Introducing the Peripheral IV (PIV) Documentation Form:

Introductory statement:
Peripheral intravenous cannulation is a common procedure carried out to allow rapid and accurate administration of medication and fluid (Endacott et al, 2009). There are risks associated with this placement, the most common being phlebitis. Phlebitis is caused by inflammation to the vein at a cannula access site with a mechanical, chemical or infective cause. Excellent technique including site and device choice and good infection control techniques are paramount in preventing this problem (Higginson & Parry, 2011).

This paper will discuss the development of the Peripheral Intravenous Documentation form at a large District Health Board hospital providing care for a large geographical region.

Background
Two years ago I attended the IVNNZ conference in Rotorua. I was particularly impressed with the presentation by Andrew Jackson on the Visual Infusion Phlebitis Scoring system (VIP) as well as the presentation on IV complications / infections. When I returned to work I set about presenting this information to the orthopaedic ward nurses. I developed a poster to challenge them regarding IV safety and saving lines – (see appendix A). I gave education sessions on the VIP score and the risks of infection and encouraged nurses to use this as their documentation. I put up little posters on every available shelf area where IV supplies were held to encourage 15 second scrub the hub.

| When seconds count – we count on you |
| Scrub the Hub 15 seconds – then allow to dry |

The Visual Infusion Phlebitis Score (VIP) is a tool recommended by the Royal College of Nursing (and subsequently the Intravenous Nurses of NZ - IVNNZ). It was first developed by Jackson in 1998. This scoring system is now widely used as a valid and reliable method of determining when an IV line should be removed (Gallant & Schultz, 2006). Cleaning with 70% Alcohol (and 2% Chlorhexidine, at WDHB) for 15 seconds using a scrubbing action has been shown to reduce bacterial contamination of the hub of the IV line. The term “scrub the hub” has been coined to remind staff to do this (Lockman et al, 2011 and Kaler, 2007).
CLAB initiative and decision to audit

The CLAB initiative was rolled out at this hospital in 2013, with education around VIP scoring for central lines included. (However, at the time of the audit only 3 areas had received their CLAB education). It was decided to audit all intravenous lines with the aim of ascertaining the number of IV lines on a given day and to identify any breaches of policy regarding the management of these lines. All IV lines were included in the audit, central and peripheral. This audit became a starting point for the development of the PIV Maintenance form.

Audit

On the 15th of May 2012 our hospital performed a hospital wide Intravenous Line (IV) Audit. The line was observed and documentation was checked for any form of phlebitis scoring / noting. An audit tool was developed with a guide to the completion of the tool. The auditors were briefed prior to commencement of the audit. All patients were advised of the audit and verbal consent was gained.

Results. (Please NB: This is not a complete review of the results of this audit)

Observation of the line and documentation were the two areas of focus for the audit. It was found that 4 patients were duplicated, possibly due to patient movement, causing some unreliability with the same line having two different phlebitis scores.

390 lines were observed, 385 patients – due to some having multiple lines.

<table>
<thead>
<tr>
<th>Observation</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wristband</td>
<td>Line purpose</td>
</tr>
<tr>
<td>Line type</td>
<td>Duration of line days / hours</td>
</tr>
<tr>
<td>Line site</td>
<td>Date of insertion recorded</td>
</tr>
<tr>
<td>Dressing date</td>
<td>CLAB form in notes</td>
</tr>
<tr>
<td>Phlebitis score</td>
<td>High risk noted</td>
</tr>
<tr>
<td>Needleless device insitu</td>
<td>Documented phlebitis score</td>
</tr>
<tr>
<td>Dressing of line</td>
<td></td>
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</tbody>
</table>
Wristband – All 385 patients had a wrist band, 376 were correct. 96% compliant

Line type and site – Lines equalled 390. PIV 362, 17 CVC’s.

Observed VIP score – Every line that was observed in the audit was graded and given a VIP score. Of the 10 lines scoring 2/3, 9 were PIV and 1 was a PICC. All had been insitu for between 1-4 days.

Needleless devices – 51 lines were observed to have no needleless device in use.

Dressing – 375 lines were dressed as per policy. 6 had CHG dressing insitu. 7 were dressed with “other dressing”

Line purpose – The most common reason for line use was administration of IV medication. 26 lines had no documented reason for being insitu, thereby being an unnecessary risk of infection for patients.

Date of insertion - There was a 72% compliancy which ultimately affects the accuracy of the duration of day data as duration could only be recorded if the date of insertion was recorded.

Duration of line days - 326 of the peripheral lines had duration of between 1-4 days. 90% were compliant.

CLAB form – It was only expected to see this form in the 3 areas that had been educated. Of the CVCs in these wards 1 line did not have a CLAB form.

Dressing dated – 75% compliant.

Documentation of VIP score or written record of state of line – 201 lines did not have a documented VIP score or written record of state of line. 47% compliant.

It is WDHB policy as well as being widely documented that all patients with an IV access device should have the access site checked / observed a minimum of once per shift for signs of phlebitis (LaRue & Peterson, 2011 and gallant & Schultz, 2006)

Discussion

The audit highlighted the need for several areas for focus.

1. Date and type of dressing
2. Inconsistent use of needleless devices
3. Lack of documentation of date of insertion
4. Documentation of VIP score / state of line inconsistent
5. Management of lines that are no longer required - (Pallin (2013) noted that half of the IV lines that were placed in a large Australian Hospital Emergency Department were never used to infuse fluids or give medications).
6. Identification for the full CLAB rollout.
Limitations

The audit was done on one day and may not reflect practice at other times. Accessing documentation provided a challenge.

Some of the data was documented by one auditor as NA which skewed the data in some areas.

(Many thanks to the author of this report for the write up of the results of this audit).

Development of the form

From the outcomes and recommendations of this audit I was keen to develop a form that would encompass all of the requirements for documentation of a PIV line. The CLAB form was proving to be valuable in the improvement of documentation and clinical practice for Central Lines, so developing a similar form for PIV seemed like the way to go.

My first attempt at developing the PIV Maintenance form was a scrap of paper with ideas blasted all over it (AKA mind mapping!). I arranged a meeting with my Head of Department for Surgical and Ambulatory and also the CNM ICU, who had been a lead in the CLAB initiative at this hospital. We rearranged some of the ideas on the form and put it into a table format. The beginnings of the PIV Maintenance form were taking shape. The form was then sent for review to the Associate Director of Nursing, who added further comment. Finally the form was at a stage where it was decided to trial it on 2 wards. One medical and one orthopaedic ward. I spent a week doing in-service education on the reason behind the development of the form. It was decided that the ward clerks would be asked to copy and save every PIV form when the patient was discharged and the notes were being stacked for return to clinical records. As the form was very much a part of the patients’ clinical record we couldn’t remove the form from the notes. This method meant that we could still review the form for compliance and completion. As I had already instigated the use of the VIP score for all lines into the orthopaedic ward I had concentrated my education of the form to the medical ward and left the CNM of the orthopaedic ward to encourage the use of the form on her ward. In the in-service I showed the nurses the form and stressed that it was one form per cannula. Documentation was to be completed a minimum of once per shift. The type and gauge of cannula was to be documented as well as the location. If the line was in the antecubital fossa they were to consider resiting. The date and time of insertion with a name and signature if they were inserting was to be documented. They were to document the indication for use.
Other fields were: whether the line was required, needleless device insitu, dressing intact, VIP score, line flushed and to sign. One very important field that was noted by our legal representative was that “hours since insertion” was to be documented at each shift. The nurse was to sign on removal with a date and time.

The nurses were asked to complete the form (Appendix B) in the patients’ notes and to give constructive feedback as to any improvements of the form.

We had decided to collect the forms for 4 weeks. I attended the wards frequently to ask for any interim feedback. After the 4 weeks, Liz and I met to review the forms from both the wards. The feedback from the nurses was that it was a very useful form and they could definitely see the benefits especially when it came to auditing. They noted the challenges of documenting the time and date of insertion when the form had not been started in the department where the insertion had taken place. This was a challenge that the original audit had also picked up and a strong reason for developing the form to be used hospital wide. The forms were mostly completed except for the difficulty in accuracy when the original date and time of insertion is hard to find – therefore, hours since insertion is not going to be accurate. The form was seen to be a one stop shop for documentation of everything to do with the patients’ cannula. A suggestion for improvement was also to have the VIP score on the reverse of the form.

Where to now? Collaboration is the key!

The current state of the project is waiting for final sign off to go with hospital wide education and instigation of the form into all clinical areas. All Nurse Educators will be involved in this and the CNM ICU and I will present to the NE group and the Charge Nurse Managers. The CNMs of the 2 wards that assisted in the trial will be important messengers for the project to get to full rollout as they will be able to relate their individual wards responses. It was refreshing to have feedback from nurses that the form was seen as more than “just another form” as the benefits to clinical practice and reducing the risk of infection for the patient were seen to be paramount.

The Emergency Department and the Assessment and Diagnostic Unit will be key players in further rollout as this is obviously where the majority of cannulas are initialised. Having the form correctly commenced in this area will mean that when the patient is transferred to a ward, the initial cannula documentation will have been commenced and only subsequent cannulas inserted on the wards will require new
A further development from being involved in this project is that we are now looking at the feasibility of resiting / changing IV lines only when clinically indicated. Keogh (2012) discusses the research that was published in The Lancet in 2012. Currently the Centre for Disease Control (CDC) state that peripheral IV catheters do not need to be replaced more frequently than 72-96 hours however, new evidence from the National Centre for Research Excellence in Nursing (Queensland) suggests that IV catheters can safely be resited only when clinically indicated. This research supports previous research completed in 2010, described by Dressler (2013). He states that the CDC has rescinded its recommendation. Dressler continues in his discussion to recommend using a clinically indicated approach to replacing of PIV catheters in hospitalised patients thereby avoiding patient discomfort and unnecessary procedures.

WDHB are committed to developing the PIV Maintenance form and embedding the practice of VIP scoring, observing and correct maintenance of Peripheral IV lines. Intravenous line management will continue to be audited as a top priority with improvements to clinical practice leading to decreased risks to our patients.
Reference List


<table>
<thead>
<tr>
<th>Hand Hygiene –</th>
<th>Before and after contact with vascular device and prior to insertion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aseptic Technique –</td>
<td>During catheter insertion and care / maintenance when handling “keyparts”</td>
</tr>
<tr>
<td>Scrub that hub –</td>
<td>15 seconds vigorous scrubbing with 2% chlorhexidine / 70% alcohol whenever you access a line</td>
</tr>
<tr>
<td>Ensure line patency –</td>
<td>Flush all lumens with the required amount of saline / heparinised saline to maintain patency, as per policy</td>
</tr>
<tr>
<td>Stabilise –</td>
<td>Ensure that the line is well secured using recommended IV dressing</td>
</tr>
<tr>
<td>Remove –</td>
<td>At 72/96hrs (as policy) or if VIP - 2 or more or when no longer required</td>
</tr>
<tr>
<td>Needle free access device –</td>
<td>Ensure all lines are accessed by a needle free access device (exceptions are Parenteral Nutrition and PCA)</td>
</tr>
</tbody>
</table>

Use Proximal Lumen for blood sampling on multi-lumen Central Venous Catheters

Keep Patients Free of Infection!

REMEMBER

Shortcuts can result in loss of line, infections – bacteraemia, septicaemia, reduced quality of life and possibly even loss of life