**Dignity Health Initiative to Optimize Inpatient VTE Prevention**

**Call #1 with Hospital X**

**July 23rd, 2012**

Present on the Call or otherwise part of team (I apologize if anything is missed or misspelled—great turnout!)

Tamra O’Bryan, coordinator

XXX, Pharmacy director, team leader

XXX, —senior director, critical care

XXX, pharmacy in postgrad training

XXX,, clinical informatics liaison

XXX,, Clinical RN specialist

XXX,, pharmacy

XXX, nursing, led SCIP VTE efforts

XXX,, a contact with data collection / analysis

Executive contact: XXX,, CNO

Frontline nursing team members, awaiting instruction

*Hospital 1 environment:*

* A community hospital with occasional visiting trainees from (Academic Hospital); XXX licensed beds, XX = critical care, and others OB or NICU, but over XXX medsurg beds.
* Heavy hospitalist penetration, most medicine and many surgery patients
* Cerner EMR for notes/results/orders. Programming largely centralized so not under immediate control of XXX,
* Surgeons requesting a bleeding risk assessment module added to their workflow to permit documentation of contraindications.

*Institutional Support & Safety Culture:*

Overall quite good, with a coordinated push across multiple hospitals well accepted locally. An identified executive contact whose support appears firm although no requests have thus been made by the team. “Just culture” education has been provided.

RN Staff largely supportive of efforts like these, however, showing some fatigue and pushback after many of them and with many measures being collected, feeling monitored in a critical way. The team thinks graphs showing improvement, more praise, and positive reinforcement might improve the acceptance of similar projects. Most MDs engaged, with some outliers. Checklist and team rounds structure present at least in some units, e.g., critical care. Critical care had slightly lower safety attitude scores on the last survey.

*Team:*

A talented group has been assembled and a possible MD champion or two identified: an engaged and enthusiastic surgeon likely to make a great contact for that department, and a pulmonary medicine MD who is engaged. Participation to be confirmed.

*Past Efforts and Baseline Performance*

Hospital X has been tracking prophylaxis rates and outcomes, and recently implemented the VTE ordersets in the computer (4/12). Comprehensive education efforts are planned and the team has considered other providers they need to reach such as nurse practitioners.

Available data look excellent. For the subset of patients (about half) defined by SCIP measures, some 97-98% of patients are receiving adequate prophylaxis. For hospital wide data, the current performance is at 90% prophylaxis. One anecdotal recent report is of 4 out of 15 patients missing prophylaxis.

VTE rates were at 4.2 / 1000 baseline and most recently measured at 1.4 / 1000. Results put Hospital X among the higher performing hospitals in the system. Team members feel that the coding of VTE events is accurate and those occurring within 30 days of discharge are assessed for VTE prophy and referred to peer review, reliably.

*Hierarchy of Reliability:*

Level 3/5, although it sounds like the team’s VTE protocol is reaching most of the patients and they may actually be at level 4. 90% appropriate prophylaxis would be a high rate for a site at level 3.

*Protocols and Order sets:*

VTE prophylaxis ordersets modeled on the SHM model rolled out on 4/12 and reaching most patients. Investigations are planned to see how the admit protocol might not be reaching some patients.

An automated report indicating which patients are receiving prophylaxis and highlighting key lab contraindications is available to the team.

***Assessment:***

Congratulations for all your progress to date. Your current performance and assets like your CPOE, institutional support, engaged team, and data monitoring would be the envy of may hospitals. At this point you are poised for the quality improvement steps that can augment the system in place and push you toward near flawless delivery.

***Suggestions / To Do List***

*Complete the Team:*

Follow through on plans to recruit physician champions, and I would suggest a hospitalist contact as well. I would also consider if there are any stakeholders not yet identified whose interests or expertise are in play. Doctors resist being changed more than change itself; I usually suggest making sure there isn’t, say, neurosurgeons who will worry about prophy recommendations in a special population or orthopedists who would have wanted to be contacted about their preferences. Your protocol is already launched so getting the feedback of end users would be useful.

*Confirm your situation:*

Your performance is already excellent, and if you can monitor rates over time and intervene to move the rate ever higher (a team member mentioned access to SPC charts which are a great way to identify true changes), that is very helpful. As long as the prophylaxis rates are meaningful (i.e., instantaneous rates of actual receipt are better than measures for “any orders” for prophylaxis during an admission) and VTE events are getting captured, or at least a stable if flawed measure is in place, there should be enough data to drive change.

One specific idea: consider looking into the actual utilization of mechanical prophy. Perhaps there is room for improvement of the delivery even if the orders are in.

C*raft an aim statement:*

A specific, time limited, ambitious goal helps everyone focus and applies a little pressure, e.g., X% adequate prophylaxis by Y time, or X% reduction in HA-VTE by Y time

*Learn from defects:*

A key step will be exploring gaps in protocol effectiveness. Sometimes physicians go through it but DC the prophy in a later step; others undercall the risk or overcall the contraindications whether because they disagree with or genuinely misunderstand the protocol. *Lessons from a few spot checks might help inform the important education effort you are planning.*

*MeasureVention:*

Identify some high performing, motivated units with good local safety culture and high baseline prophy rates, and find a volunteer unit to pilot the process. Making this part of existing assessments or automating the report help reduce the burden. MD pushback against calls from nurses is poisonous and the RNs must have meaningful backup if there is any. Joint rounds can actually *reduce* the total work (e.g., pages and calls back and forth) and improve satisfaction. And by leveraging a nurse or pharmacist with enthusiasm or who needs a project, or publicly acknowledging or rewarding the frontline staff, this can actually be an opportunity or honor rather than a task; it also generates useful data for your team automatically. Success can then be spread unit to unit.

*Different Angles:*

Considering your strengths and baseline performance, measurevention should nearly eliminate drug-preventable VTE, but there may be benefit from working with other teams involved with fall safety / mobility or on central line (minimizing duration, optimizing site). Identifying deficits in outpatient duration of therapy in high risk surgery (major ortho, abd-pelvic surgery for cancer) may also help.

Throughout the process, please contact me any time I can be of assistance including between calls and for issues large and small. I enjoy progress reports and learning from the experiences of diverse sites! I can be reached at 619-290-5726 pager and email is ihjenkins@ucsd.edu.

Congrats again for your progress thusfar and thanks for involving me in your project.

Sincerely,



Ian Jenkins, MD

Great work—congrats once again on your HA-VTE rates! Once again, thanks for having me along on your project and call [phone] or email ihjenkins@ucsd.edu with any questions or just an update anytime. It’s helpful to me to know what issues are coming up or what solutions you’re trying so don’t hesitate to contact me.

Sincerely,



Ian Jenkins, MD

**Dignity Health Initiative to Optimize Inpatient VTE Prevention**

**Call #2 with Hospital X**

**May 31st, 2013**

**Present on the Call** or otherwise part of team:

**[Attendees]**

Issues and Questions for today:

* The team has just brainstormed their action items and strategy in a team meeting this morning.
* They are the one facility in region not at stretch (out of 8) and hope to cease being an outlier. We discussed that the final leg of improvement into the high 90s of prophylaxis delivery may not appreciably change the VTE rate IF the high risk patients are already well care for and only relatively low risk patients are added to those on treatment, because their rates are low.
* They note their focus on UE + LE DVT for the Gordon and Betty Moore / No Harm Campaign, different from CMS core measures. Some superficial DVT codes will come out of the measures. This doesn’t affect our improvement efforts significantly; thinking about UE DVT does prompt some consideration of looking into PICC utilization or resuming using heparin flushes.
* Occasionally RNs hold doses, sometimes multiple doses, of prophy, particularly enoxaparin, charting “not appropriate,” e.g. preoperatively despite an order; these are more RN judgment than patient refusals.
* Cardiology is less likely to risk score patients and place on prophy. A liaison to cardiology / cardiac surgery is involved, and the cardiac surgeon will now see the powerplan, several cardiologists will see it too. These were the last MDs who needed to be brought into the fold. It is felt that much of the issue is in documentation of legitimate contraindications, rather than delivery
* Risk assessment is unreliably filled out, although often comments appear in the EMR often the H+P, and they’re hoping documentation compliance will improve in protocol to make measurement easier.

Culture: Other stakeholders and user feedback: some of the MDs feel some patients aren’t in need because they’re always immobile and things aren’t different.

Protocols and ordersets: investigations were planned to see how the orderset might be failing to reach some patients and most of this work was accomplished with cardiology, CT surgery—there are some fallouts with select individuals, not felt to be the biggest issue (?). VTE IS omitted from surgical plans, but a SCIP process is partially meeting this need and is present.

Measurevention report was available but not well implemented at the time of the last call. Currently: report prints on each unit daily. Prints a little late. Changing this is difficult (it prints at 6, rather than 4; does contain all necessary info for intervention. They think there may be opportunity to check on implementation of this. The feeling is that its going well. The measureventionist reminds the RN. Not known if the RN is closing the loop and getting the order from the RN

Hierarchy of reliability: previously was described as 3/5 but achieving better results than would be expected.

Prophylaxis performance: System wide is at 92 and goal is 93% within a few months. Hospital X baseline is 90% with current performance at 91%—that is average data that is pulled down by prior poorer performance. Some data through march from the measureventionist have units varying about 100% for tele, 97-98 for some others, and if these numbers are both valid and reflective of effectiveness broadly, there is little to accomplish at least from the perspective of pharmacologic prophylaxis.

Utilization of mechanical prophy: some data is being collected from measurventionist but the exact answer is unknown. This is potential avenue for improvement.

VTE rates: had improved from 4.2 to 1.4 / 1000 previously, making Hospital X one of the higher performing sites. Their rate has increased to 2.28 / 1000 now for jan to march data—the system is at 4.4. However, they have only had one preventable VTE in memory. VTE will be investigated for other causes, e.g., line safety. Thus, there is frustration that the work hasn’t reduced the event rate.

Aim statement: the current goal is to achieve “perfection,” by both eliminating under prophylaxis and optimizing other strategies.

Summary:

You have a reliable system in place and a lot to be proud of. While some of your % prophy numbers aren’t the best in the system, and previous months may drag down your average, this is in the past and less important than your impressive measurvention numbers in the last few months. While your VTE rate has gone up by about 50%, this needs investigation to be sure it is not a trend and may be just fluctuation since VTE are rare—and recall your event rates are 2.8/4.4 = 63% of the system average. At this point, if your measurvention success is maintained, there may be little else to do with pharmacologic prophylaxis. However, I list all the improvement ideas for moving forward that we brainstormed below, and if after you tackle these and review VTE events none are actually preventable, then it makes sense to focus on the sustainability phase.

To Do Items:

You’ve developed a great list of improvement ideas already:

* Review central line practices (insertion / necessity / removal / maintenance): appropriate for several outcomes, most notably VTE and line infection.
* Continuing efforts to expose all patients to the RAM, as by getting cardiology and CT surgery / other surgery patients exposed to the protocol, is wise, although if your feeling that it will mostly improve documentation of contraindications is correct, we should not expect the VTE rate to change.
* Investigating events where the RN’s have held ordered medication, rather than calling the MD for clarification if they suspect a contraindication
* Investigating the measurvention practices, to be sure that once the measurventionist notifies the RN, the RN calls the MD and the MD is receptive and willing to order prophy where appropriate. These last two steps are often the hardest and require thinking about culture and teamwork, possibly on a unit by unit basis.

Some other possible avenues include:

* Reviewing your VTE cases to see if they are preventable / if prophy of both types ordered when appropriate—ensure recent hospitalization considered if POA
* Investigating utilization of mechanical prophylaxis and or aggressive mobilization efforts as mechanical prophylaxis is usually delivered suboptimally.
* Ensure that extended prophy is received post discharge by patients in need, e.g. ortho patients, intraperitoneal cancer surgery patients. Given their increased risk, finding opportunities for improvement here may offer a good chance of reducing the VTE rate.
* Dialog with those physicians that feel the protocol is too aggressive. They may have useful suggestions or well thought out viewpoints, or potentially need some education. Before the discussion, it would be most helpful to know if patients like the ones in question have suffered VTE events at your facility.

Please contact me any time I can be of assistance including between calls and for issues large and small. I enjoy progress reports and learning from the experiences of diverse sites, and I’d be glad to help if an investigation turns up a difficult to manage barrier of some kind. I can be reached at [phone] and my email is ihjenkins@ucsd.edu.

Congrats again for your progress thusfar and thanks for involving me in your project.

Sincerely,



Ian Jenkins, MD

**Dignity Health Initiative to Optimize Inpatient VTE Prevention**

**Call #3 with Hospital X**

**July 31st, 2013**

**Present on the Call** from Hospital X or otherwise part of team:

**[Attendees]**

New issues and questions for today:

* Community physicians, oncologists hard to recruit—documentation is the bigger issue, they tend to provide good care. This is usually in *relation* to VTE thinking (MDs outside the project are not often motivated to spend time justifying a decision in the chart)
* There are coexisting projects, eg from a CMS HEN, that cover these issues as well. They’re trying to tackle both at once, without duplicating effort

Update from Call #2:

* HOSPITAL X was an outlier program not at stretch 2 months ago; prophy rates not appreciably different.
* RNs were failing to administer some doses. Patty will add this to audits and investigate further. Some education was attempted; followup will be obtained.
* Cardiology performance was lower due to poor orderset penetration and possibly just some inadequate documentation of contraindication. A liaison was arranged. Since: the primary CT surgeon has been coached and the team is expecting numbers to improve. There are few patients; a nurse liaison follows them for glucose and VTE. Documentation is limited and most are just on SCDs not meds.
* Risk assessment was unreliably filled out. This is still hit or miss, although improved. A goal would be to make this a hard stop. They think 60% are using the subplan. Making this hard stop is on the agenda for system change; the RAM is readily available and easy to do
* VTE is omitted from surgical plans, but a SCIP measure in its place. This may be partially complete.
* Measurevention report was inconveniently timed and it wasn’t clear how often RNs were closing the loop by obtaining an order. This still isn’t precisely known; Patty can’t look at the list every day (she does this 3 days a week) so even with the report its not clear how many calls translate into med changes. Each floor has a daily process for doing this but the managers report its happening.
* Utilization of mech prophy was unclear. Since, some spot checks suggest the utilization is good but its not known for sure. When off, patients are frequently out of bed, at least during daytime checks.
* There was a plan to look into central line practices. We reviewed this on call 3 as well and certainly discussing a joint venture with a central line focused team (for appropriateness, prompt removal, and tip position) is a reasonable step.

The team didn’t note any major changes with regard to culture, or ordersets / measurevention apart from the above.

Prophylaxis performance: We reviewed the latest graphs which show some numbers which include 88, 89%, the lowest for the year. Some low numbers are felt to be documentation errors, eg, they have mechanical but its not officially ordered, or rationale fallouts for contraindications as above. The team plans to recalculate the data, counting therapy delivered as adequate with or without an order, and adding some other data that was not incorporated into this tally. VTE 1 and 2 CMS measures ended at 92%, 1% below goal. The team thinks focusing on opportunities with UE DVT might be higher yield than pushing this number up a few percent.

VTE rates had improved from 4.2 to 1.4 / 1000 previously, making HOSPITAL X one of the higher performing sites. Their rate increased from 1.22 for jan to 2.65 and to 3.61 for march, but has since dropped to 2.4-2.5 for the last two months. Ideally this would be looked at over > 5 months and analyzed in an SPC chart to identify meaningful changes.

Aim statement: the prior current goal is to achieve “perfection,” by both eliminating under prophylaxis and optimizing other strategies. Focusing on highest yield strategies—low hanging fruit or high risk patients—is probably going to yield the best reductions in VTE and certainly for less effort.

Summary:

Hospital X’s VTE prevention project is at a similar place as in call #2. There is some room for improvement but much has been accomplished. It would be worth brainstorming how existing processes could be changed fundamentally for lasting effect. For example, if the CPOE RAM can reach all patients ongoing, that would be great. Measurevention seems to be working well at the level of the measurventionist to the nurse, although she isn’t available all days. If each unit could work the measurvention step into their daily work and change the culture around this, and the team can establish MDs are receptive to the calls and changing orders, then Patty could serve as a resource and not be as responsible. Bundling this with other safety processes might give it momentum and extend success beyond the project period.

To Do Items:

Take full credit for your performance by:

* Counting any contraindication (eg, low platelets) if present, whether or not mentioned in the notes in relation to VTE prophylaxis decisions.
* Counting receipt of mechanical prophylaxis whether or not it’s technically ordered. Redundancy in key processes is a great strategy for high reliability, and applied to VTE, a policy for RNs to apply mechanical prophy to patients who appear to need it and have no contraindication is frequently a useful strategy.
* Making sure no fallouts are miscounted, since this seems to be occurring. One example given today were patients on oral anticoagulation who didn’t need additional prophy.

Otherwise, the improvement ideas previously discussed are still good:

* Review central line practices (insertion and positioning / necessity / removal / maintenance) and work with any team focused on lines to jointly advance your goals
* Exposing all patients to the RAM, eg, surgery patients: focus here as may offer lasting, easy compliance but depends on changes to CPOE to ensure the RAM is universal and hardstop.
* Ensuring ordered meds are delivered, as planned
* Measurevention, with focus on ensuring that the loop is being closed. If the measurventionist is reaching the RNs the next link in the chain, the
* Optimize mobilization (is there a separate team working on this?) and performance on mech prophy, starting with spot checks for inadequacy and drilling down to reasons for it
* Check on extended prophylaxis delivery to patients at need (ortho, intraperitoneal cancer surgery)
* Outreach to dissenting MDs as applicable. If there is an MD intermediary, or you can reach them on in their language, that would help. Eg, if oncologists have missed prophy a colleague mentioning the NCCN or ASCO guidelines may carry more weight than referring to a hospital medicine standard.

Please contact me any time I can be of ongoing assistance, for issues large and small. I enjoy progress reports and learning from the experiences of diverse sites, and I’d be glad to help if an investigation turns up a difficult to manage barrier of some kind. I can be reached at [phone] and my email is ihjenkins@ucsd.edu.

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