



Standardizing Documentation and Improving Note Quality Across the Enterprise

Ulka Kothari MD FAAP

Jonah Feldman MD FACP



Challenge

Medical documentation is the cornerstone of team communication, yet clinical notes have become redundant, inaccurate, and unnecessarily varied. Poor documentation leads to delays in diagnostic and treatment plans.

Lengthy and Unnecessary Documentation

Sidebar Summary Handoff Edit Note

My Note Tag Share w/ Patient Details

Physical Exam

Service: Date of Service:

Cosign Required

Arial 11 B I U A ✂ ☰ ☒ 🔍 abc ↶ ↷ ? + Insert SmartText

← → ↶ ↷ 🗣️ 👤

Subjective:
XXXXX is a 62 y/o female who had concerns including Fever (co fever and generalized weakness since yesterday.).

HPI:***

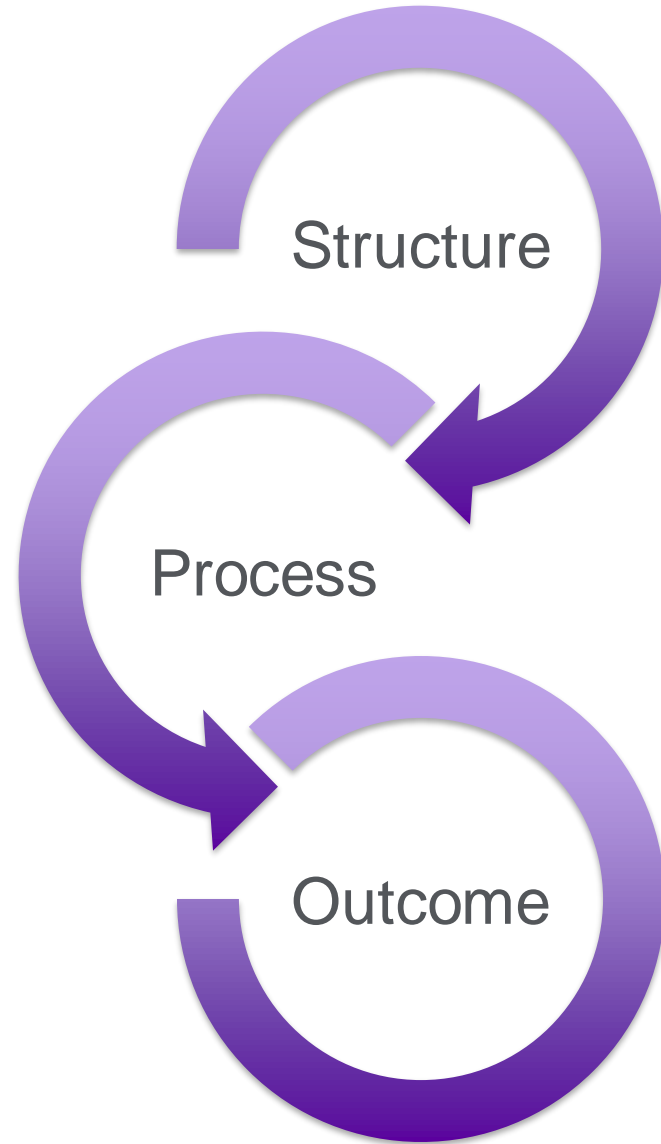
Patient has no recent travel history domestic or overseas. No contact with anyone with travel abroad. No exposure to person with confirmed or under surveillance for coronavirus.***

Past Medical History:

Diagnosis	Date
• Breast cancer	
left Dx 2008 ; bone & liver mets 2015. follows closely with onc. currently stable on medication	
• Chronic kidney disease 3	
follows with nephrology	
• Hyperlipidemia	
• Hypertension	
• Radiation	2008
left chest	
• Type 2 diabetes mellitus, without long-term current use of insulin	09/11/
jenta-dueto oral (metformin plus ...) from PCP	
• Vitamin D deficiency	
takes supplements, 50,000 once/week	
• Wolff-Parkinson-White (WPW) pattern	
ablation 2000	

NYU Langone Documentation Standards Committee

Objective: Develop and implement standardized documentation and accountability processes for provider notes to improve quality and readability, while eliminating errors and capturing the complexity of care provided.





Structure

Committee Membership

Executive Leadership

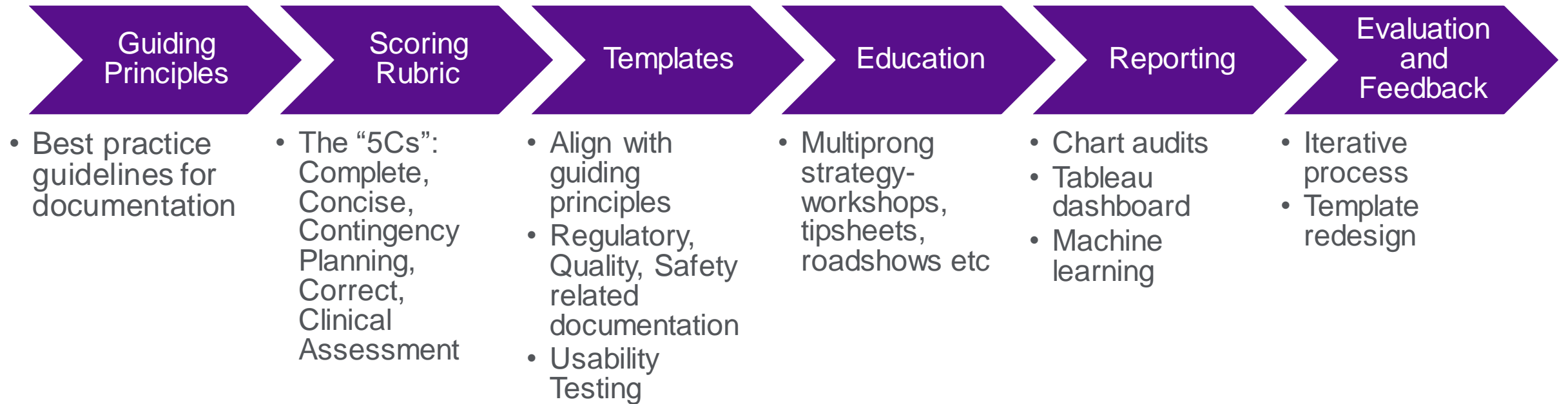
- Office of the CMO for each campus
- Health System Surgical Lead Vice Chairs: Departments of Medicine, Surgery, Emergency Medicine, Pediatrics, OB
- CMIO and Physician Informaticists
- MCIT Clinical Systems
- Quality and CDI Medical Directors
- Compliance and Regulatory Affairs

- Setting goals, best practice guidelines, design principles, grading rubric, reporting and tracking

- **Department Leadership**
 - Chief of service
 - Quality and Safety Officer
 - Pediatric Program Director
 - Administrative leadership
 - Physician Informaticist
- **Division Clinical and Operational Leadership (for each service that went live)**
 - Each campus
 - Physicians, NP, PA, Chief Residents



Process



Guiding Principles

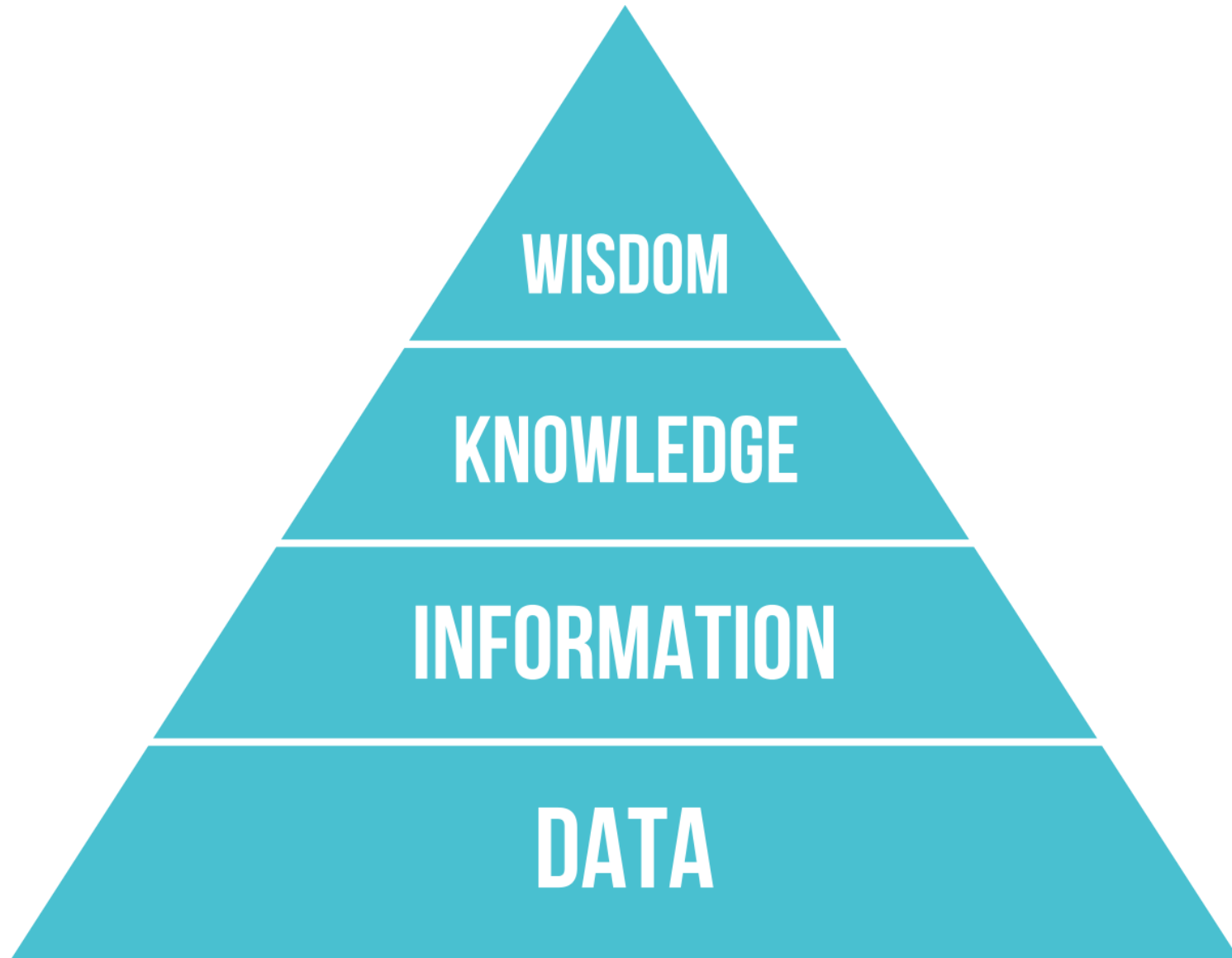
- **Clear** and **complete** notes to support **world class** care
- Accurate and **concise** – everything that's needed and nothing more
- Evidence of the highest **quality** and accurate **complexity of the care** provided
- Supports the **joy of practice** for both the reader and the author
- **Thoughtful** decision making and **clinical assessment**
- Maintains **high reliability** including **contingency and escalation plans**
- Catalyst for **continuous improvement**
- Is the **product** of **collaborative clinical care**
- Transparent and **patient-centered**
- **Consistent** across the continuum of care
- **Achieves** legal, external reporting, revenue, and regulatory obligations

5C's Grading Rubric

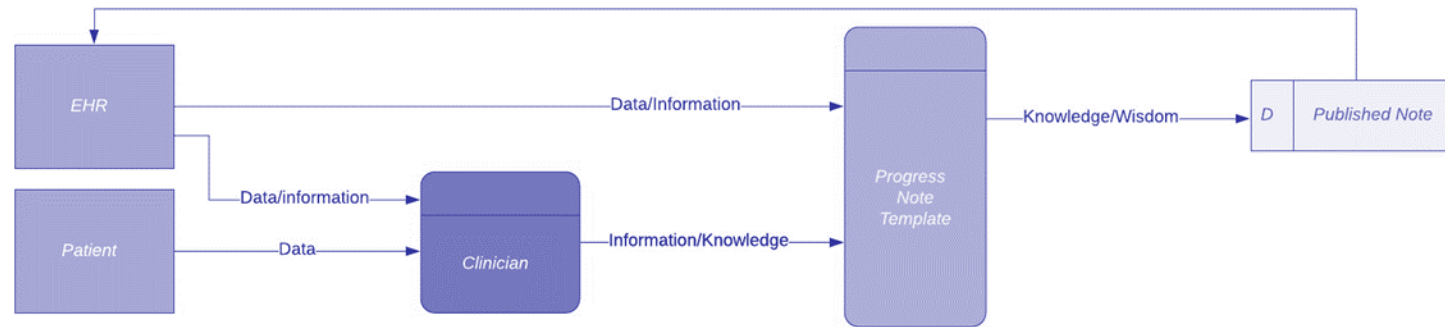
"C"	Description	Scoring
COMPLETE	Does this note contain the following elements? Appropriate Hx Appropriate Exam Appropriate Plan	Yes/No/Partial
CLINICAL ASSESSMENT & REASONING	Does this note contain a differential diagnosis? OR Does the note commit to a diagnosis and comment if the patient is same, better or worse?	Yes/No/Partial
CONTINGENCY (Discharge) PLANNING	Does this note contain specific contingency planning to help the team plan next steps?	Yes/No/Partial
CONCISE	Does this note contain only pertinent data/information?	Yes/No/Partial
CORRECT	Is this note internally correct and consistent?	Yes/No/Partial



Template



Pre-Intervention



Select Note Type & New Template is Defaulted

My Note Tag Share w/ Patient Details

Type: 1 Service: 2 Date of Service: 3/9/2021 07:02 PM

Co

Insert SmartText

Pend Sign Cancel

My Note Tag Share w/ Patient Details

Physical Exam

Service: Date of Service: 3/9/2021 07:02 PM

Cosign Required

Insert SmartText

NYU Langone Progress Note

Subjective & Notable Events
Hospital Day: 10. ***
[Summary Overview](#) [Vitals](#) [Event Log](#) [Notes](#) [Chart Review](#) [Comprehensive Flowsheet](#) :1152101

Physical Exam

Last Vitals: Blood pressure 140/94, pulse (!) 109, temperature 37 °C (98.6 °F), temperature source Oral, resp. rate 18, height 1.727 m (5' 8"), weight 81.1 kg (178 lb 12.7 oz), SpO2 96 %
Lines and Drains: ***
[Summary Overview](#) [Vitals](#) [I&O](#) [Lines & Drains](#) [Comprehensive Flowsheet](#) :1152101

Laboratory Test & Imaging Review
Notable findings: ***
[Summary Overview](#) [Results Review](#) [Imaging](#) [Chart Review](#) [Comprehensive Flowsheet](#) :1152101

Assessment & Plan
Assessment: ***

Plan:

{Problem Based Plan Links (Optional):30846704}
Diet: ***

Pend Sign Cancel

Use EpicAct Links to Prevent Note Bloat

The image shows a screenshot of the Epic EMR interface, divided into two main sections: an Event Log on the left and a My Note editor on the right.

Event Log (Left Panel):

- Header:** Yesterday Default Filters, 3/8/2021, Go to Now
- 2245 Vital Signs:** Taylor Nicole Loesch, RN. BP: 140/94, Temp: 37 °C (98.6 °F), Temp Source: Oral, Heart Rate: 109 !, Heart Rate Source: Monitor, BP Location: Left arm, BP Method: Automatic, Patient Position: Sitting.
- 2235 Output (mL):** Taylor Nicole Loesch, RN. Urine: 100 mL.
- 2130 Oxygen Therapy:** Taylor Nicole Loesch, RN. SpO2: 96 %, O2 Device: None (Room air), Pulse Oximetry Type: Continuous.
- 2130 Cardiac Rhythm:** Taylor Nicole Loesch, RN. Rhythm: sinus tachycardia.
- 2130 Positioning:** Taylor Nicole Loesch, RN. Body Position: sitting up in bed, Head of Bed (HOB): HOB at 30-45 degrees, Positioning/Transfer Devices: in use;pillows.
- 2130 Pain Assessment:** Taylor Nicole Loesch, RN. Pain Score: 7 - Seven, Pain Location: Rib cage, Pain Orientation: Right, Pain Intervention(s): Medication (See eMAR), Pain Radiating Towards: N/A, Pain Descriptors: Sharp, Pain Onset: On-going, Pain Duration: Continuous, Response to Interventions: Will reassess, Effect of Pain on Daily Activities: Unable to lay flat, Multiple Pain Sites: No, Pain Type: Chronic pain, Progression: Not changed, Pain Assessment Scale: No/denies pain, Patient stated agreed upon functional goals & pain intensity reduction: Sit comfortably;Move out of bed;Sleep.

My Note (Right Panel):

- Header:** My Note, Tag, Share w/ Patient, Details
- Section:** Physical Exam
- Service:** Medicine, General, Date of Service: 3/9/2021, 07:02 PM
- Options:** Cosign Required
- Rich Text Editor:** Includes formatting tools (bold, italic, link, undo, redo, insert smart text, etc.).
- Note Content:**
 - NYU Langone Progress Note**
 - Subjective & Notable Events**
 - Hospital Day: 10: *****
 - Links:** {Summary Overview Vitals Event Log Notes Chart Review Comprehensive Flowsheet :1152101}
 - Physical Exam**
 - Last Vitals:** Blood pressure 140/94, pulse (!) 109, temperature 37 °C (98.6 °F), temperature source Oral, resp. rate 18, height 1.727 m (5' 8"), weight 81.1 kg (178 lb 12.7 oz), SpO2 96 %.
 - Lines and Drains: *****
 - Physical Exam**
 - Links:** {Summary Overview Vitals I&O Lines & Drains Comprehensive Flowsheet . :1152101}
 - Laboratory Test & Imaging Review**
 - Notable findings: *****
 - Links:** {Summary Overview Results Review Imaging Chart Review Comprehensive Flowsheet :1152101}
 - Assessment & Plan**
 - Assessment: *****
 - Plan:**
 - Links:** {Problem Based Plan Links (Optional):30846704}
 - Diet: *****
- Footer:** Pend, Sign, Cancel

A yellow arrow points from the top right towards the link in the note content.

Improve Navigation with Collapsing Sections

Jonah Feldman Progress Notes Creation Time: 12/22/2020 3:25 PM
Medicine, Cardiology Addendum

Revision History ⌵

[Expand All](#) [Collapse All](#)

NYU Langone Progress Note ☰

Subjective & Notable Events ⌵

Physical Exam ⌵

Laboratory Test & Imaging Review ⌵

Assessment & Plan ⌵

Improve Navigation with Collapsing Sections

Jonah Feldman Progress Notes Creation Time: 12/22/2020 3:25 PM
Medicine, Cardiology Addendum

Revision History ⌵

[Expand All](#) [Collapse All](#)

NYU Langone Progress Note ☰

Subjective & Notable Events ⤴ Expand by Default

Subjective: Abdominal pain improving rated 4/10. No sensation of f/c. Now with 2 soft bm daily. No cp/sob/lightheadedness.
Notable Events - Hospital Day: 42: Had episode of hypotension this am with bp 84/52 HR -88. Asymptomatic, found on routine vitals. Responded to 500 cc NS bolus, now SBP stable 120s-150s.

Physical Exam ⌵

Laboratory Test & Imaging Review ⌵

Efficiently Document Discharge Milestones & Contingency Plans

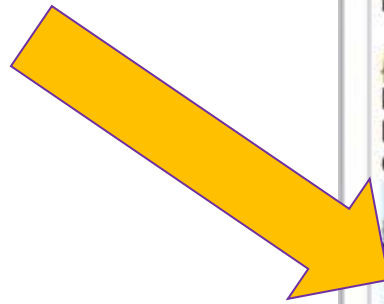
Discharge Milestones & Contingency Planning

{Example Milestones & Contingency Planning (Optional):48313}

Expected Date of Discharge: {No Expected Discharge Date/Time recorded in this visit.
[Click here to document](#). Then right-click and refresh this link to display the data
:304151008}

{[Discharge Navigator](#) [Advance Care Planning](#) [Expected Disch Date](#) :1152101}

Promote Critical Thinking with Patient Specific Disappearing Tips



My Note **Incomplete** Tag Share w/ Patient Details

Progress Notes 7:00 PM

Physical Exam

Service: Date of Service: 3/11/2021 07:00 PM

Cosign Required

★ **B** abc ↶ ↷ + Insert SmartText ↶ ↷ ↺ ↻ 🔊 👤

Assessment & Plan

Assessment: ***

Plan:

{Problem Based Plan Links (Optional):30846704}

Diet: ***

DVT: ***

Communicated with: ***

[Summary Overview](#) [Problem](#) [Meds](#) [Notes](#) [Chart Review](#) [Comprehensive Flowsheet](#) :1152101

Discharge Milestones & Contingency Planning

{Patient has a planned surgical procedure. Please provide a plan for anticoagulation in the periop and postop period. :1152101}

{Example Milestones & Contingency Planning (Optional):48313}

Expected Date of Discharge: 3/11/2021 12:00 PM

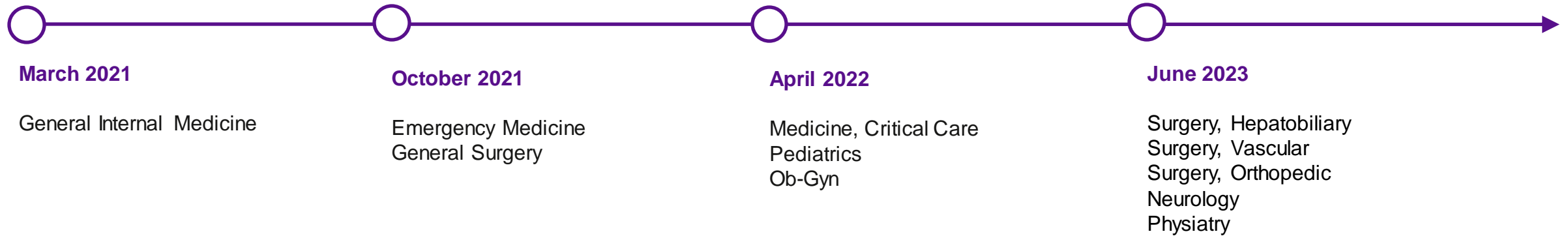
[Discharge Navigator](#) [Advance Care Planning](#) [Expected Disch Date](#) :1152101

⏸ Pend ✓ Sign ✗ Cancel



Results

Project Timeline



Dashboard

Template Utilization

Utilization Summary

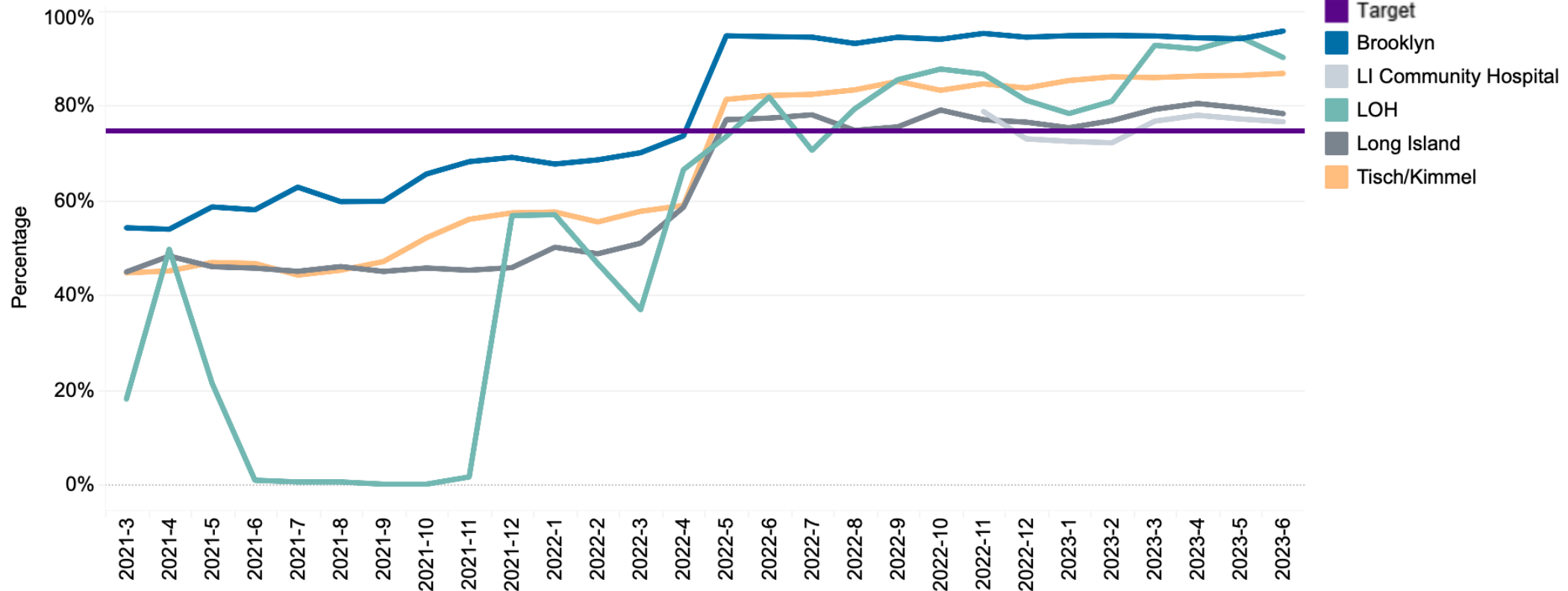
Provider Utilization

AI Audit Tool

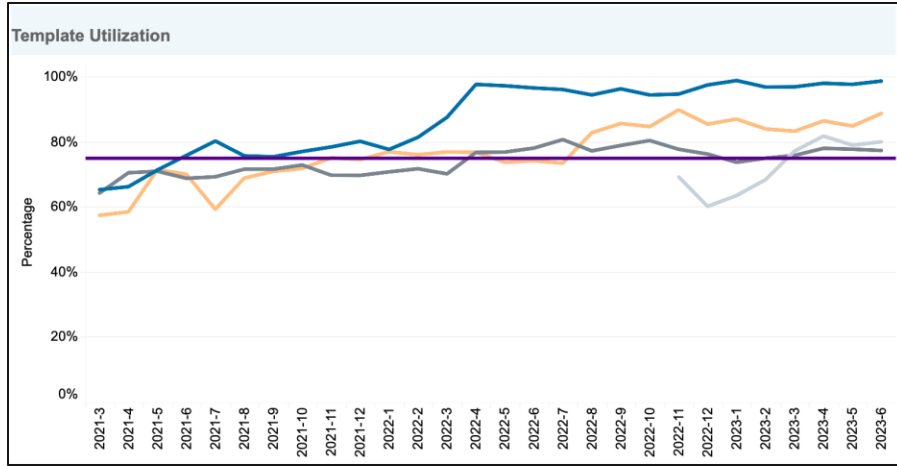
References

Last Updated: 6/21/2023
Refreshed on Wednesdays

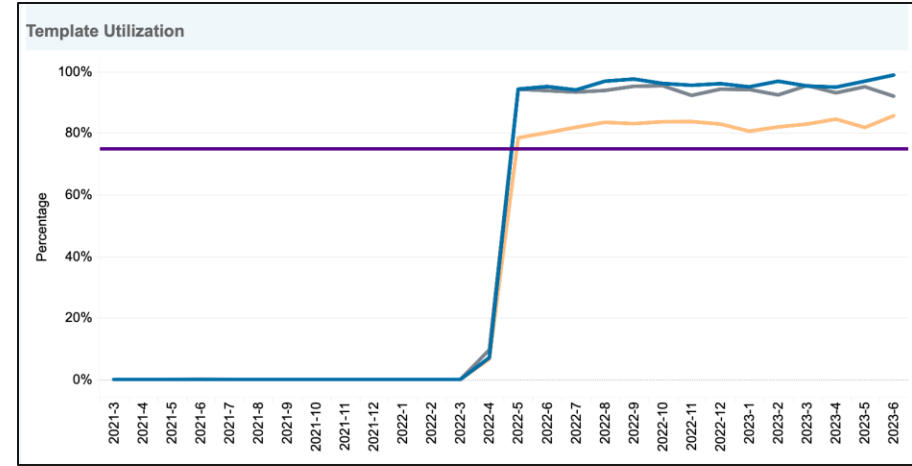
Template Utilization



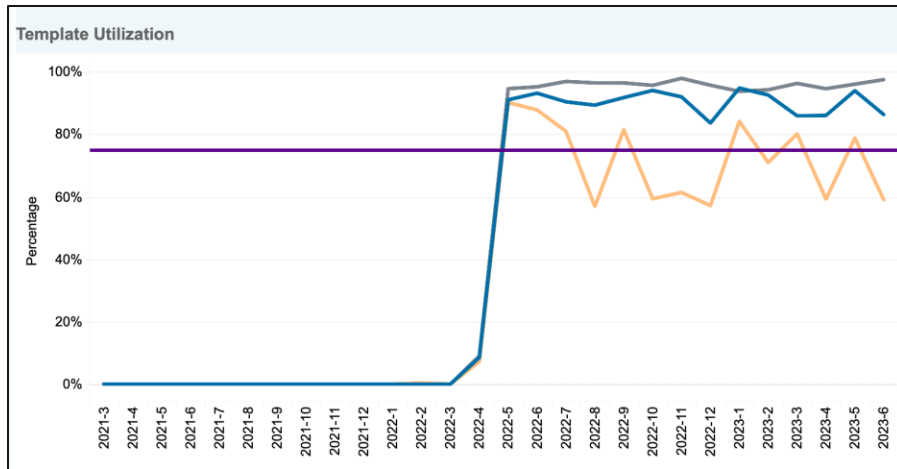
General Medicine



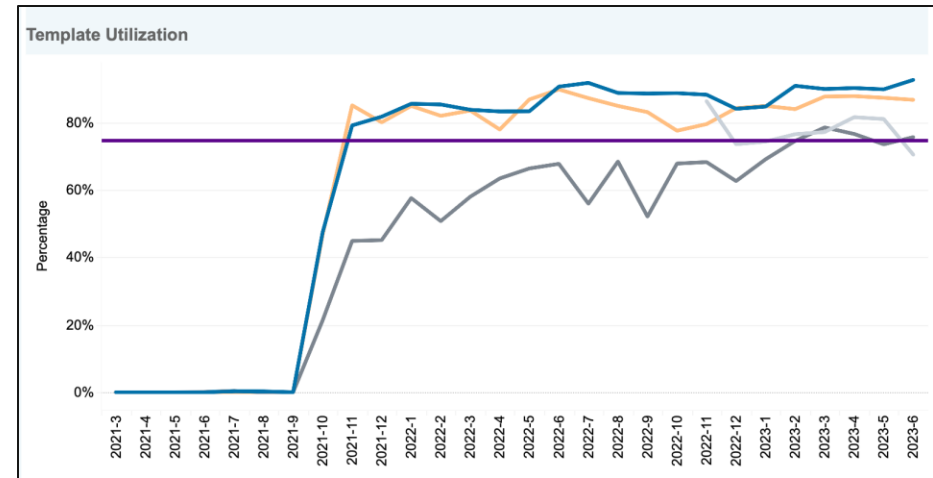
Pediatrics, PICU, CCVCU, NICU, Nursery



OB (H&P)



Surgery



Template Utilization Summary

Level 1

Level 2

Level 3

Author Ser... ▾

Provider Type ▾

Select One ▾

Author Service	Provider Type	Select One	2023-6	2023-5	2023-4	2023-3	2023-2	2023-
Emergency Medicine	Fellow		100%	100%	100%	100%	100%	100%
	Medical Student							
	Nurse Practitioner		100%	100%	100%	100%	100%	100%
	Physician		89%	88%	88%	89%	89%	90%
	Physician Assistant		98%	98%	97%	97%	97%	97%
	Resident		100%	100%	100%	100%	100%	100%
Medicine, Critical Care	Coordinator							
	Fellow		5%	14%	40%	5%	0%	1%
	Medical Student			100%		100%	100%	5%
	Nurse Practitioner		100%	100%	98%	97%	96%	96%
	Physician		51%	51%	60%	52%	68%	47%
	Physician Assistant		91%	87%	95%	97%	88%	87%
	Resident		68%	71%	73%	85%	70%	73%

Date of Service
 3/8/2021 1/28/2023

Facility
 Long Island

Attributed Unit
 LI NW 1 HP 1500

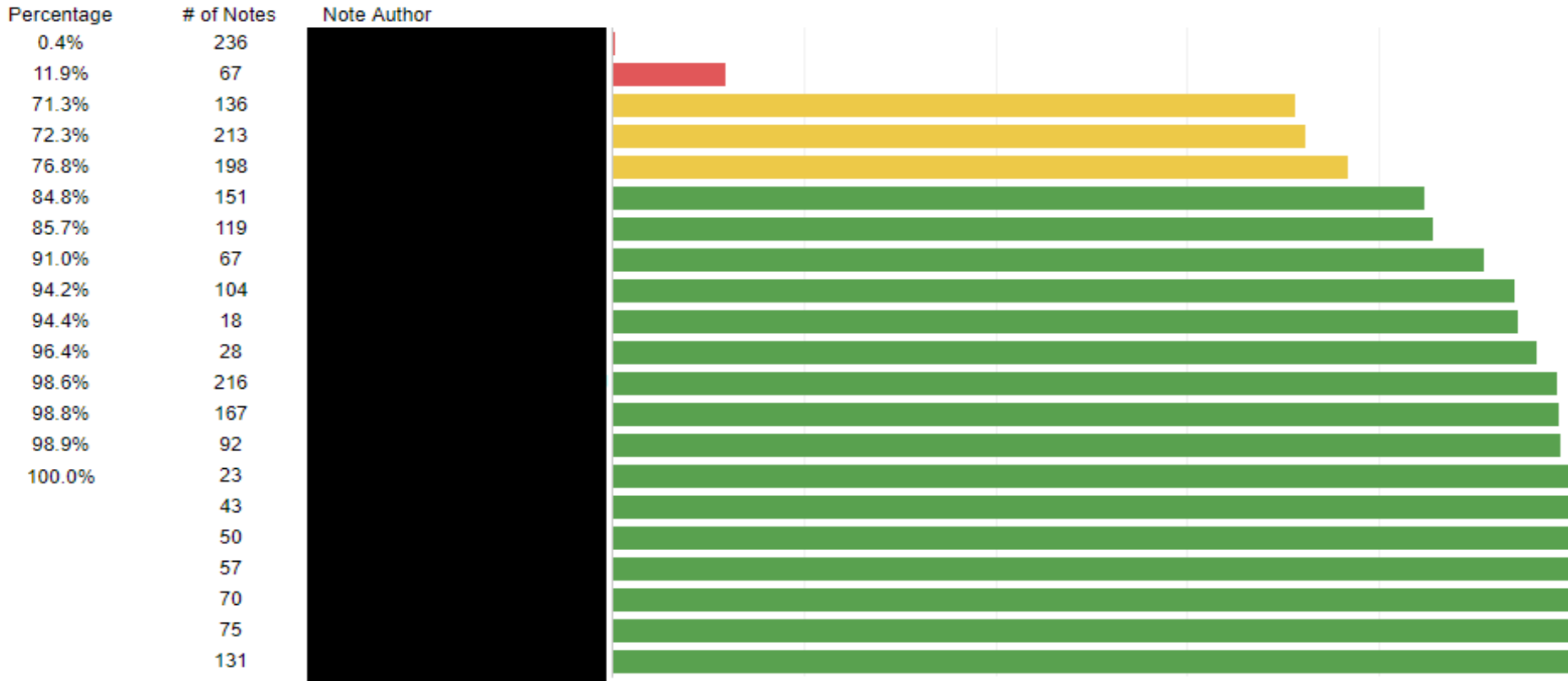
Author Service
 (All)

Note Type
 (All)

Provider Type
 Resident

Note Author
 (Multiple values)

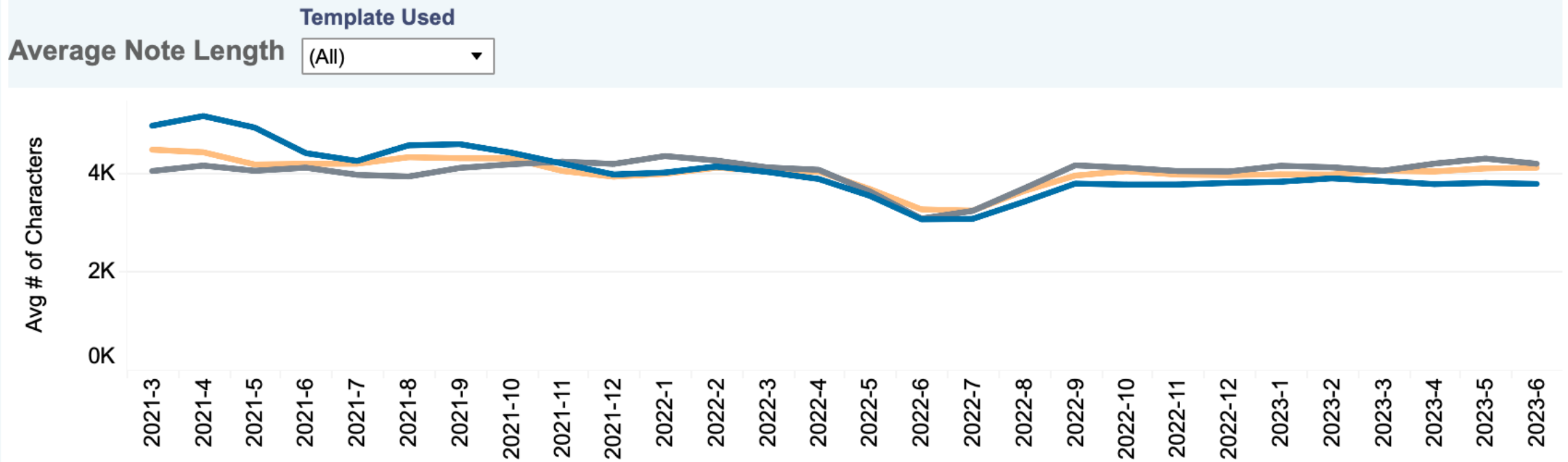
Provider Utilization


■ < 50%

■ 50% - 79%

■ ≥ 80%

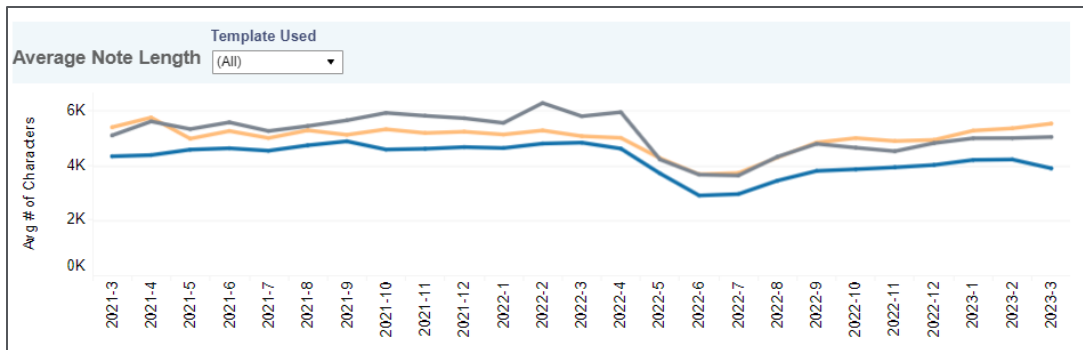
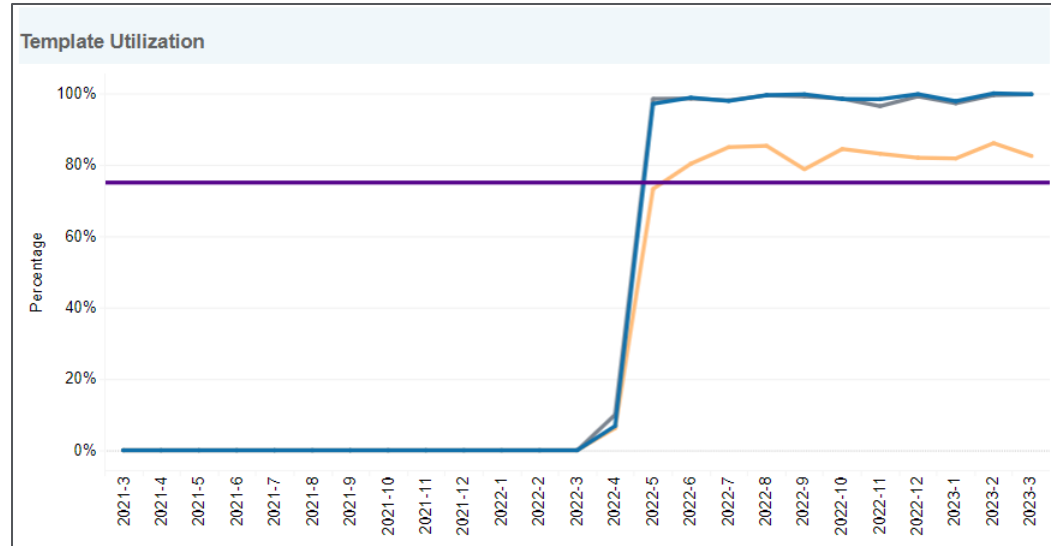
Average Note Length- All services



Pediatrics- Template utilization and note length

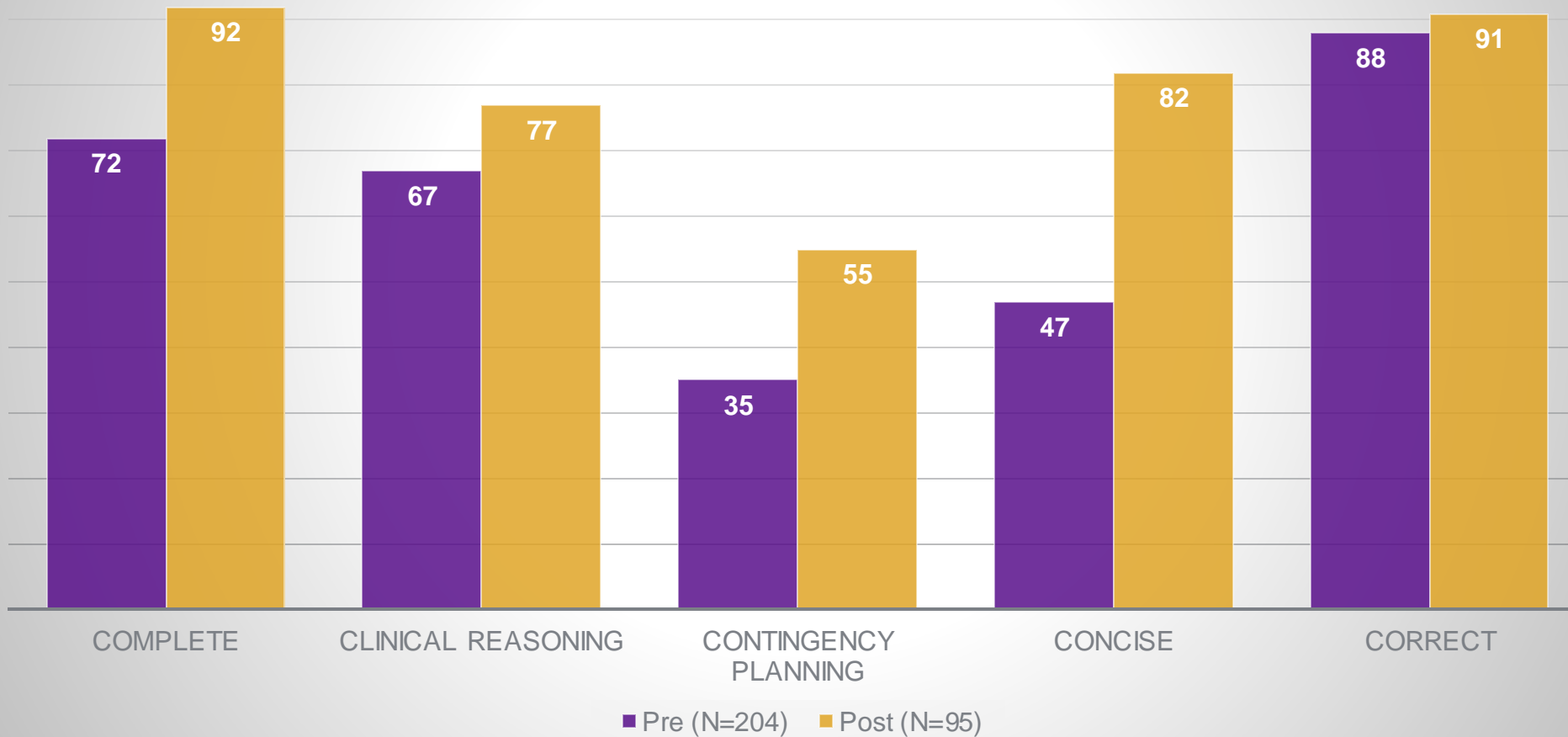
All services

- Pediatrics
- PICU
- NICU
- CCVCU
- Nursery



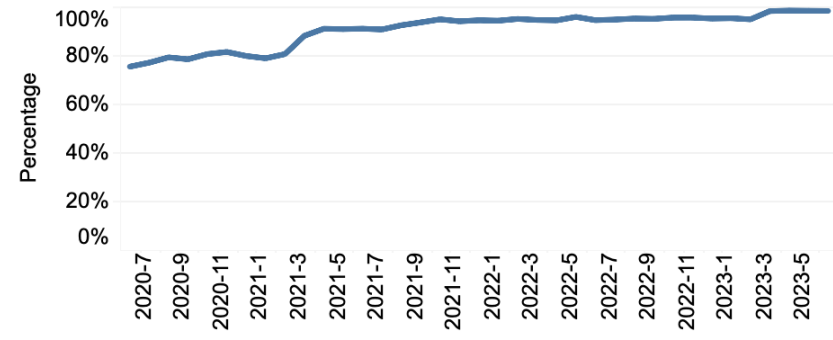
Service	Average character count pre-intervention (Jan 2022 to April 2022)	Average character count post-intervention (May 2022 to Dec 2022)	% Reduction in average character count
General Pediatrics	5691	4362	26%
Neonatology	4396	4097	7%
Nursery	4102	3112	27%
Pediatric Critical Care	9608	6429	40%

% Improvement in Quality of Pediatric Progress Notes as measured by 5C Rubric

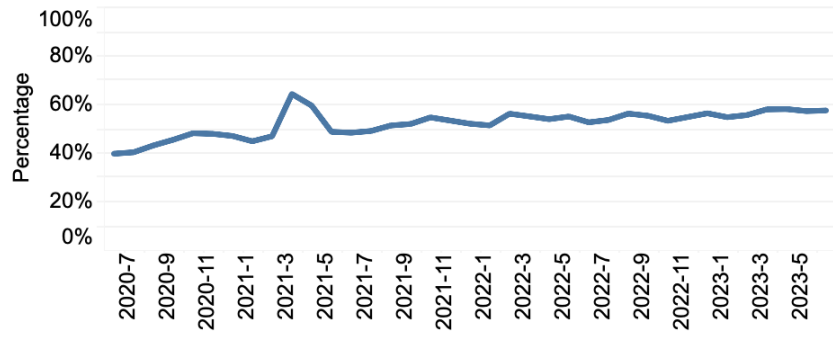


	p-value
Complete	0.0001
Clinical Reasoning	0.088
Contingency Planning	0.0011
Concise	<0.0001
Correct	0.4806

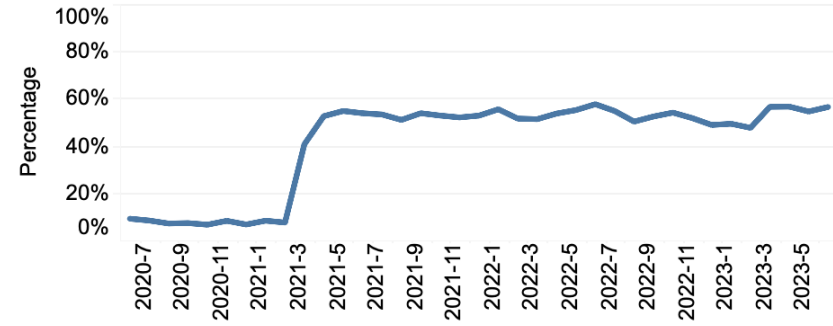
Notes w/ Clinical Reasoning and Assessment



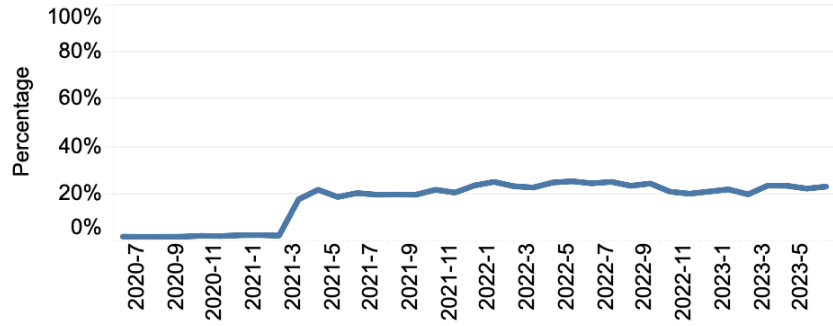
Complete Notes



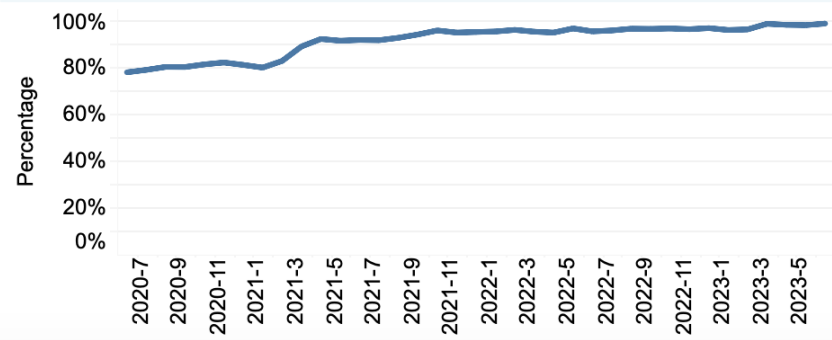
Concise Notes



Contingent Notes

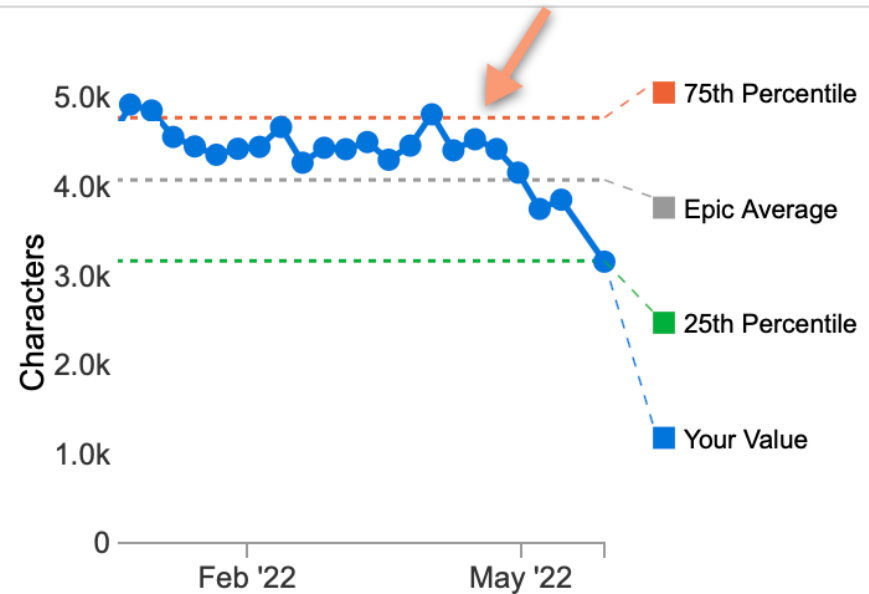


Correct Notes

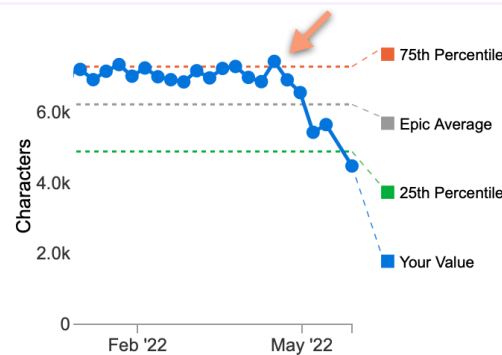


Hyperlink Enabled Templates Reduce Note Bloat in General Medicine, Surgery, Pediatrics, OB-GYN, MICU

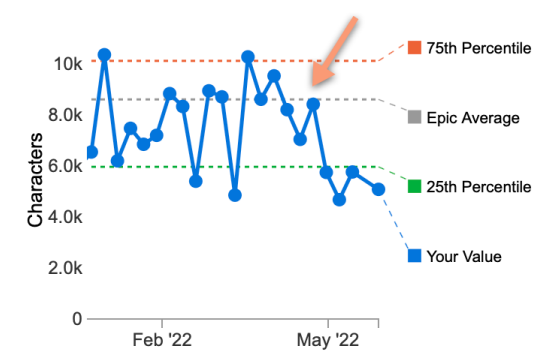
Avg Note Length Before and After Novel Template Deployment
General Pediatrics H&Ps



Avg Note Length OB-GYN H&Ps



Avg Note Length MICU H&Ps



Current Working on...

- Training Machine Learning models to grade notes
- Incorporating dynamic documentation to facilitate HAC related documentation (VTE, CLABSI etc.)
- Improving capture of comorbidities and medical complexity
- Ongoing assessment, evaluation, feedback of templates for optimization

Lessons Learned

- **Executive leadership** oversight, feedback, and decision making is required
- Establishing documentation **best practice guidelines** is key
- Templates must **reduce workload** for both the author AND the reader
- Improving medical documentation is an **iterative** process
- Standardization in medical documentation leads to opportunities to **improving other quality initiatives** including hospital acquired conditions and discharge planning.

Team

- Committee Leads:

Joseph Weisstuch
Jonah Feldman
Adam Goodman

- Project Manager:

Theresa Gombar

- Committee Members:

Nicole Adler
Yindalon Aphinyanaphongs
Jonathan Austrian
Sam Barzideh
Cherisse Berry
Joseph Bosco
Brian Bosworth
Neil Busis
Roland Casem
Eesha Chakravartty
Wai Sha (Sally) Cheung
Chenouda
Ilseung Cho
Arun Chopra
Jeffrey Fine
Benedict Guzman
Katherine Hochman
Hye Heo

Gavriil Ilizarov
Edward Iturrate
Ricardo Jacquez
Ulka Kothari
Britta Kumley
Rachael Laumann
Dilshad Marolia
Marwa Moussa
Hardev (Dave) Randhawa
Ashley Roman
Archana Saxena
Silas Smith
Paul Testa
Jose Torres
Nilufar Tursunova
Akuezunkpa Ude
Erwin Wang
Jonathan Whiteson
Timmy Zhu



Thank you