

Ironing out the problem of outpatient infusion wait times: look for process improvements first

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Abstract

Rationale, aims and objectives: Iron sucrose remains a top expenditure in Fraser Health Authority. Audit data from an iron sucrose standardized order set (SSO) pilot coupled with the addition of iron isomaltoside to formulary resulted in the implementation of a regional SSO. **Survey objectives** were to clarify how iron infusion referrals are triaged, determine iron infusion wait times and identify what other services can impact wait times prior to regional SSO implementation. **Method:** Information was collected from a web-based survey sent to outpatient unit staff at all 11 sites within the health authority. **Results:** Survey response rate was 73%. Urgent and non-urgent referral definitions varied and included laboratory parameters, prescriber specification, consideration of procedure dates and evidence of symptoms. Urgent referrals wait times are usually within the same week and non urgent wait times varied from same week booking to up to 3 months. Outpatient units provide a multitude of services that require urgent appointment times that may require scheduling ahead of non-urgent iron infusion referrals. Outpatient clinics deal with multiple other clinical reasons other than iron infusions which contribute complicate the triage and booking process and can lead to long wait times. Wait time reduction could be the result of utilizing a SSO that displayed all the information required by clinic staff and streamlined the booking process rather than the addition of iron isomaltoside to formulary. **Conclusions:** With the implementation of a regional SSO the iron infusion referral process may be simplified, thereby shortening appointment wait times. It is recommended that comparable information regarding iron infusion wait times be collected after these changes in practice.

Introduction

Iron sucrose remains a top expenditure in Fraser Health Authority (FHA), a large health authority in Canada. In order to ensure the safe and appropriate use of iron sucrose prescriptions, a standardized order set (SSO) was pilot tested at three FHA sites including Burnaby Hospital (BH), Eagle Ridge Hospital (ERH) and Mission Memorial Hospital (MMH) in November 2020. While improvement in appropriate iron sucrose usage was not demonstrated in the brief audit period, the SSO led to unexpected and substantial reduction in wait times at one hospital (ERH). Since that time, the SSO has been updated based on the aforementioned audit and because of the addition of iron isomaltoside to formulary. This new SSO intended for both inpatients and outpatients was implemented for regional use on September 1, 2021 and contains both iron sucrose and iron isomaltoside. The belief was that iron isomaltoside would lead to a reduced wait times because fewer appointments are required. In FHA, 50-70 % of intravenous iron is administered in the outpatient setting. Iron isomaltoside requires one or two outpatient appointments whereas iron sucrose generally requires three. We questioned why ERH had a reduction in wait times prior to the addition of iron isomaltoside and hypothesized that it had something to do with the development and pilot testing of a SSO.

This survey was intended to understand how iron infusion referrals are triaged, determine outpatient iron infusion wait times and identify what other services can impact iron infusion wait times in FHA hospital outpatient clinics. This would help clarify if reduction in wait times occurred because of the SSO.

Methods

A Qualtrics survey consisting of nine questions was sent to all FHA sites that provided outpatient iron therapy: Abbotsford Regional Hospital and Cancer Center (ARHCC), BH, Chilliwack General Hospital (CGH), Delta Hospital (DH), ERH, Fraser Canyon Hospital (FCC), Jim Pattison Outpatient Care Center and Surgical Center (JPOCSC), Langley Memorial Hospital (LMH), MMH, Peach Arch Hospital (PAH), Royal Columbian Hospital (RCH) and Ridge Meadows Hospital (RMH). These hospitals range in size from small community hospitals to large tertiary care centers. Survey recipients were registered nurses designated as the unit Patient Care Coordinator (PCC). The manager, unit clerk or a bedside nurse was delegated to complete the survey if a PCC was not available. Information regarding factors that are considered in triaging iron referrals, wait time duration and other services that may influence iron infusion wait times was collected. See Appendix 1 for full details.

Results

The survey was sent to thirteen people at eleven sites (RCH was omitted after two unsuccessful attempts to obtain a contact name). There were 12 responses, however the response from MMH stated only the site name and no other answers therefore it was omitted. Of the eleven complete responses from eight different hospitals (response rate of 73%), there were three sites with two respondents. The remaining six responses were from six different hospitals. No responses were received from FCC and RMH.

The definitions of an urgent referral varied from site to site (Table 1). Some factors in assigning urgency to a referral include a hemoglobin value, prescriber assigning an urgent status to the prescription, an upcoming procedure or delivery date, a ferritin value or evidence of symptoms of iron deficiency or anemia. Hemoglobin threshold values varied from 80 to 100 g/L as a definition of an urgent referral.

Non-urgent referrals were defined based on the hemoglobin value at three sites, with one site stating a value of greater than 90 g/L. If a prescriber stated a referral was non-urgent and the ferritin levels were additional factors; the ferritin level cut-off for a non-urgent referral was not specified by the survey respondent. Two sites stated that there is no triage process so infusions are administered on a first come, first served basis. Missing information on a referral automatically designates a referral as non-urgent at one site.

If a referral was considered urgent, an infusion appointment is booked within the same week or at the very most within 1-2 weeks in FHA. Non urgent wait times varied from same week booking to up to 3 months after the referral was received. Most sites stated that these were typical wait times with the exception of ARHCC and ERH where there was usually a longer wait time (Table 1). ERH noted a significant reduction in iron infusion wait times from three months to same week booking; it is important to note is that this wait time reduction coincides with the implementation of the pilot SSO.

Factors contributing to longer wait times for iron infusion appointments included missing referral information, limited patient availability, and limited appointment availability (only a particular designated time of day or designated day of the week for iron infusions) and lack of human resources to triage referrals. In addition, if the patient's referring physician is not available by phone due to holidays or outside of office hours, the patient's appointment is delayed. Since most outpatient units have a policy that the referring physician is the attending physician, they must be available by phone in case there is an adverse reaction.

Aside from iron infusions, respondents stated that their outpatient units provide a multitude of services that require urgent appointment times that may require scheduling ahead of non-urgent iron infusion referrals (Appendix 2). Anticoagulation Program, Community IV Program, minor procedure, minor procedure recovery, bloodwork from central venous catheters, and phlebotomy patients receive care in these same outpatient units. In addition, patients rely on timely treatment with intravenous products such as blood, electrolyte infusions, hydration, immune globulin G, and medications for non-oncological indications at these units.

Discussion

What hasn't been considered is most outpatient units treat patients with a multitude of conditions that

require consideration for urgent appointments for services ahead of iron infusions. Some iron infusion patients require appointments urgently while others do not. To further complicate matters, some hospitals do not have a designated unit for outpatient care and these services are provided in busy emergency departments.

The survey results helped explain the unexpected result of decreased wait times with the implementation of an SSO even before the addition of iron isomaltoside. What we learned was that clinic staff schedule appointments based on urgency, which is determined based on information available in referrals. Iron referrals are triaged by clinic staff based on multiple pages of information provided by the prescriber; a complete prescription, laboratory data, consultation reports on underlying medical conditions, consent for health care, allergy documentation, as well as prescriber and patient contact information is required. Clinic staff have to scour these lengthy referral packages for the relevant information; any missing information can result in a delay of treatment. It is possible that the first iteration of the SSO provided clinical staff with all the information they needed for triage and thereby streamlining the booking process. This is likely what led to reduced wait times at ERH. It is therefore possible the latest iteration of regional SSO will also lead to reduced wait times for the same reasons. Having pertinent information readily available on the SSO may have helped improve work flow. In other words, an improvement in the process reduced wait times and had nothing to do with the addition of a costly new formulation of IV iron.

The addition of iron isomaltoside to formulary may not have a major impact on overall clinic wait times since iron wait times are tied to how busy the hospital is, not how many other iron infusion referrals there may be. For example, a non-urgent outpatient iron infusion referral patient may have a wait time based on patients who are requiring urgent blood transfusions, phlebotomies, antibiotics, or minor procedure recovery.

Prior to addition of medications to formulary in the future, it may be valuable to consider if process improvements (e.g. carefully designed SSOs) would help with wait times.

Conclusions

The survey provided insight into the factors that lead to wait times in outpatient clinics. Specific insight was gained on factors related to outpatient iron infusions. Wait time reduction could likely be the result of utilizing a SSO displaying information in a convenient manner rather than the addition of an expensive drug, iron isomaltoside, to formulary. We recommend that other jurisdictions consider process improvements first, as an important way to improve wait times in ambulatory care clinics.

References

None

Conflict of Interest Statements

Tina Sekhon: none

Aaron M Tejani: none

Table 1: Characterization of iron infusion wait times

	ARHCC	BH (2)	CGH	DH (2)	ERH	JPOCSC	LMH (2)	PAH
Definition of urgent infusion								
Based on Hgb value*	Yes, <100	Yes, <90	Yes	NR	NR	NR	Yes, <80	NR

	ARHCC	BH (2)	CGH	DH (2)	ERH	JPOCSC	LMH (2)	PAH
Prescriber states urgent	Yes	Yes	Yes	NR	NR	Yes	Yes	NR
Upcoming procedure date	Yes	Yes	Yes	NR	NR	NR	Yes	Yes
No triage, first come first served	NR	NR	NR	Yes	NR	NR	NR	Yes
Other	Pre-travel	Pregnant Symptomatic	NR	NR	Ferr <1 Symp-tomatic GI bleed	NR	Ferr <10	NR
Wait time for an urgent infusion	Same week	Same week	1-2 weeks	1-2 weeks	Same week	Same week	Same week 1-2 weeks	Same w
Definition of non-urgent infusion								
Based on Hgb value*	Yes	Yes, >90	NR	NR	Yes	NR	NR	NR
Prescriber states non-urgent	Yes	Yes	NR	NR	NR	Yes	Yes	NR
Upcoming procedure date	NR	NR	NR	NR	NR	NR	NR	NR
No triage, first come first served	NR	NR	NR	Yes	NR	NR	NR	NR
Other	NR	NR	NR	NR	Ferr level	NR	Missing information	NR
Wait time for non-urgent infusion	6-8 weeks	2-4 weeks	3 months	2-4 weeks	Same week	4-6 weeks	1-2 weeks 2-4 weeks	2-4 wee

	ARHCC	BH (2)	CGH	DH (2)	ERH	JPOCSC	LMH (2)	PAH
Are current wait times typical	No, up to 4 months	Yes	Yes	Yes	No, was 2-3 months	Yes	Yes No, within 1 month	Yes
Other ser-vices im-pacting wait time***	Yes	Yes	Yes	Yes	NR	Yes	Yes	Yes

NR not reported

*Hemoglobin (Hgb) values expressed in g/L and specified when reported

**Ferritin (Ferr) values expressed in mcg/L when reported

***See Appendix 1 for details