Peripheral Vascular Intervention (PVI) Discharge Medications

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Background: Patients diagnosed with Peripheral Arterial Disease (PAD) are at a high risk of Heart Attack, Stroke, and Vascular death. Best practice has shown patients with PAD benefit from being placed on an aspirin and/or antiplatelet and statin. Indiana University Health (IUH) wanted to ensure that all eligible PAD patients were being discharged on the recommended dual medications of an aspirin and/or antiplatelet and a statin. IUH Methodist Hospital set a goal of achieving less than 10% of eligible patients being discharged without the recommended dual medication therapy. To analyze our data, we excluded deceased patients. Patients that were not placed on dual medications for "not for medical reason" or contraindication were included.

Method: The IUH VQI Data Coordinators along with the Integrated Vascular Process Improvement Team worked to develop a process to ensure appropriate discharge medications were prescribed. There were two strategies for improvement.

- The first was to ensure all contraindications were accurately captured in the medical record. Emphasis was put on the importance of the team properly documenting "not for medical reason" when there are contraindications (allergy, intolerance, etc.)
- The second opportunity was to increase compliance for all eligible PAD patients. An individual scorecard was made available to each physician displaying individual outcomes. An educational letter was created to be given to patients to provide awareness to the importance of dual medication therapy at discharge. A second letter was made available to primary care physicians to use as an educational tool to support alignment efforts during the care continuum. (Figure 2) All of these efforts occurred during the monthly Integrated Vascular Process Improvement Meetings. Data was presented in a "blinded" manner to all physicians to show a comparison in individual progress (Figure 1).

Figure 1 Example of Physician Scorecard

Misses on Discharge Combo Medication (Antiplatelet AND Statin) on Arterial Cases

Discharged without Combo Medication "Antiplatelet AND Statin"	Percentage of All patients w/o combo meds 2012-2016	Fraction of All patients w/o combo meds 2012-2016	Percentage of All patients w/o combo meds 2017 q1-2	Fraction of All patients w/o combo meds 2017 q1-2	Amount of improvement since Jan 2017	up (improved) or down (worsen)
GOAL	< = 5%		< = 5%			
All Active MD	20.60%	(530/2568)	13.00%	(35/270)	7.60%	↗
Active and Inactive MD	19.70%	(688/3499)	13.00%	(35/270)	6.70%	↗
MD-01	11.80%	(24/203)	5.60%	(2/36)	6.20%	↗

Misses on Discharge Statin on Arterial Cases

Discharged without Statin	Percentage of All patients w/o Statin 2012-2016	Fraction of All patients w/o Statin 2012-2016	Percentage of All patients w/o Statin 2017 q1-2	Fraction of All patients w/o Statin 2017 q1-2	Amount of improvement since Jan 2017	up (improved) or down (worsen)
GOAL	< = 5%		< = 5%			
All Active MD	17.60%	(452/2568)	10.00%	(27/270)	7.60%	↗
Active and Inactive MD	16.50%	(576/3499)	10.00%	(27/270)	6.50%	↗
MD-01	9.90%	(20/203)	5.60%	(2/36)	4.30%	↗

Misses on Discharge Antiplatelet (Aspirin and/or P2Y12 inhibitors) on Arterial Cases

Discharged without Combo Medication "Antiplatelet" (ASA and/or P2y12)	Percentage of All patients w/o "Antiplatelet" 2012-2016	Fraction of All patients w/o "Antiplatelet" 2012-2016	Percentage of All patients w/o "Antiplatelet" 2017 q1-2	Fraction of All patients w/o "Antiplatelet" 2017 q1-2	Amount of improvement since Jan 2017	up (improved) or down (worsen)
GOAL	< = 5%		< = 5%			
All Active MD	7.70%	(198/2568)	5.60%	(15/270)	2.10%	↗
Active and Inactive MD	7.40%	(258/3499)	5.60%	(15/270)	1.80%	↗
MD-01	3.00%	(6/203)	0.00%	(0/36)	3.00%	↗

Figure 2 Letter for Physicians

Dear Dr._____

We had the pleasure of participating in the care of _____ while she/he was hospitalized recently at IU Health Methodist Hospital.

In our medication review we noticed our patient to be not on certain classes of medications that have been shown to be beneficial in reducing morbidity and mortality in patients with vascular disease.

Statins, beta-blockers, ACE-inhibitors, and anti-platelet agents, all have a role in reducing the risk of myocardial infarction, stroke and/or vascular death with risk a cardiovascular risk reduction approaching 40%.

Accordingly, during the hospitalization, we started our patient on the following vascular health regimen:

- ☐ ASA/Antiplatelet: _____
- ☐ Oral Anticoagulants _____
- ☐ Statin: _____
- ☐ Beta Blocker: _____
- ☐ ACE inhib/ARB: _____

We recommend these medications be continued after discharge to maintain best medical treatment for vascular health. We ask for your assistance in monitoring for the side effects of these medications in your future office visits with our patient. Very rarely, aspirin can cause bleeding. In the case of the prescribed statin medication, we have ordered baseline liver function tests today and we ask that you re-check the tests in four to six weeks.

This initiative to optimize anti-platelet, ACE-inhibitor, statin and beta-blocker therapy in patients with vascular disease, is a component of the Midwest Vascular Collaborative (MVC), of which I am a member and active participant. The MVC is a regional voluntary cooperative group of vascular disease specialists dedicated to improving outcomes and advancing the care of vascular patients. Our regional group is part of a national network of quality improvement organizations sponsored by the Society for Vascular Surgery.

As always, if you have any questions please contact me at 317-962-2300, and I would be happy to speak with you.

Sincerely

1. Foley AM. Perioperative management with antiplatelet and statin medication is associated with reduced mortality following vascular surgery by Randall R. Martino, MD, MS, et al (J Vasc Surg 2014; 59:1615-21).
2. De Martino RR, et all; Participation in the Vascular Quality Initiative is associated with improved perioperative medication use, which is associated with longer patient survival. (J Vasc Surg. 2015 Apr;61(4):1010-9).
3. Rooke, TW. et all; 2011 ACCF/AHA focused update of the guideline for the management of patients with peripheral artery disease (updating the 2005

Results: Physician engagement improved and all three sub-specialties that perform PVI procedures achieved the goal that was set in place. Shown in Table 1, the number of patients discharged with an antiplatelet prescription at discharge increased over 15% from 2013 to 2017. Calendar year 2013 showed a performance of 80.8% (253/313) and 2017 was 96.4% (214/222).

- Similar improvement trends were observed for statins at discharge with 2013 performance of 67.4% (211/313) and 2017 performance of 88.7% (197/222).
- As a result, dual medication at discharged increased over 22% with 2013 performance of 63.5% (199/313) compared to 86.4% (192/222) 2017 performance.
- The positive trends are continuing in 2018 with 95.6% year to date performance for all three categories.

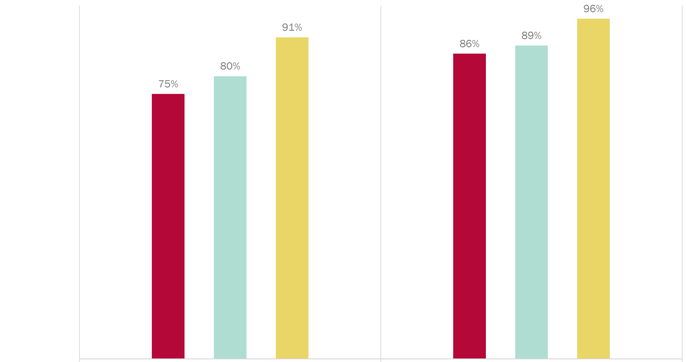

Table 1 Discharge Medication Results

Conclusion: Adopting the VQI initiative of focusing on the importance of ensuring patients with PAD are discharged on the appropriate medications, assisted the team in improvement efforts. Focusing on physician documentation to assist with identifying true opportunities for improvement helped drive the teams' success. The next steps taken to sustain our success are to collaborate with multiple stakeholders (ex: physicians, pharmacists, information systems) to revise current and develop standardized order sets for physician use when documenting discharge medications. Succeeding in our efforts will continue to help improve patient quality of care and outcomes.

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