Development and Validation of Quality Criteria tool for Discharge Summaries to Improve Care Transitions for Patients from Hospital Care to Primary Care

September 24, 2015

Background

- Increasing focus on handoffs by hospitals, training programs, accreditation bodies, CMPA
- Increasing emphasis on discharge summaries as the formal means of handoff from hospital to family physicians
- Time standard for the completion of discharge summaries in order to optimally support patients who need care right after discharge
- Evidence suggests that care during and early after discharge may be critical in preventing at least a portion of rehospitalizations

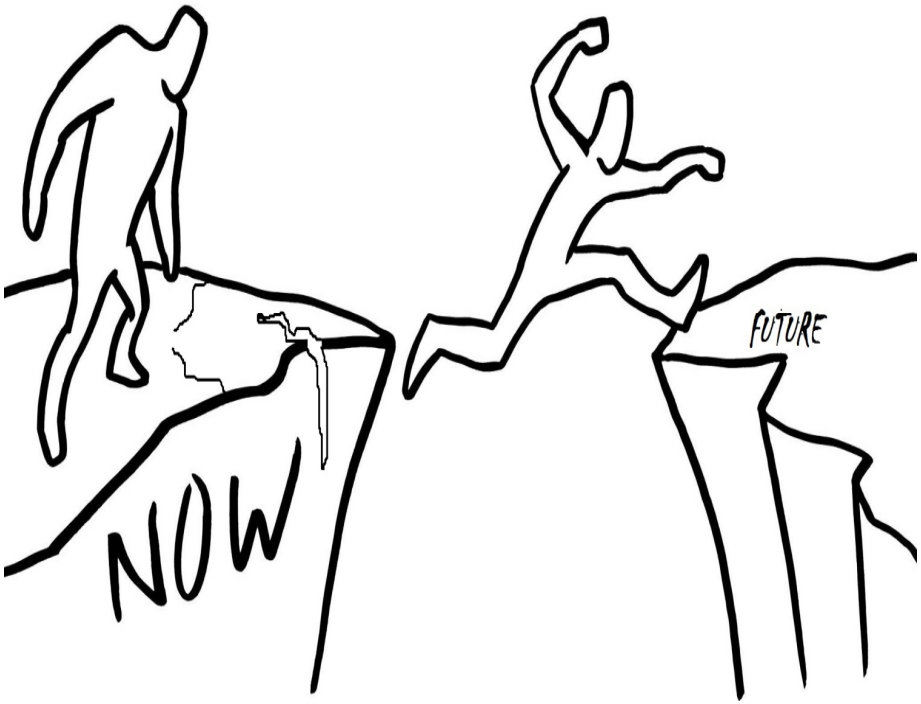
Background

- FPs dissatisfaction with how and when discharge summaries are delivered to them
- Significant variability with respect to timeliness and content of discharge summary reports
- Medical residents and other “tech savvy” learners desire for more electronic-based systems
- Organization’s need to transition to electronic documentation (readiness for EHR)
- Need to comply with Accreditation Required Organizational Practice - transfer of accountability and medication reconciliation

nova scotia health authority

Concept in short

- Understanding current discharge summary systems in place
- To set us on a future path for continuous improvement of discharge summaries
- E-Discharge developed and piloted 2013
- Organizational initiative to Improve Quality of Care in Transitions
- Development of our organization wide implementation strategy



nova scotia health authority

CMPA research initiative

To study:

- Quality and effectiveness of the E-Discharge summary compared to dictated and hand written ones
- Usability
- Timeliness of completion/receipt
- Usefulness/practicality of LACE index within the E-Discharge
- Effect of high quality discharge summaries on readmissions and ED utilization post discharge

nova scotia health authority

Objective: Develop and validate a quality criteria scoring tool to assess quality of e-DCs in the previously ascertained quality domains

METHODOLOGY

LITERATURE REVIEW

- To assess quality as defined in the literature and develop a quality scoring tool based on these criteria

RETROSPECTIVE CHART AUDIT

- Validate the scoring tool that defines how different sections of discharge summary would be scored
- Assess outcomes (readmissions, follow up arrangements) following usage of eDC vs dictated or handwritten

N=150 (e-DCs vs Dictated/handwritten)

STAKEHOLDER FEEDBACK

- Feedback survey from eDC users and community FPs

eDC users=30
Family Physicians=30

- Focus group with primary care providers to further refine themes from survey

N=10

Quality criteria for e-DCs

To support establishment of standards, education and engagement leading to better outcomes

Tool components

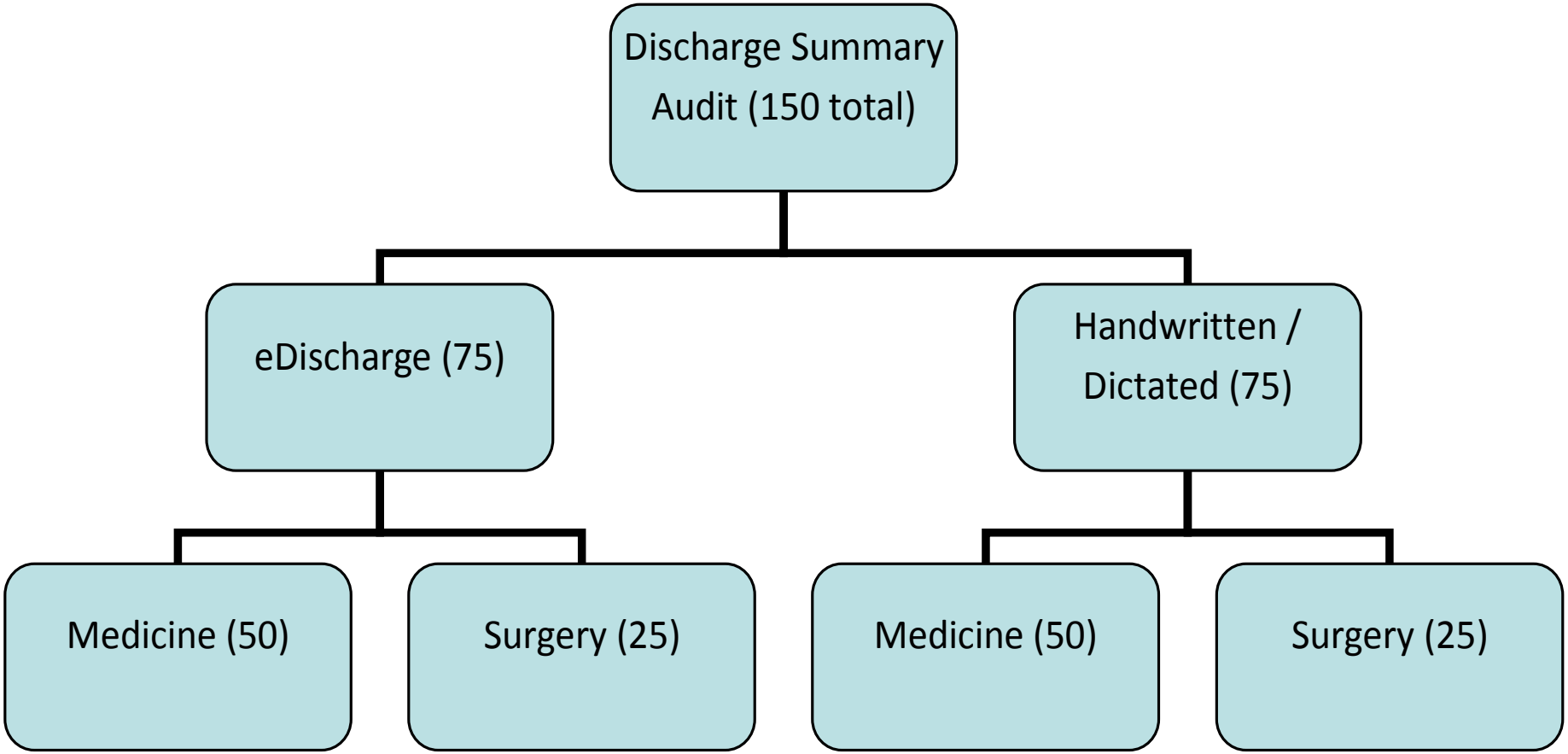
- Admission diagnosis
- List of discharge diagnoses
- Discharge diagnosis responsible for the greatest part of the LOS
- History of present illness
- Pertinent physical findings
- Goals of care
- Course in hospital
- Hospital consults
- Procedures in hospital
- Discharge medication
- Pertinent lab test and investigation results
- Test results pending at discharge
- Outcome of care/Condition at discharge-functional ability
- Follow up issues identified
- Appointments after discharge
- Discharge instructions
- Identified attending clinician to be called by PCP if there are questions

nova scotia health authority

The tool – chart audit

Component item	Omitted 0	Less than optimal 1	Optimal 2	Excessive 1
Admission diagnosis:	No information	Less than optimal e.g. only chief **complaint** or presenting **symptoms**	Preliminary or working diagnosis given at the time of admission	
List of discharge diagnoses:	No information	Less than optimal e.g. only signs, symptoms or unknown abbreviations	**Principle** discharge diagnosis or main reason for admission AND **All additional** pertinent diagnoses where applicable	
Discharge diagnosis responsible for the greatest part of the LOS:	No information	**Maximum 1** Diagnosis accountable for the largest portion of the patient's stay		
History of present illness:	No information	Some information missing	A brief summary of initial presentation and diagnostic evaluation	Excessive description
Pertinent physical findings:	No information	Some information missing	Findings relevant to diagnoses	All findings or substantial number of irrelevant findings
Goals of care:	No information	Some information missing	Level of treatment, code status (e.g curative, life prolonging	

We scored



nova scotia health authority

The tool – the surveys

Surveys sent out to:

- Hospitalists
- Physicians in community (FPs)

1. **In what role do you use the eDischarge summary?**
   Resident Attending Physician Nurse Practitioner Other

2. **Please indicate your current level of experience using computers.**
   Little experience Some experience Lots of experience

3. **On an average, how long does it take you to complete the eDischarge summary (excluding DMR)?**
   <10 min 10 to 20 min 21 to 30 min > 30 min

4. **On an average, how many eDischarge summaries do you complete each week?**
   0 1 to 4 5 to 9 >10

5. **Please rate the following items about eDischarge summary on a scale of 0 to 10 (where, 0=poor and 10=excellent).**

   Ease of use
   0 1 2 3 4 5 6 7 8 9 10

   Organization of information in logical and clear fashion
   0 1 2 3 4 5 6 7 8 9 10

   Completeness of necessary information required for continuity of care
   0 1 2 3 4 5 6 7 8 9 10

   Conciseness of information
   0 1 2 3 4 5 6 7 8 9 10

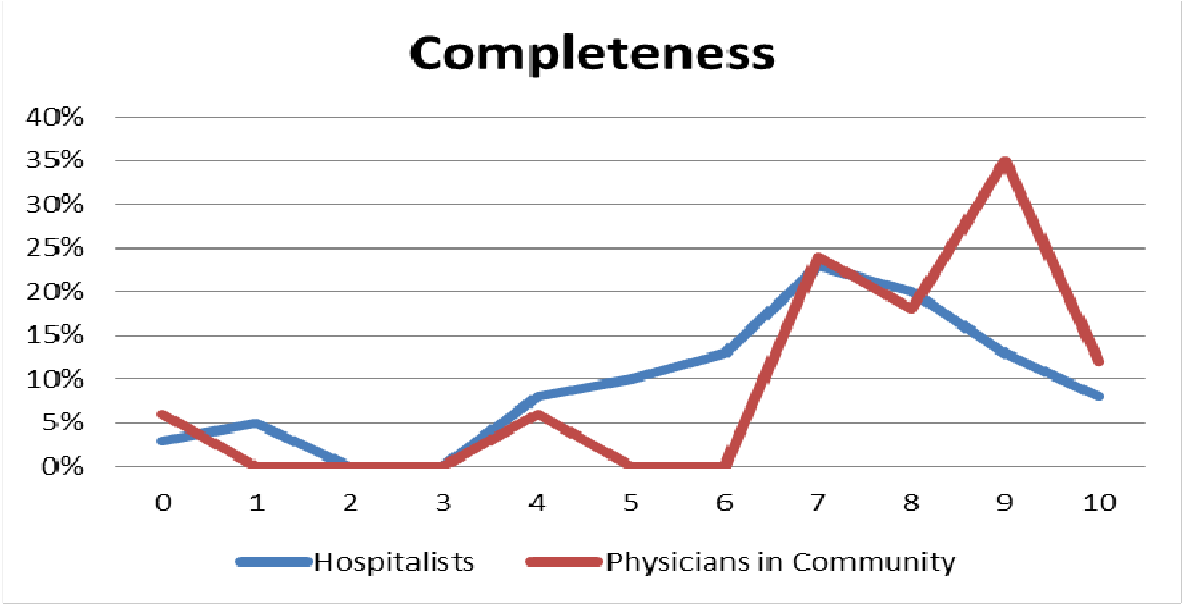
   Overall quality of information
   0 1 2 3 4 5 6 7 8 9 10

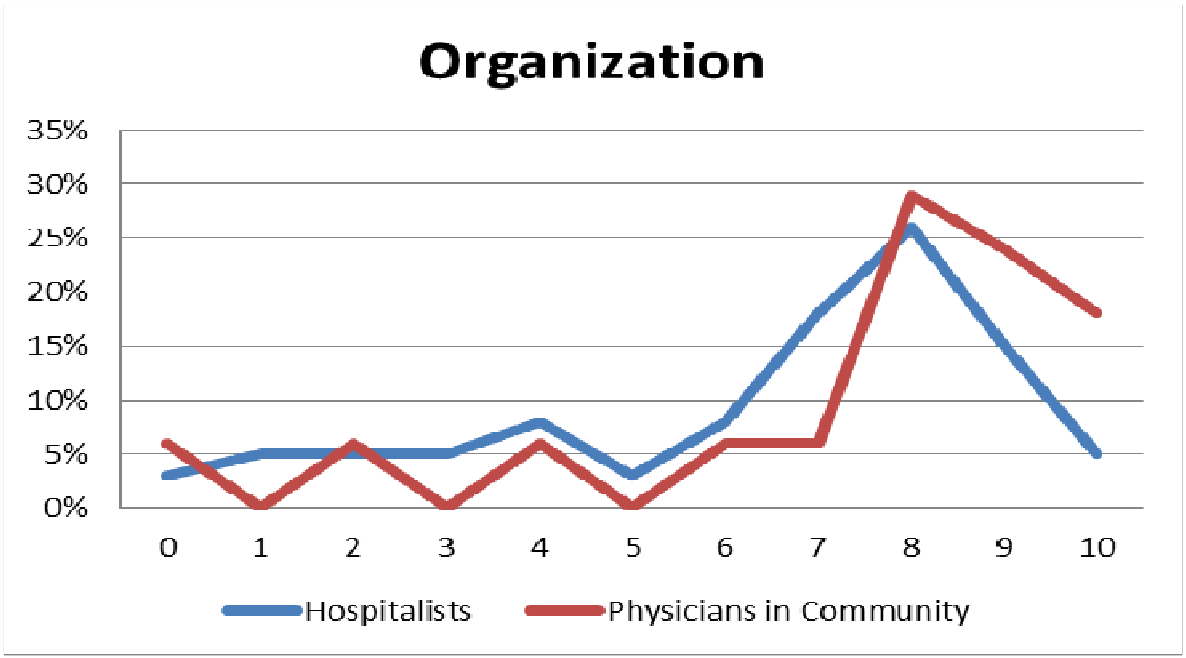
   Your overall satisfaction with eDischarge
   0 1 2 3 4 5 6 7 8 9 10

   If your rating is < 5, please indicate a reason for your rating:

nova scotia health authority

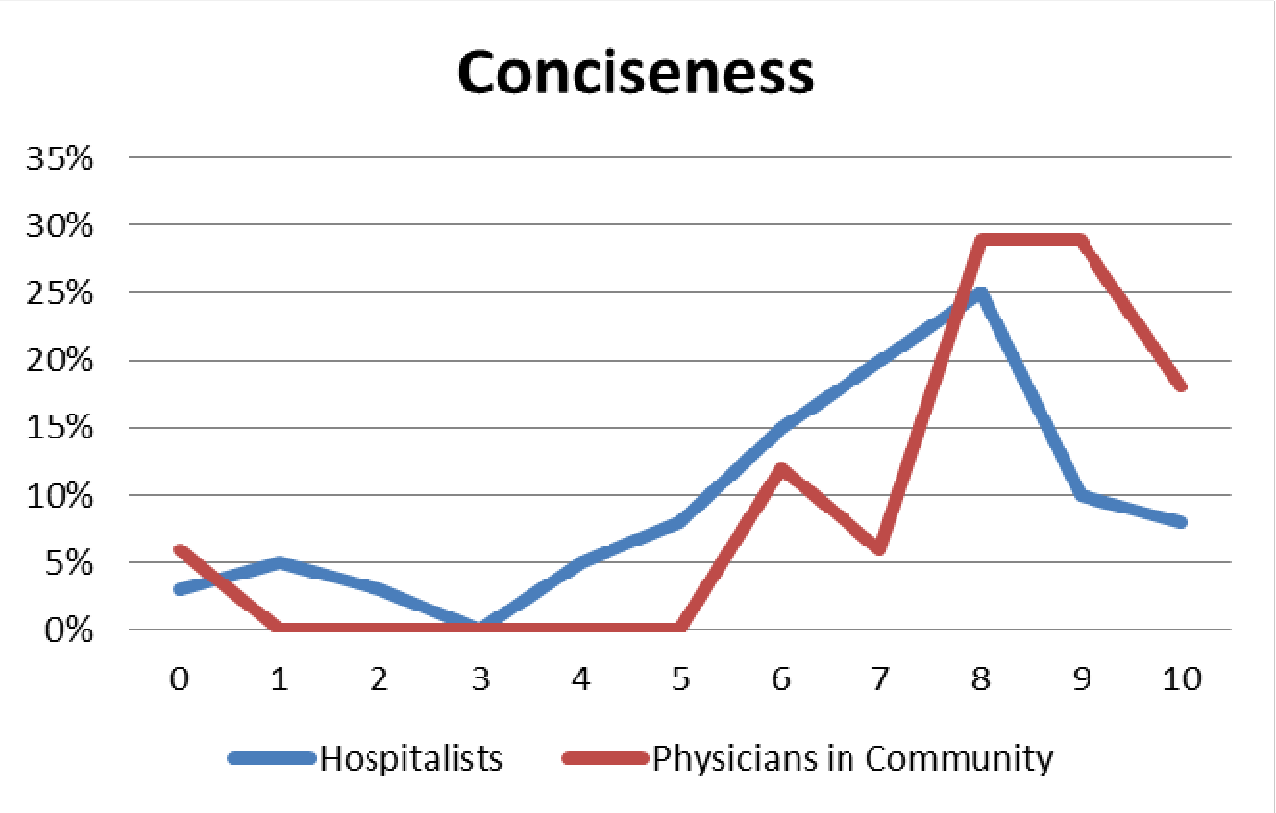
RESULTS: Surveys





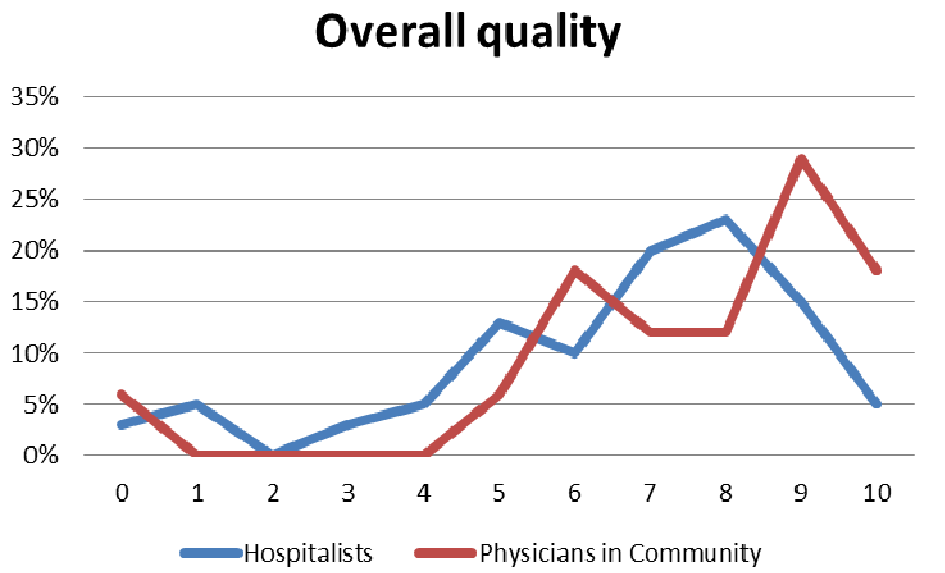
nova scotia health authority

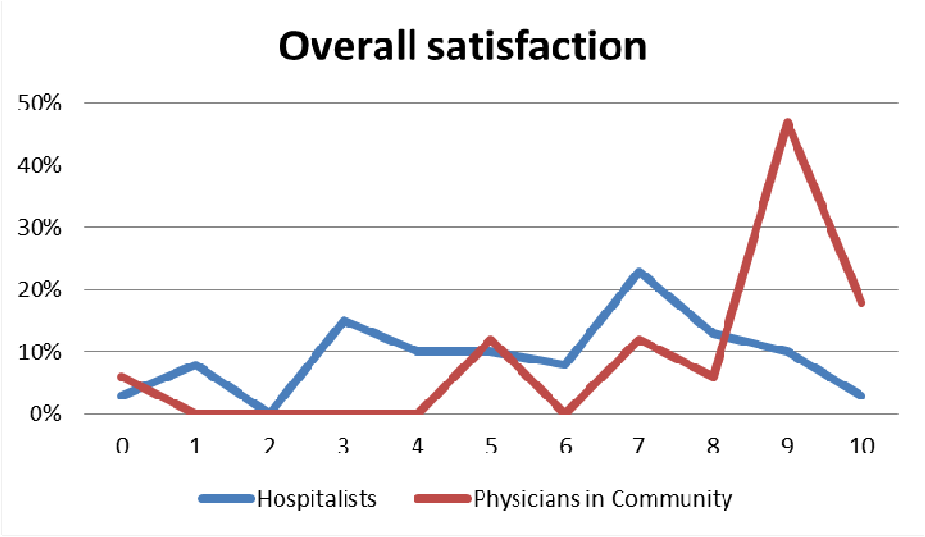
RESULTS: Surveys



nova scotia health authority

RESULTS: Surveys



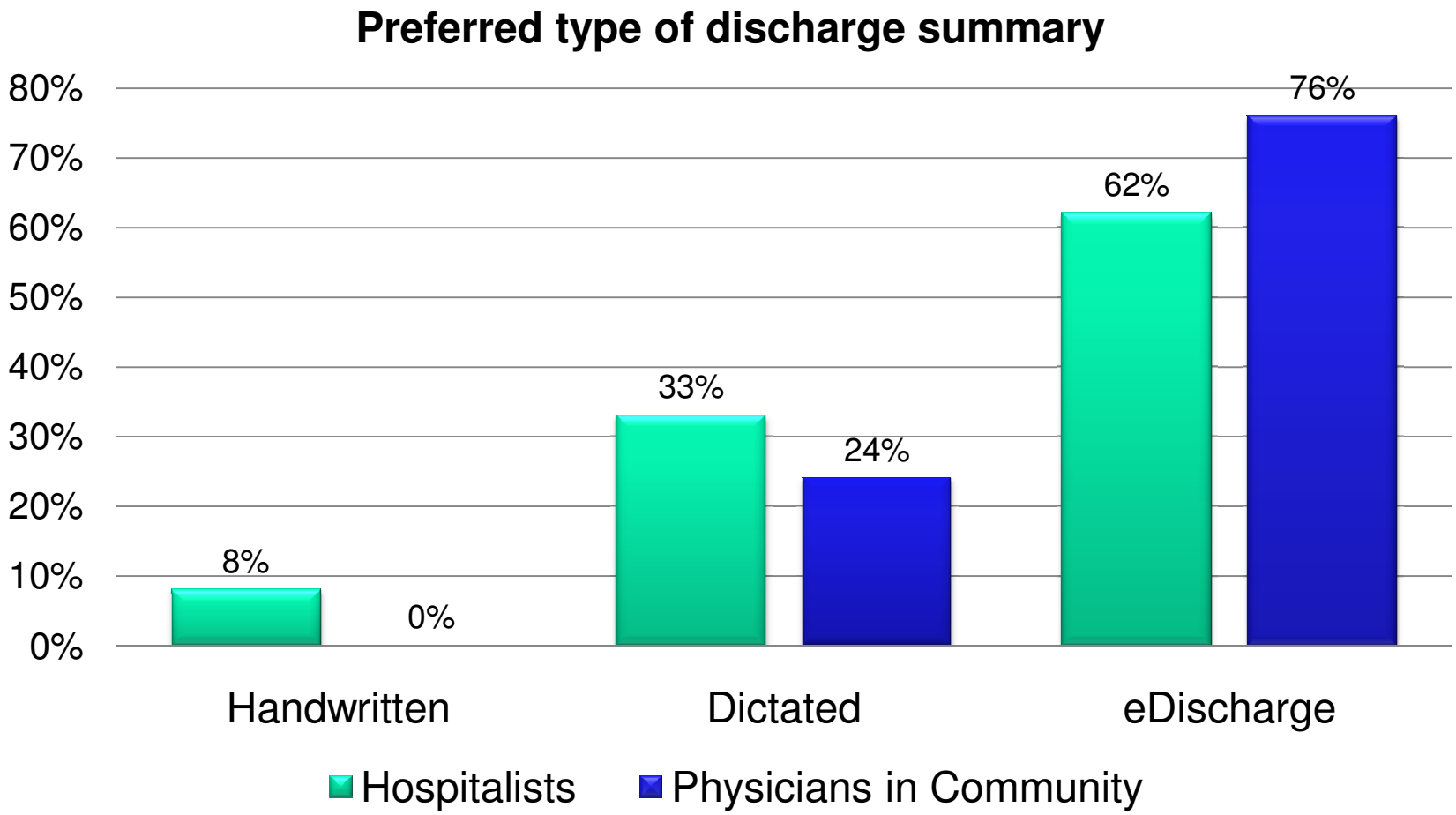


nova scotia health authority

Results from retrospective chart audit- Select quality

Quality dimensions	Mean (SD) eDischarge N=77	Mean (SD) Dictated N=66	p-value
Overall quality	85.12 (6.68)	58.59 (12.12)	**<0.0001***
Admit diagnosis	5.96 (0.34)	3.41(2.97)	**<0.0001***
History of Present Illness	4.03 (1.58)	4.05(1.63)	0.94
Course in Hospital	4.71 (0.9)	4.73(0.89)	0.89
Pertinent Physical Findings	0.71 (1.67)	1.63 (2.3)	0.0065* for dictated
Discharge Medications	4.74 (1.12)	3.28 (2.22)	**<0.0001***
Lab Investigations	4.83 (1.83)	5.14 (1.95)	0.33
Goals of Care	2.99 (2.33)	0.42(1.36)	**<0.0001***
Outcomes of Care	5.81 (0.89)	3.36 (2.81)	**<0.0001***
Follow up issues	5.92 (0.48)	3.41 (2.52)	**<0.0001***
Discharge instructions	4.81 (0.89)	1.59 (2.22)	**<0.0001***
Appointments after discharge	4.94 (0.4)	3.79 (1.82)	**<0.0001***

RESULTS: Surveys- Preferred type of discharge summary



nova scotia health authority

RESULTS: Surveys- Top challenges identified

- Time consuming to login and fill
- Slow computers
- Poor flow of information
- Not user friendly
- Incompleteness of information
- Lack of access/use
- Spellcheck improvement needed
- Better IT support

nova scotia health authority

RESULTS: Surveys- Top recommendations identified

- Auto fill of lab reports into e-Discharge
- Auto fill info into e-Discharge from other departments
- E-Discharge be little more elaborate
- Better training of House Staff
- Add voice recognition system for entries in E-Discharge
- Integrate DMR into e-Discharge (currently DMR imported)
- List names of all MDs caring for patient
- Ability to add customized sections
- Better drop down menus for recommendations/follow-up

nova scotia health authority

Result: Surveys - LACE helpful?

Comments:

- "It would add whole bunch of things to what already exists - a Practicality to risk assessment may not be there"
- "giving a score to patients is not that helpful…..we have a pretty good idea by the diagnosis of patients“
- “Even if you score a patient and report it to a family doctor, nobody has conversation with the patient”
- “If the risk of readmission or dying is 30% ….is it going to be like that or is there anything we could do to alter that?”

nova scotia health authority

1. System Benefits

1. Physician engagement:
    I. Hospital based: DMAC; Departmental meetings; Service Education Sessions; Resident Orientation; on-line surveys
    II. FPs: Focus groups; education sessions; on-line surveys
2. Patient Engagement (patient copy; BOOST– teach back)
3. Introduction of on-line documentation (readiness for EHR)
4. Inclusion of DMR within Discharge Report
5. Quality improvement opportunities: 3 consecutive years 1000 chart audited for required elements – results feed back to leadership and services

nova scotia health authority

2. System Benefits

6. eSummary in development (eDischarge V3 & eTransfer) will be available through Clinical Portal and integrated into operations (HIS / ITS support)
7. Website developed containing toolkit and educational resources specific to improving quality of care in transitions. (Linked to Medical Education; Physician Education; Professional Practice; Performance Excellence and Dalhousie Faculty of Medicine)
8. HIS has developed an education session on enterprise clinical documentation applications and how they work together
9. Improvements on other discharge summary formats due to general training on the quality aspects of discharge summary

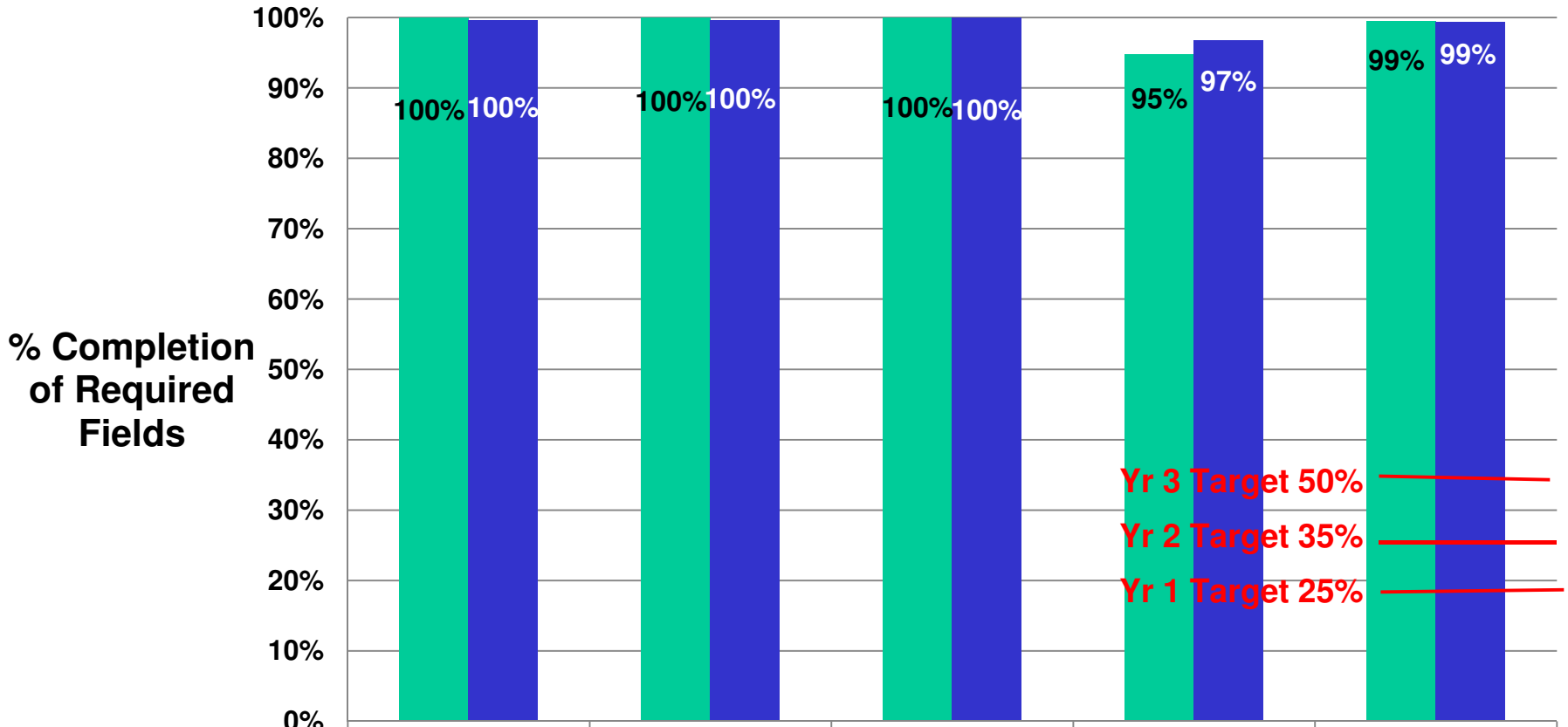
nova scotia health authority

3. System Benefits

10. Policy to align discharge summary completion process regardless of tool used (eDishcarge, eScription, Synoptic)
11. Enforcement of policy around discharge summary completion time
12. Patient Safety orientations for new Residents & Clinical Clerks now includes transitions information/ communication with patients and FPs
13. Education regarding the five quality medico-legal requirements in a discharge summary
14. Physician to Physician Handover: Guidelines developed; Handover Tool development; education through Rounds

nova scotia health authority

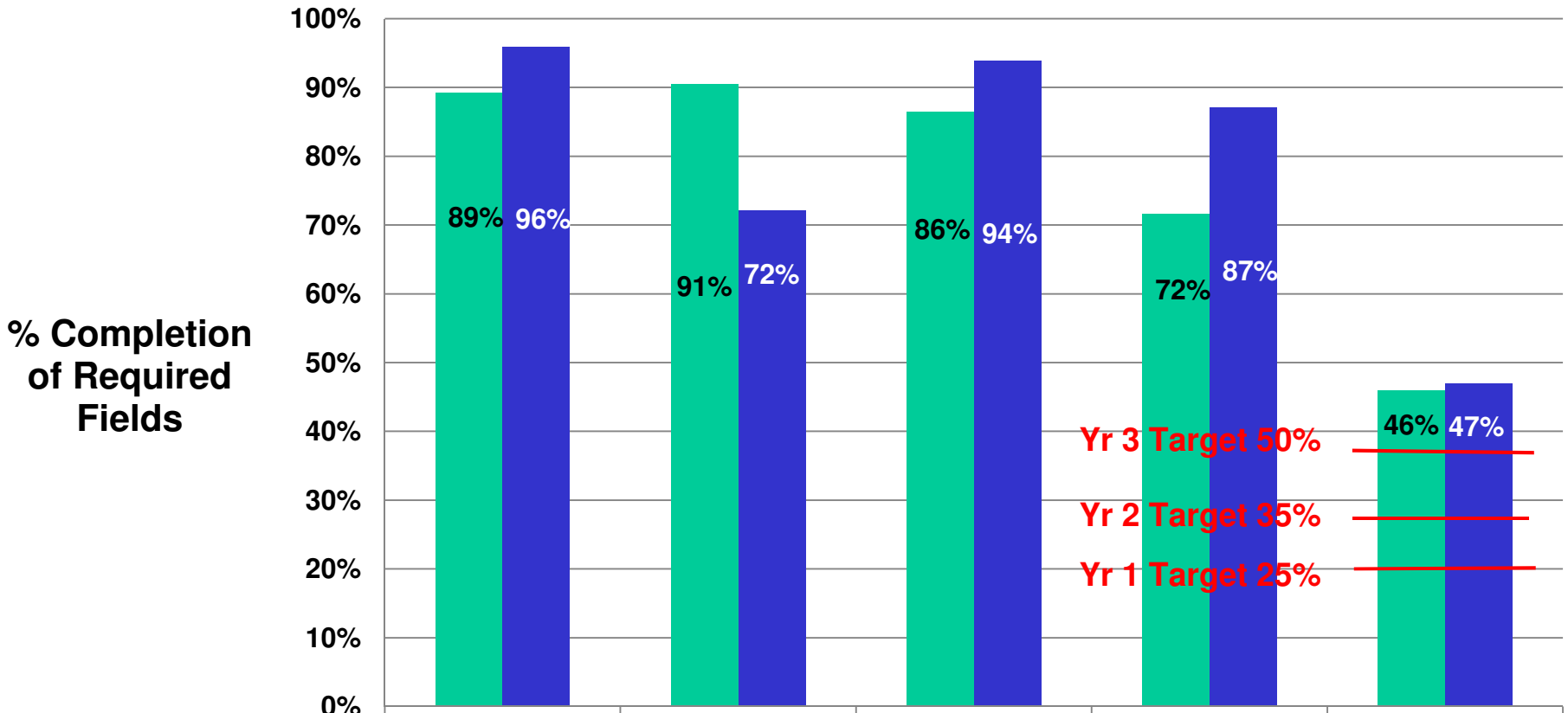
Completion of Required Fields
E-Discharge



	% Diagnosis	% Outcome	% Follow Up	% Medication	% Instructions
Year 1 eDischarge	100%	100%	100%	95%	99%
Year 2 eDischarge	100%	100%	100%	97%	99%

nova scotia health authority

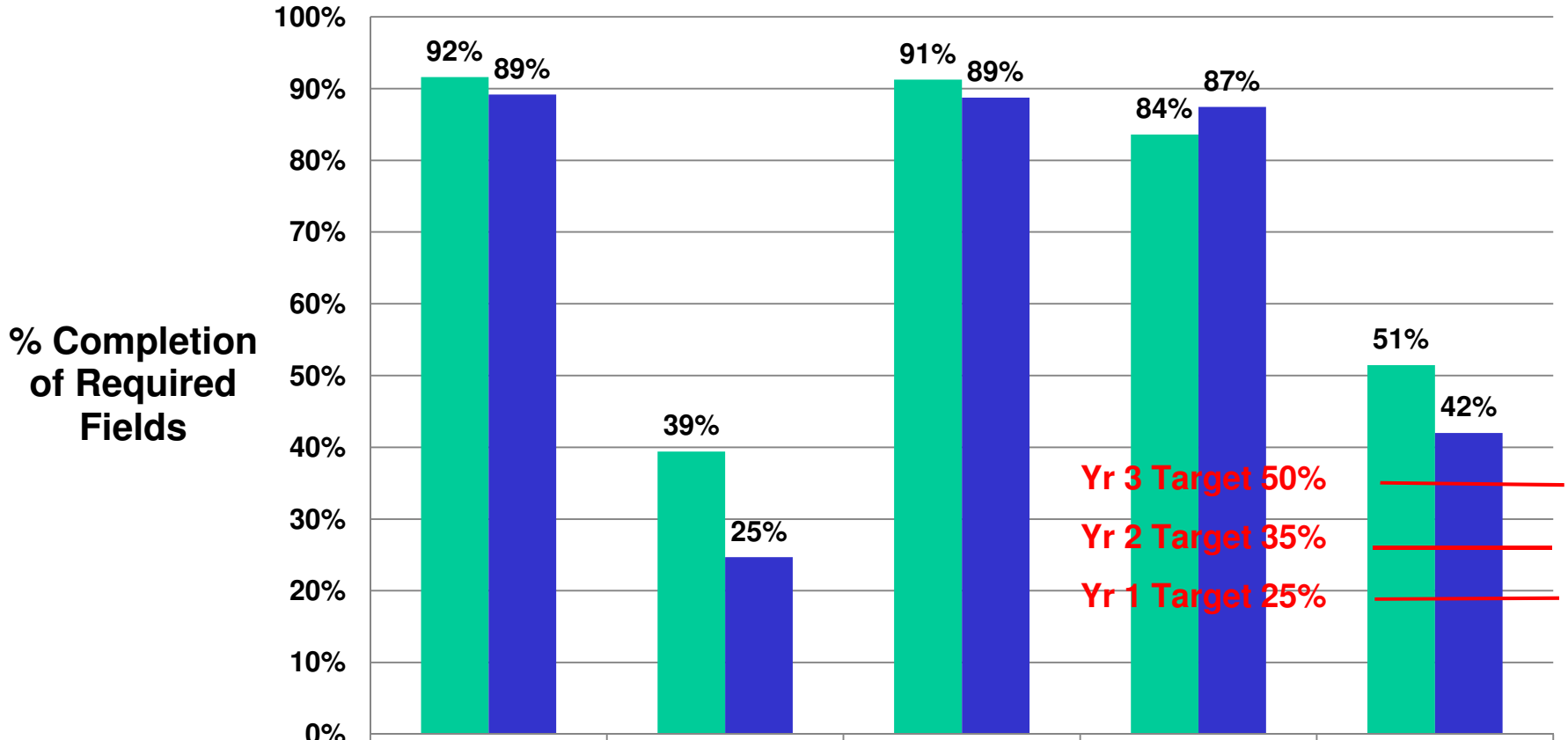
Completion of Required Fields Dictated



	% Diagnosis	% Outcome	% Follow Up	% Medication	% Instructions
Year 1 Dictated	89%	91%	86%	72%	46%
Year 2 Dictated	96%	72%	94%	87%	47%

nova scotia health authority

Completion of Required Fields Handwritten



	% Diagnosis	% Outcome	% Follow Up	% Medication	% Instructions
Year 1 Handwritten	92%	39%	91%	84%	51%
Year 2 Handwritten	89%	25%	89%	87%	42%

nova scotia health authority

Results From retrospective chart audit- Readmission rates and other indicators

Other Quality Indicators	Mean (SD) eDischarge	Mean (SD) Dictated	p-value
No readmissions	85.35 (6.04)	58.68 (12.04)	<0.0001*
Length of summary	85.23 (6.7)	65.9 (6.32)	<0.0001*
Time to completion			
Same Day	84.94 (6.42)	60.06 (10.37)	<0.0001*
1-2 days	87.74 (6.63)	55.36 (17.61)	<0.0001*

E-DischargeSummary

- 17,400+ completed eDischarge reports to date biggest users: Cardiology, Hospitalist Med Units; Family Practice; Cardiovascular Surgery; General Medicine; Geriatrics
- 800+ clinicians trained to use the system
- Developing eTransfer → information feeds into eDischarge
- Access through Clinical Portal
- Support inclusion of Transfer Med Rec & Discharge Med Rec
- Creates single support and training platform in Clinical Portal
- Mandatory quality medico-legal required fields
- Service defined drop down lists for specific fields (e.g. instructions)

nova scotia health authority

The patient's e-DC printout

nova scotia health authority

This is an unconfirmed report - 2015-05-26. To be confirmed by Macarthur, Theresa Tai

Capital Health

Discharge Summary

Hospital Locating Information
DGH - (902)465-8300

2321460 1943-12-12 F 71Y
KIOSK, MELINDA
000123456 MB EXP:
796 GROSVENOR AVE
WINNIPEG MB 22001549
431-113-2983 PM 2015-05-05
AP: MACARTHUR, THERESA TAI OT
FP:

Patient Copy

Created: 2015-05-25 11:30:47 PM
Submitted: 2015-05-26 1:10:04 PM
Form State: Completed Not Verified
Assign to Physician: Macarthur, Theresa Tai

Discharging Service Details

Attending Physician:	MACARTHUR, THERESA TAI	PMB:	0
Service:	HOSPITALIST	Location:	HOSPITALIST
Office/Clinic Phone:		Fax:	

Admission Date: 2015-05-05 8:56:00 AM **Discharge Date:** 2015-05-25 11:59:00 PM

Admission Diagnosis

Pulmonary Embolus- Left lung

Discharge Diagnosis

Pulmonary Embolus- Left lung
Pneumonia
Metastatic lung cancer
Functional decline

Diagnosis responsible for the greater part of length of stay

Metastatic lung cancer

Allergies

Penicillin	Talwin

Past Medical/Surgical History, Co-morbid Illnesses and Risk Factors

Metastatic non small cell lung cancer/ carcinomatosis and brain mets followed by rad onc)	GERD	HTN
Osteoarthritis	Diabetes II	chronic anemia, possibly related to ETOH abuse
COPD	Smoker until 1 year ago (40 py)	Chronic Renal Failure

Brief Summary of Course in Hospital

71 yo female with known lung cancer presented to ER with 3 days of increasing shortness of breath, cough, sputum tinged with blood and a swollen and painful right leg. Upon arrival she was hypoxic (O2 Sats 78% on room air), tachycardic (HR 140) in sinus rhythm with a BP of 72/45. Her temp was 38.6C

CXR showed known lung opacities and lymphadenopathy. CT PE protocol confirmed large L sided pulmonary emboli. She was placed on oxygen and Dalteparin (15,000 units/day) was initiated. She was also started on IV pip/taz and was admitted to the hospitalist service.

PE: Therapeutic Fragmin continued. Chest pain resolved and O2 levels improved but unable to wean

oxygen. A right side thoracentesis was performed on May 11, with 1.5 lit of serosanguinous fluid drained. Fluid reaccumulated quickly and therefore procedure repeated again on May 16 for 1L of similar color fluid. Finally pleurodesis was performed by thoracics on May 20. Respirology consulted and arranged for home oxygen. VON organized for daily Fragmin injections in the community to continue indefinitely due to patient's cancer.

Pneumonia: Treated initially with pip/taz for 4 days and subsequently with Levofloxacin for another 6 days.

Mobility: Independent with toileting and transfers and walking short distances. She does have SOBOE, but this is tolerable with oxygen. Patient did improve with PT and returned to very near her baseline (assist x 1). Felt ready for home.

D/C plan: Home oxygen arranged. Patient had declined home care supports in her last admission 2 months ago but is now agreeable to same. Continuing Care involved and has arranged home supports. Her son Bill will also be spending 4-6 hours/day with the patient. VON will visit daily for symptom management and Fragmin injections.

Completed Tests and Investigations

WBC on arrival: 31
CXR on May 5: L lung opacities and lymphadenopathy. Large bilateral pleural effusions more significant on the right
CT PE study on May 5: moderate size left lung segmental pulmonary emboli, bilateral pleural effusions more significant on the right.
Leg Ultrasound on May 5: extensive DVT of the R leg
NPA: Negative for influenza A, B, RSV.

Blood cultures negative x 2
ABGs on room air May 21: 7.44/42/48/28

Operations and Procedures

☑ Not Applicable

Right side thoracentesis performed on May 11, with 1.5 lit of serosanguinous fluid drained. Repeated on May 16 for 1L of similar color fluid.
Pleurodesis performed by thoracics on May 20.

Complications

☑ Not Applicable

Outcome of Care and Condition Upon Discharge

Requiring 2L oxygen via nasal cannula. Ambulating short distances. Melinda requires assistance for her transfers. Sometimes needing assistance with personal care. Patient will have home care services twice a day upon discharge home.

Follow-up Plan, Recommendations and Pending Results at Discharge

Follow-up Action	Date for Action	Action Status	Person Responsible for Action
Repeat chest X ray	2015-06-01	To be Arranged by	requisition given to patient and son
See your family doctor at your home	2015-06-01	Arranged	Family doctor agreed to do a home visit on June 1.
Check labs	2015-06-01	To be Arranged by	requisition given to patient and son
Follow up with radiation oncology	2015-06-16	Arranged	rad onc has booked

Recommendation

Discussed with patient's family doctor about the specifics of this admission as well and the calculated 35% risk of readmission for this patient. Progression of SOB and difficulty functioning are the most likely issues to require attentiion in the near future and family doctor has kindly agreed to follow up closely starting with a home visit on June 1.

☑ No pending results

Pending Results

Patient's Goals/Preferences of Care

☑ Discussed with patient and/or SDM and documented

GOALS OF CARE: DNR, no ICU, no life prolonging measures unless required for symptom control

Personal Directive Available

○ Yes ○ No

Education and Instructions Given to Patient, Family or Authorised Representative

You have been diagnosed with blood clots in your lungs. Your treatment consists of Fragmin injection indefinitely. You were also diagnosed and treated for pneumonia and although this has now resolved home oxygen will be necessary to help with your breathing and has been arranged. In the event your breathing worsens or you develop chest pain, persistent cough or fever you should seek medical attention.

If you feel unwell please talk to your VON nurse and your family doctor as needed. If you are unsure of what to do, call 811 for advice. If your breathing worsens or you develop chest pain, persistent cough or fever , please see your family doctor right away. In the event you are unable to see your doctor, please go to the emergency department.

If you have difficulty functioning at home, your home Continuing Care coordinator can increase the amount of home care you receive at home.

Medication on Discharge	○ See attached Discharge Medication Reconciliation (DMR) ○ Medication Not Required ◉ Electronic DMR is Not Available
Discharge Destination	Home with VON and Home Care

VON Orders

Daily Fragmin injections 15,000IU to continue life long and symptom management

nova scotia health authority