

# Creating Clinical Pathways

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# Why create clinical pathways?

- Institute of Medicine (IOM) identifies 6 areas for improvement:
  - Safety, Effectiveness, patient-centeredness, timeliness, efficiency, and equity
- Institute for Health Improvement has 3 aims for improving the current system:
  - Improve experience of care, improving health of populations, and reducing per capita costs



# Clinical Pathways Defined

- Serve as a standardized algorithm for a specific population of patients based on a defined clinical problem
- Comprised of a systematic approach with best-practice protocols that outline expected steps for specific clinical problems



# What is involved?

- Multidisciplinary approach
  - Office
  - Surgeon
  - Anesthesia
  - Hospital Nursing and NP/PA
- Create a clear reproducible pathway and share with all
- Identify measurable outcomes
- Track Data
- Share Data
- REPEAT



# Office Staff

- At time of booking provide clear pre-op and post-op instructions including
  - Criteria for discharge
  - Discharge instructions
- Individualized packets for each surgery
- Make a follow up appointment
- “Same Message”

# Surgeon Champion

- Set's the tone and expectations
- In charge of creating and vetting the pathway
- Must review and get "buy in" from all parties
- Get other surgeons in line
- Must listen and help create solutions
- Reviews the data
- Shares the data
- Organizes follow-up



# Partnership with Anesthesiologists

Important component:

- emphasize message
- initial management of pain
- help with avoiding narcotics, edema, complications that require management



# In-Patient Hospital Unit

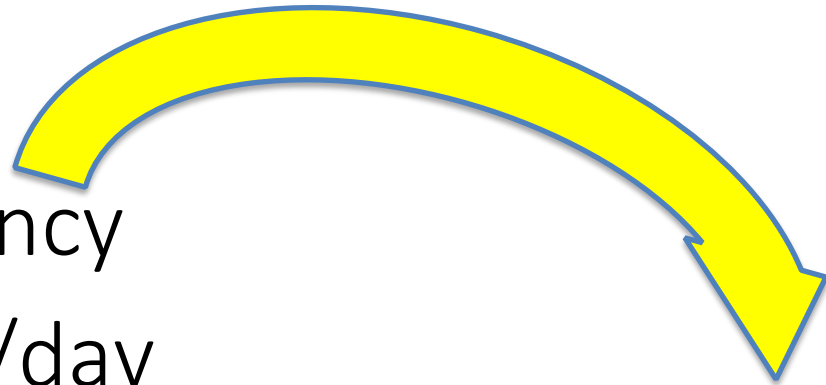
- House Keeping, Nursing Aids, Nursing, NP, PA, Residents, & etc.
- Create 3 meetings over a 3-6 month period
  - #1 - Introduce idea, why important, gather ideas
  - #2 - Finalize pathway and implement  
(Charge Nurse or NP)
  - #3 - Review the data
- This cohort is most important - boots on the ground, understand workflow, challenges and responsible for implementing





# Communicate Importance of Pathway

- Throughput
- Enhance efficiency
- Increase capita/day
- Decrease LOS
- Improve Satisfaction
- Best Practice



Create committee:  
Charge nurse  
Head nurse  
Physician Champion  
Case Manager

# Example #1

## Discharge Before Noon



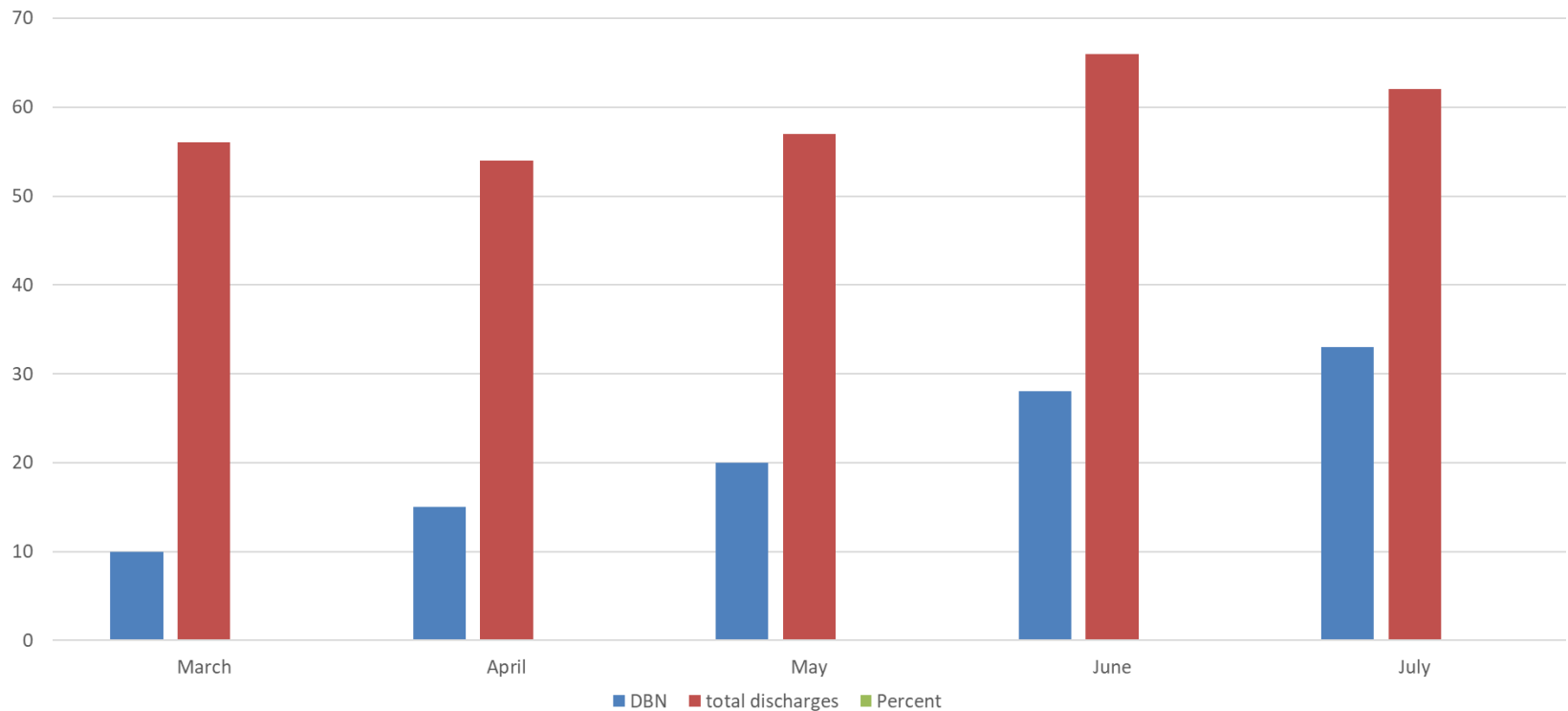
# Lessons Learned

- Phlebotomy early am
- Orders placed on morning round before 8 am
- Foley out midnight
- Discharge instructions night prior ( get pm/am teaching)
- MD set expectation in office and pre-op
- Nursing/NP commitment and education post-op
  - most have as PI goal
  - Teaching starts night prior
  - Call family if “not available”



# DBN 2016 9PE: In-Patient Urology Unit

Chart Title



# Example 2:

## Robotic Partial Nephrectomy Pathway



# Measurable Outcomes:

- Requires access to EMR and data base manager
  - Primary: Length of stay
  - Readmissions
  - Mortality
  - Transfusions
  - HCAHP scores



## Pre-op Pathway:

- Clear liquids up until 6 hours prior to surgery
- If use narcotics(Percocet, Vicodin, Morphine, Dilaudid?) Dilaudid 1mg IM will be injected 30 mins before end surgery.
- Scopolamine history of motion sickness
- Tylenol in holding area 1000mg.



# Intraoperative Pathway:

- Antibiotic Prophylaxis
- OG tube placed and removed prior to extubation unless directed by surgical team.
- Use Mannitol 12.5 gm IV bolus prior to cross-clamping (time it with the surgeon)
- Use Mannitol 12.5 gm IV bolus prior to unclamping (time it with the surgeon)
- Use ICG (Indocyanine green) 5mg IV bolus+flushed in- at surgical request only.
- Zofran 4mg IVP (if not contraindicated)
- Decadron 10 mg IVP (if not contraindicated)
- Hydromorphone 1 mg IM approximately 30 minutes prior to emergence (consider less for smaller individuals)
- Fluid Management:
  - -Hydration-
  - Partial Nephrectomies: 30 ml/kg/first hour, than 15 ml/kg /hour for a Total=3000 ml by the time of Surgical Timeout-before Cross Clamping (assuming healthy patient)
  - Maintenance: 5 ml/kg/hr to end of surgery).
- No a line, 1 large bore IV
- Local infiltration of surgical sites with 0.5% bupivacaine per surgical team (max. 30 ml)





# Post-operative Pathway:

- Oral opiates:
- Oxycodone 5-10mg PO q 4 hours PRN
- for uncontrolled pain oxycodone 10/15mg sliding scale for moderate/severe pain
- Diluadid 2/4/6mg po q4h prn sliding scale (for those with opioid tolerance )
- Tramadol 50-100 mg PO q 6 hours ( for those who have + PONV with oxycodone/vicodin/dilaudid) assuming normal renal function; dosing needs to be readjusted to q8 hours in patients with reduced hepatic or renal function
- Acetaminophen 1000mg PO q 8 hours, with ALL of the above regimens; dosing needs to be readjusted with reduced hepatic function
- Breakthrough pain:
- Hydromorphone 0.4mg IV – can repeat dose after 30 minutes
- Hydromorphone PCA (if pain persists after 2 doses of IV hydromorphone)
- CONSIDER PAIN MANAGEMENT CONSULT IF ANY DIFFICULTY MANAGING PAIN POSTOPERATIVELY!!



# Post- Operative Pathway:

- Activity- POD0 out of bed to chair, evening walk with NP/Resident/ Attending or medical student (if mobility impairment ie uses cane or walker ORDER for physical
- Diet- CLD as tolerated
- Incentive spirometer 10x hr, please send from PACU
- Fluids- POD0 LR @125ml or NS@125ml if not contraindicated, POD1 D51/2NS@75ml if not contraindication
- Catheter/drain- D/c cath at MN, jp creat 4AM
- Labs- 4am CBC and BMP
- PONV treatment
- Ondansetron 4 mg IV q 6 hours (or 8 mg PO q 8 hours if tolerating some PO intake)
- Reglan 10mg IV q6hrs prn
- Compazine 5mg IV q6hrs PRN
- D/C Instructions night prior to d/c



# DATA



Hackensack  
Meridian *Health*

# Cases and Case Mixed Index

Sept-December 2015

vs Sept-December 2016

Discharge Month ▲▼	Cases	Average CMS Pay Wgt
September	7	1.58
October	8	1.74
November	4	2.38
December	9	1.65
<b>Grand Total</b>	<b>28</b>	<b>1.78</b>

Discharge Month	Cases	Average CMS Pay Wgt
September	13	1.58
October	12	1.86
November	13	1.89
December	16	2.01
<b>Grand Total</b>	<b>54</b>	<b>1.86</b>



# Quality Metrics 2015 vs. 2016

Cases	Cases: LOS >= 30 Days	ALOS	Expected ALOS	CMI Adjusted LOS	IP LOS (Avg)	CMI Adjusted IP LOS	CMS Pay Weight (Avg)	# Cases with DC Order Hour after 11am	% Discharged to Home	% Discharged to Rehab	% Discharged to SNF	30 Day Readmits	30 Day Readmission Rate	Mortality (Sum)	Actual Mortality Rate
8	0	2.75	3.42	1.82	2.75	1.82	1.51	5	88%	0%	13%	0	0.00%	0	0.00%
1	0	3.00	3.49	1.98	3.00	1.98	1.53	1	0%	0%	100%		0.00%	0	0.00%
1	0	2.00	3.22	1.31	2.00	1.31	1.53	1	100%	0%	0%		0.00%	0	0.00%
2	0	6.50	7.56	2.60	6.50	2.60	2.50	2	100%	0%	0%	1	50.00%	0	0.00%
1	0	3.00	2.55	1.98	3.00	1.98	1.53	0	100%	0%	0%		0.00%	0	0.00%
5	0	4.00	5.36	2.01	4.00	2.01	1.99	5	100%	0%	0%	1	20.00%	0	0.00%
1	0	2.00	3.22	1.30	2.00	1.30	1.53	0	100%	0%	0%		0.00%	0	0.00%
1	0	2.00	3.22	1.30	2.00	1.30	1.53	0	100%	0%	0%		0.00%	0	0.00%
7	0	6.71	4.53	3.86	6.57	3.78	1.74	2	88%	0%	0%	0	0.00%	1	14.29%
1	0	4.00	7.55	1.99	4.00	1.99	2.01	1	100%	0%	0%		0.00%	0	0.00%
28	0	4.21	4.44	2.42	3.58	2.39	1.74	17	89%	0%	7%	2	7.14%	1	3.57%

Cases	Cases: LOS >= 30 Days	ALOS	Expected ALOS	CMI Adjusted LOS	IP LOS (Avg)	CMI Adjusted IP LOS	CMS Pay Weight (Avg)	# Cases with DC Order Hour after 11am	% Discharged to Home	% Discharged to Rehab	% Discharged to SNF	30 Day Readmits	30 Day Readmission Rate	Mortality (Sum)	Actual Mortality Rate
11	0	2.82	4.09	1.58	2.82	1.58	1.78	3	100%	0%	0%	2	18.18%	0	0.00%
3	0	2.67	3.09	1.25	2.67	1.25	2.13	2	67%	0%	33%		0.00%	0	0.00%
6	0	1.67	4.15	0.89	1.67	0.89	1.87	4	100%	0%	0%		0.00%	0	0.00%
1	0	2.00	3.22	0.99	2.00	0.99	2.01	1	100%	0%	0%		0.00%	0	0.00%
6	0	2.00	3.99	1.08	2.00	1.08	1.85	3	100%	0%	0%		0.00%	0	0.00%
27	0	1.67	3.56	0.98	1.67	0.98	1.70	8	100%	0%	0%	2	7.41%	0	0.00%
54	0	2.00	3.75	1.12	2.14	1.12	1.89	21	98%	0%	2%	4	7.41%	0	0.00%

# Transfusion Rate

Sept-December 2015

vs

Sept-December 2016

Discharge Month	Blood Transfusions	Blood Transfusion Rate
May	1	
July	2	
September	0	0.00%
October	0	0.00%
November	2	50.00%
December	0	0.00%
Grand Total	5	17.86%

Discharge Month	Blood Transfusions	Blood Transfusion Rate
May	1	
June	1	
August	2	
September	0	0.00%
October	1	8.33%
November	0	0.00%
December	0	0.00%
Grand Total	5	9.26%

# Summary

- Multidisciplinary approach
  - Office
  - Surgeon
  - Anesthesia
  - Hospital Nursing and NP/PA
- Create a clear reproducible pathway and share with all
- Create measurable outcomes
- Track Data
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# References

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