ICLIO Webinar: How to Model your Emergency Response to Triage I-O Patients

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Overview

- Introduction of our setting
- Description of typical emergency response to oncology adverse events (including irAEs)
- Oncology Care Model (OCM)
- Symptom Management Area
  - MD role
  - RN role
  - Pathways
- Data analysis and future direction

Advocate Lutheran General Hospital

- Associated with ALGH, a nationally recognized academic research and teaching hospital
- North suburban Chicago
- AHC: largest hospital system in IL, one of nations top 10 HCS
- AHC has the state’s largest physician network of primary care physicians, specialists and sub-specialists

Oncology Specialists S.C.

- Group of 8 sub-specialized hem/onc physicians
- Multiple leadership positions within hospital including
  - director of cancer institute
  - chair of cancer committee
  - vice president of medical staff
  - director of fellowship program
  - division director

Emergency Response to Oncology Adverse Events (including irAEs)

- Office hour coverage: primary nurse model
  - Treatment RNs *specific pathways for irAE
  - Exam RNs
  - Anticoagulation program RN
  - Transplant program RN
- Outside office hours: MD call system
  - Monday-Friday all MDs cover for self
  - Friday 5 PM through Mon 7 AM on-call group (2 MDs, short/long)
  - ALGH Emergency department includes level I trauma center
- Oncology Care Model participation since 7/1/16

- Deficiency in coverage for cases which are based on treatment toxicity, not true emergencies
  - 6 symptoms identified: nausea, dehydration, diarrhea, constipation, pain, fever with possibility for neutropenia

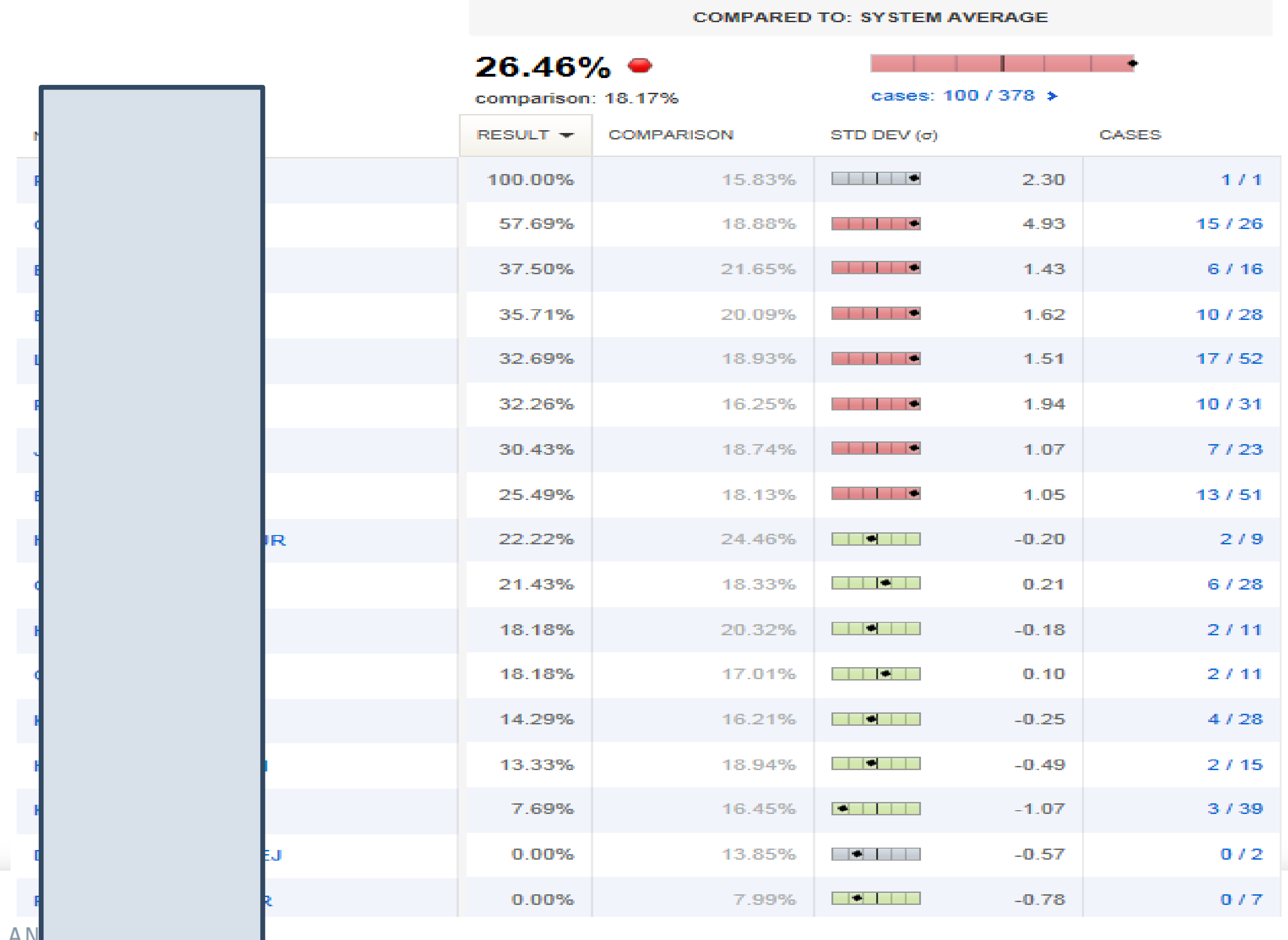
Oncology Care Model (OCM)

- Goal: utilize appropriately aligned financial incentives to enable improved care coordination, appropriateness of care, and access to care for beneficiaries undergoing chemotherapy.
  - improve care and lower costs through an episode-based payment model that financially incentivizes high-quality, coordinated care
  - heighten the focus on furnishing services that specifically improve the patient experience or health outcomes
  - decrease costs and increase coordination and quality

- Practice Requirements
  - OCM participants are expected to engage in practice transformation to improve the quality of care they deliver.
  - Provide patients in the model with 24/7 access to a clinician who has real-time access to the patient's medical records. Cancer patients' complex medical needs don't arise during normal business hours, so it is expected that clinicians be available to provide medical advice whenever patients need it.

- Quality Measures / Performance-Based Payment
  - The number of ED visits per FFS patient
  - The number of hospital admissions per FFS patient

ALGH Oncology 30 Day Readmissions (with Exclusions) by Physician
Compare: ALGH 27 Month Average (System – All Patients))
Role: Attending
Date Range: January 2016 – July 2016


COMPARED TO: SYSTEM AVERAGE

26.46%
comparison: 18.17%

cases: 100 / 378

RESULT	COMPARISON	STD DEV (σ)	CASES
100.00%	15.83%	2.30	1 / 1
57.69%	18.88%	4.93	15 / 26
37.50%	21.65%	1.43	6 / 16
35.71%	20.09%	1.62	10 / 28
32.69%	18.93%	1.51	17 / 52
32.26%	16.25%	1.94	10 / 31
30.43%	18.74%	1.07	7 / 23
25.49%	18.13%	1.05	13 / 51
22.22%	24.46%	-0.20	2 / 9
21.43%	18.33%	0.21	6 / 28
18.18%	20.32%	-0.18	2 / 11
18.18%	17.01%	0.10	2 / 11
14.29%	16.21%	-0.25	4 / 28
13.33%	18.94%	-0.49	2 / 15
7.69%	16.45%	-1.07	3 / 39
0.00%	13.85%	-0.57	0 / 2
0.00%	7.99%	-0.78	0 / 7

ALGH 8 Tower - Inpatients - % Readmit to Acute Care within 7 Days

12.00
10.00
8.00
6.00
4.00
2.00
0.00

6.35
4.51
3.60
1.61
5.80
7.04
6.00
10.135
8.333
8.209
6.667
6.195

TREND

Aug 2015 Sep 2015 Oct 2015 Nov 2015 Dec 2015 Jan 2016 Feb 2016 Mar 2016 Apr 2016 May 2016 Jun 2016 Jul 2016 Aug 2016 Sep 2016

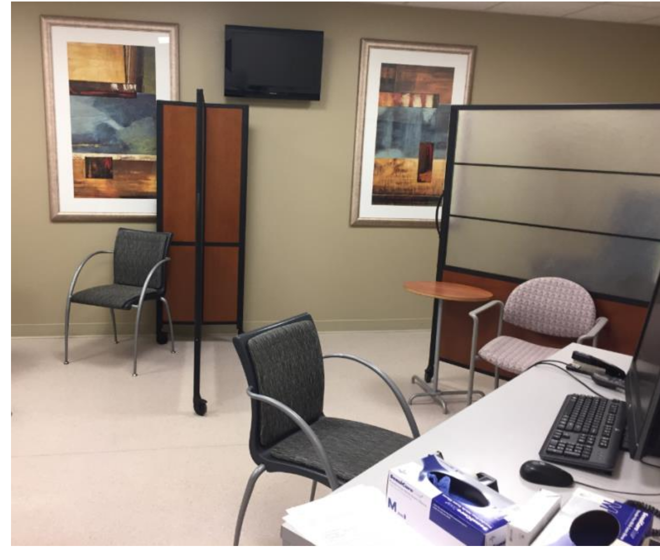
Symptom Management Area (SMA)

- Addresses common symptoms that lead to unnecessary hospital admissions
  - Improved patient experience
- Achieving one of the outcome goals – extending hours with specific care for our patients by specialized team
  - Inpatient oncology nurses (100% OCN)
- Avoidance of ED visits
- Reduction in hospital admissions

Symptom Management Pilot

- Symptom Management Area preparation
  - Painted room
  - 3 recliners purchased
  - Nurse call system installed
  - Dynamap needed to keep in room
  - Computer and phone jacks already available

Pictures of ALGH, Onc Unit and SMA



Symptom Management Pilot

- On call MD directs patient to outpatient admitting registration desk, by-passing ED.
- MD calls admitting office, 3-way call with admitting officer, charge RN on oncology unit, and MD.
- Patient is escorted to the 3-chair outpatient space on oncology floor at ALGH (converted storage room).
- Registered as an outpatient on the floor.
- Charge nurse assumes or assigns care of patient – no incremental staffing costs.
- Resident or Hem/Onc fellow assesses patient upon request
  - Access to outpatient chart for all affiliated practices available.
- Hard-stop at 4 hours for improvement then Observation status, then admission as necessary.
- 6 order sets utilized (nausea, dehydration, constipation, fever, pain, diarrhea).

Nurse as Internal Symptom Manager

- Provides patient assessment
- Initiates appropriate pathway for management of specific symptom
- Several interactions with MD over phone
  - Initial assessment
  - Result review, discussion of intervention
  - Disposition review
- Pathways developed by specific committee within entire Advocate system (100+ oncologists)

Oncology Symptom Management Guidelines -- #5 Diarrhea

Criterion for referral: Diarrhea refractory to home intervention.
Initial Assessment in Symptom Management Center

Admission Time__________ IV Access: ☐PICC ☐Port ☐PIV

Malignancy _____________
Date of last treatment _____________ Treatment _________________

Anti-diarrheal meds received in the last 24 hours:______________________________
Temperature _____________
Blood Pressure (reclining) ____/____ BP standing ____/____
Pulse ____ Pulse standing ___
Respiratory rate ____
Oxygen saturation ____%
Antidiarrheal agents in past 6 hours: ___________________________________

Orthostatic Vitals – Check BP and pulse 2 minutes after standing. The presence of orthostatic hypotension defined as a systolic blood pressure decrease of > 20 mm Hg or a diastolic blood pressure decrease of > 10 mm Hg within three minutes of standing up likely indicates hypovolemia due to dehydration. (Consider Dehydration Pathway).

Interventions
Draw a CBC and BMP. If possible, draw through a fresh intravenous infusion line and after phlebotomy; begin infusion of normal saline at 125mL/hr. Send CBC and BMP stat.
Perform guaiac test on stool sample. Result: ☐ Positive ☐ Negative
Send stool for WBCs. Result: ☐ Positive ☐ Negative
Call in-hospital physician for brief physical examination and assessment.
After report of BMP results, call attending physician with results.
Adjust fluid composition and rate per attending order.
Administer antidiarrheal agents as ordered by attending physician.
Loperamide (Imodium) 2mg tab PO q2hr x 3
Other______________
Diagnosis
Diarrhea resolved without significant electrolyte or fluid imbalance
Diarrhea resolved, but with significant electrolyte imbalance
Diarrhea without resolution

Disposition
Transferred to ED
Hospital admission
Transitioned to additional management guideline
Discharged to home
List any discharge prescriptions given___________________________________
Consensus statement on the definition of orthostatic hypotension, pure autonomic failure, and multiple system atrophy. The Consensus Committee of the American Autonomic Society and the American Academy of Neurology. *Neurology*. 1996;46:1470.

Assessment

Oncology Symptom Management Guidelines

#5. Diarrhea

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Perform guaiac test on stool sample. Result: ☐ Positive ☐ Negative

Send stool for WBCs. Result: ☐ Positive ☐ Negative

Call in-hospital physician for brief physical examination and assessment.

After report of BMP results, call attending physician with results.

Adjust fluid composition and rate per attending order.

Administer antidiarrheal agents as ordered by attending physician.

Loperamide (Imodium) 2mg tab PO q2hr x 3

Other________________

Diagnosis

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Diarrhea without resolution

Disposition

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Hospital admission

Transitioned to additional management guideline

Discharged to home

- List any discharge prescriptions given

Oncology Symptom Management Treatment Area:
Diarrhea Orders
Admit as outpatient with observation
Condition: Ambulatory/Stable
Allergies:
Call in-hospital physician (ROC/MOD) for patient assessment.
Diet: General or ___________________________

Document medication history

Orthostatic vital signs on admission

If Patient is Orthostatic give 500mL 0.9% Sodium Chloride bolus over 30 minutes, and then start IV fluids: 0.9% Sodium Chloride @ 200mL/hr

(*Patient is considered orthostatic if systolic blood pressure falls >20mm/Hg or diastolic blood pressure falls >10mm/Hg within 3 minutes of standing up*)

Vitals (Temp, HR, RR, and Oxygen Saturation) q1 hour

Draw CBC and CMP stat

Start fluids: 0.9% Sodium Chloride @ 125mL/hr (if not orthostatic)

Test stool for Occult Blood

Result: ☐Positive ☐Negative

Send stool for WBCs

Result: ☐Positive ☐Negative

Antidiarrheal ordered (per oncologist):

Loperamide 2mg tablet PO q2hrs x3
Other______________________________

Call oncologist with laboratory results, and for further orders.

Summary Data

Patients treated in Symptom Mgt Area	Cases	% of Cases	ALOS	CMI	Avg LOS in Hours
Admitted to Inpatient	5	25.0%	5.40	1.37	n/a
Discharged from SMA or OBSV	15	75.0%	n/a	n/a	8.40
Total	**20**	**100.0%**			

Patients treated in ED	Cases	% of Cases	ALOS	CMI	Avg LOS in Hours
Admitted to Inpatient	87	26%	4.08	1.02	n/a
Treated and Released	251	74%	n/a	n/a	20.78
Total	**338**	**100%**			

- 358 patients presented to LGH with 1 or more of the 6 symptoms
- 338 of those were seen in the ED
- 20 were seen in the SMA
  - 20 immunocompromised patients not mixed with ED patients
  - 15 patients avoided an admission
- CMI of SMA admitted patients 1.37 vs. 1.02 for ED admitted
- LOS in the ED for those treated and released > 2 X SMA results

ALGH 8 Tower - Inpatients - % Readmit to Acute Care within 7 Days

Summary of Observations

- 20 patients were seen in SMA, 75% avoided admission.
- No operational deficiencies identified, high patient satisfaction and acceptable RN work load.
- SMA is severely under-utilized.
- If the 338 patients presenting to the LGH ED were seen in SMA, approximately 56 admissions (# with CMI<1.0) might have been avoided.
- With 338 SMA-eligible patients, >8900 hours of time spent in ED could have been avoided (19.37 hours average LOS in ED).
- Based on pilot results, SMA more effective for stabilizing and discharging low acuity cases than ED.

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Recognized Obstacles, Solutions

- Obstacles
  - Patient and physician culture to utilize ER for symptoms requiring assessment by HCP.
  - Change is hard, need to remember new program.
  - Perceived difficulty in process.
  - Survey results pending, cancer committee effort.
- Planned Solutions:
  - Patient education with each new patient package and upon treatment initiation, change of therapy.
  - Discussion with ED triage system managers.
  - Physician education and reinforcement.

Future direction for SMA Pilot

- Run pilot for one year and evaluate results.
- If successful, expand LGH design where feasible to other Advocate sites (11 hospitals).
- If no inpatient option, evaluate other space:
  - Urgent care
  - Fast track
  - Observation unit
  - Short-stay unit
- Partner with Advocate Clinics or independent urgent care/walk-in clinics in strategic locations where other options do not exist.
- Consider development of treatment specific pathways (immune related toxicity management).

Case Study I

- 47 y/o male with stage IV melanoma, receiving dual immune checkpoint inhibitor therapy with ipilimumab and nivolumab, 2 cycles administered to date
- Was managed by primary RN since Wednesday – 5 days since cycle #2 dose – for mild abdominal cramping and up to 2 lose stools/d
- Started on oral steroids with prednisone 40 mg/d on Thursday after above symptoms not improved with imodium, diet modification
- Worsening diarrhea on Friday afternoon, prednisone doubled to 1 mg/kg = 80 mg/d

Case Study I

- Patient called on-call MD on Saturday AM after 4 additional liquid stools over night, also mild nausea, no abdominal pain, no BRBPR
- Sent to SMA, assessment revealed stable condition without signs of dehydration, no orthostasis, labs normal including creat, Na
- Stool sent for WBC (positive) and c diff (negative)
- Received IV steroids Solu-medrol 100 mg and IV fluids, observed for 4 hours without diarrhea
- Discharged on prednisone 80 mg/d and diarrhea resolved with 4 week taper

Key Points Case I

- Avoided ER visit, possible admission
- Expert assessment and w/up for highest likely diagnosis in this situation (rather than most common presentation to ER)
- Well-informed patient and highly trained/experienced healthcare team with effective and rapid intervention, keep irAE at grade II and prevent escalation to grade III

Case Study

- 58 y/o female with stage IIa high risk breast cancer receiving TC – called Saturday afternoon with fever 101.8 at home 9 days after cycle #3
- No other symptoms, feels tired
- Sent to SMA – CBC revealed WBC of 9.8. Blood cx, UA and reflex cx sent (and ultimately negative), PORT site c/d/I -- assumed viral infection and sent home with conservative measures
- F/u arranged for Monday with treatment RN for VS check and repeat CBC

Key points case II

- Avoided ER visit, exposure to ER population in immunocompromised patient
- Identification of absence of neutropenia allowed for avoidance of empiric antibiotics, after clinical assessment and while awaiting cultures
- High patient satisfaction with turn-around in <90 min

Questions?

Thank you for participating in the ICLIO e-Course.
Presentation slides and archived recording will be available at accc-iclio.org