treatment of patients at the Barrhead Community Cancer Centre (CCC).

OBJECTIVE

To provide a chemotherapy mixing service out of a Tertiary Cancer Centre pharmacy for delivery in a rural Community Cancer Centre by the target date of April 1, 2016.

The goal was to continue treatment at the Barrhead CCC for 100% of the planned patient treatments, while maintaining the following key planning principles:

- Continue to be patient centered with minimal impact to patient care
- Maintain safety and quality
- Continue to provide cancer services as close to home as possible
- Optimize processes to deliver the maximum volume of chemotherapy protocols
- Engage key stakeholders in the planning process

DESIGN

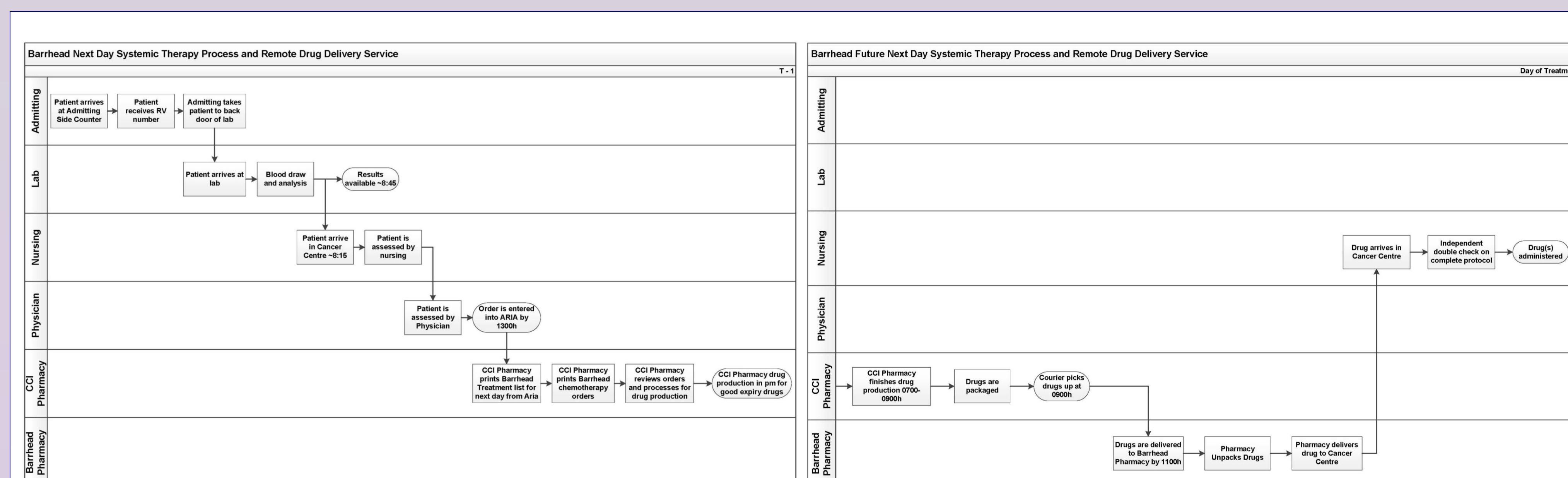
Two planning groups were established:

1. CancerControl Alberta (CCA) Planning Group consisted of pharmacy and nursing leads from Community Oncology (CO) and the CCI plus front line staff.
2. Barrhead CCC Planning Group consisted of pharmacy and nursing leads from CO and administrators from the Barrhead CCC.

Weekly planning meetings were held over a 6-month period to establish the work plan.

A planning checklist was created and the processes for implementation were established including:

- Review of current workflow processes
- Identification of changes to workflow processes and schedules that would be required at the clinic and at the remote dispensing site
- Review of protocols and expiry of drugs for feasibility of remote mixing
- Identification of logistics for delivery options:
 - expiry of drugs
 - appropriate temperature controls for shipping prepared chemotherapy
- Creation of a communication plan for implementation including a Frequently Asked Questions (FAQ) document
- Creation of an evaluation survey to collect feedback on the new program



Drug Expiry Information for Remote Service Drug Delivery

Drugs cannot be prepared remotely
 drugs have shorter expiry and preparation time must be considered
 drugs may require consideration of preparation time

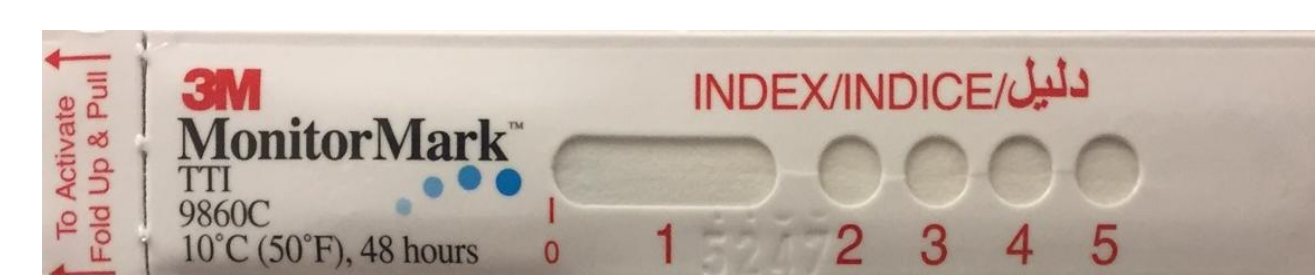
Drug	Expiry information	Notes
Adolesleukin (Interleukin-2, IL-2) intravesically	28h RT or 48h F	
Abemuzumab	8h RT or F	would need to prepare morning of admin
Arsenic Trioxide	concentration dependent: 24-28h RT or 48-72h F	
Asparaginase	use immediate	could not be prepared remotely
Azacioldine	22h F (when record with cold SWI) *	would need to prepare late in day for early following day admin

Reference: Canadian Journal of Hospital Pharmacy, Vol 65, Nov. 5, 2012

Frequently Asked Questions (FAQ)

Question	Answer
Who do I call if I have any questions related to a cancer patient and their treatment?	Nursing staff should call the Alberta Cancer Line (ACL) at 1-888-432-8885 with all questions. This helps to centralize the calls and streamline the process for nursing staff. The ACL staff will determine the appropriate individual(s) who will need to respond to the question and will keep track of the types of questions so that processes can be reviewed as required for improvements.
When will patients have their lab work completed?	Patients will have lab work completed at the Barrhead hospital on the morning of their assessment appointment.
When will patient assessments be completed by the Barrhead physicians?	Patients will be assessed for readiness for chemotherapy administration on the morning prior to the chemotherapy administration appointment date, and chemotherapy orders will be entered into ARIA.
What time does the Barrhead physicians need to have ordered entered into ARIA by?	1300h the day prior to the day the patient is to receive chemotherapy.
How does the Cross Cancer Institute (CCI) pharmacy receive the orders for the chemotherapy patients treated in Barrhead?	CCI pharmacy will print the appointment list for the Barrhead clinic at 1300h the day prior, to identify patients booked in for chemotherapy the following day. CCI pharmacy will print the orders from ARIA for the patients on the appointment list.
Can I add a patient to the chemotherapy appointment list for the following day if it is after 1pm the day prior?	No. CCI pharmacy prints the appointment list at 1300h the day prior for the following day. Only orders for patients on this list will be printed from ARIA and mixed for delivery the following morning.

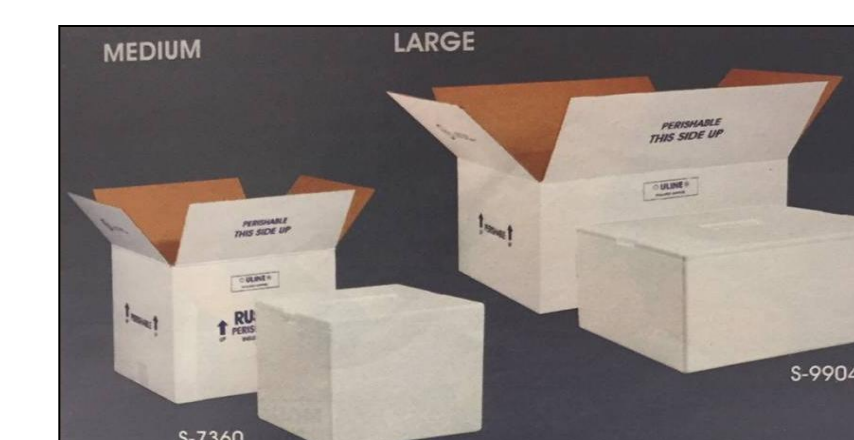
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Packaging

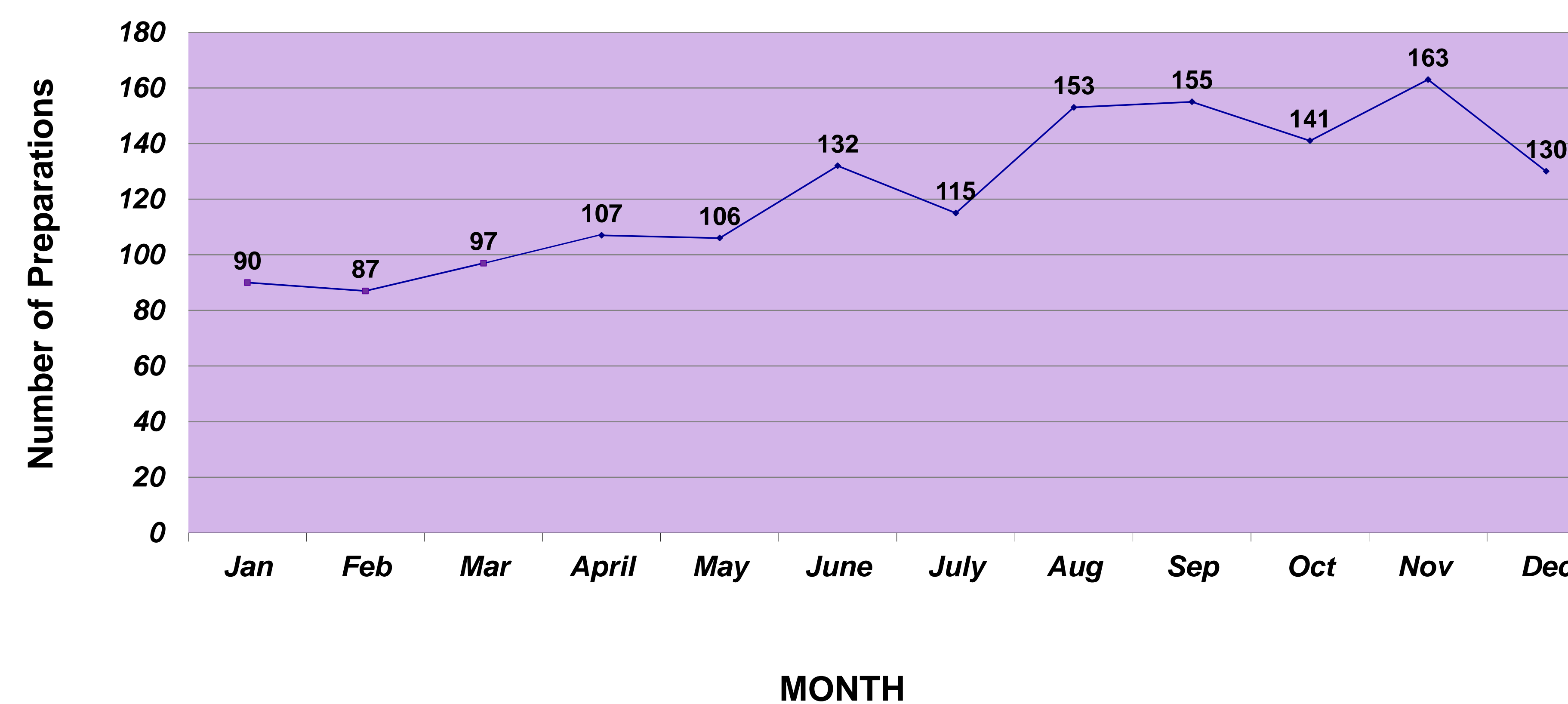


Shipping containers



RESULTS

2016 BARRHEAD COMMUNITY CANCER CENTRE CHEMOTHERAPY PREPARATIONS



← Pre Implementation

→ Post Implementation

Evaluation Survey

Twenty-seven individuals were requested to complete the survey and 8 survey responses were received for an approximate response rate of 30%.

1. Please indicate below the area that best describes your work setting:

	Response Total	Response Percent	Points	Avg
Barrhead Cancer Clinic Staff	2	25%	n/a	n/a
Barrhead Pharmacy Staff	0	0%	n/a	n/a
Barrhead / North Zone Leader	0	0%	n/a	n/a
CancerControl Tertiary Site Pharmacy Staff	1	12%	n/a	n/a
CancerControl Tertiary Site Clinic Staff	0	0%	n/a	n/a
Community Oncology Staff	2	25%	n/a	n/a
Physician	1	12%	n/a	n/a
Other (leadership, director clinical operations)	2	25%	n/a	n/a
Total Respondents (For this Question)	8			

2. Rank the statements below on the following scale: 0 = not applicable / unsure 1 = strongly disagree 2 = disagree 3 = neutral 4 = agree 5 = strongly agree

	0	1	2	3	4	5	Response Total	Response Average
I was well informed regarding the change in drug delivery service model in advance of the change being implemented.	0%	0%	12.5%	0%	37.5%	50%	8	4.25
I had sufficient opportunity to be involved in the planning for the change in drug delivery service model.	0%	0%	12.5%	0%	25%	62.5%	8	4.38
The change in drug delivery service model has not significantly impacted the workload for myself and my team.	12.5%	0%	0%	37.5%	25%	25%	8	3.38
The quality of the drug products received with the new drug delivery service model has remained the same or improved.	0%	0%	0%	25%	25%	50%	8	4.25
The timeliness of receiving the drug products received with the new drug delivery service model has remained the same or improved (in relation to the patient's scheduled appointment time).	12.5%	0%	0%	50%	0%	37.5%	8	3.38
I know who to contact if questions arise about a drug product or a patient's order.	0%	0%	0%	0%	37.5%	62.5%	8	4.62
The change in drug delivery service model has resulted in similar or improved patient care services at the Barrhead CCC.	0%	0%	37.5%	12.5%	25%	25%	8	3.38
Total Respondents (For this Question)							8	

A few areas of concern were identified in the survey:

- Lack of flexibility resulting from removal of local pharmacy involvement
- The need to strictly enforce the next day chemo model
- The impact of winter road conditions for patients having to travel to the centre twice for appointments

DISCUSSIONS/CONCLUSION

Survey results indicate positive responses related to involvement of stakeholders in planning prior to and the quality of service following implementation.

Concerns identified in the survey continue to be monitored and addressed as they arise for the individual patients and situations.

The number of referrals to the CCC remained the same or increased after implementation achieving the goal to continue planned patient treatments at the Barrhead CCC.

Overall, the results indicate the implementation of the remote service delivery model was successful, was completed by the target date and maintained the key planning principles.

Based on these results further planning is under way to implement this model at additional CCC's.

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