

EHR COVID-19 Symptom Tracker Flowsheet: A Game Changer for Nursing Follow Up

South Boston Community Health Center

Cheralyn Johnson, FNP-BC, IA

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Boston had a surge of COVID-19 cases starting in mid-April, with the highest prevalence of cases being in Suffolk County, where our community health center is located. In mid-March, we transitioned to mostly Telehealth, and designated the part of our building with the best ventilation to see only patients with what we called “ILI” (Influenza-Like Illness) symptoms. Quickly, it became clear how little we knew about the many pathways of COVID-19 courses of illness, and that calling to check on patients regularly and catch decompensating symptoms early for appropriate hospital referral was our best intervention as an outpatient setting. Under the guidance of our strong Nursing leadership, our amazing Nurses stepped up to the plate and began calling patients every 1-2 days, depending on risk factors, according to the best available follow-up guidance from our affiliate hospital, Boston Medical Center.

Because COVID-19 testing supplies were so limited in the beginning, we also knew we needed a way to systematically capture patients we were concerned about having COVID-19, so our Clinical Leadership pushed for every Provider and Nurse to consistently use ICD-10 codes to identify patients with Exposure to COVID-19, Suspected COVID-19, or Confirmed COVID-19. This allowed us to build a master report in our EHR that automated keeping an updated list of patients with any of those ICD-10 codes, or a COVID-19 test ordered, or a positive travel screening (a structured data field completed by Scheduling staff at the time of booking an appointment). Our initial workflow was for a Nurse to review this report, and for anyone who needed Follow Up, she opened an encounter, which would then stay open on the Nursing desktop until Follow Up was completed. Administrating this report and trying to organize Follow Up using this method took up this one Nurse’s whole job.


When the list of open encounters of patients who needed COVID-19 Follow Up surpassed 100, it became progressively more difficult for our Nurses to organize which patients had been called, and who was due for a call. They began to feel concerned that some patients were falling through the cracks in this lengthy list, with no good way to prioritize it.





In early April, a COVID-19 Symptom Tracker Flowsheet was built in our EHR by Cheralyn Johnson (Director of QI and Epic-certified Provider Builder) in collaboration with Dr. TJ Schuch (CIO and Epic-certified Provider Builder). On 4/13/20, our Care Management and Team Nurses began using it to help them document and track their Follow Up calls. The Flowsheet tracks Day of Symptoms, an Overall Status of Improved, Unchanged, or Worsening (patient’s perception), structured fields for specific symptoms by body system (including the absence of symptoms), Symptom Summary of Mild, Moderate, and Severe (clinician’s assessment), and Outcomes including ED Referral, Hospital Admission, ICU Admission, Intubation/Ventilation, and death.

We kept the “catch-all” master COVID-19 report workflow, but we added a 2nd more focused report to keep a current list of patients in need of COVID-19 Follow Up. During the peak, it took our Care Management Nurse about 1-2 hours a day during the peak of COVID-19 to review about 15-30 new patients and add a COVID-19 Episode to any new patients who needed COVID-19 Follow Up calls. An open COVID-19 Episode automatically lands a patient on the COVID-19 Active Tracking report, which is managed by our Team Nurses. Closing the Episode removes a patient from Active Tracking.

This is what several entries into the Flowsheet side-by-side look like:

COVID-19 SYMPTOM TRACKER FLOWSHEET HIGHLIGHTS

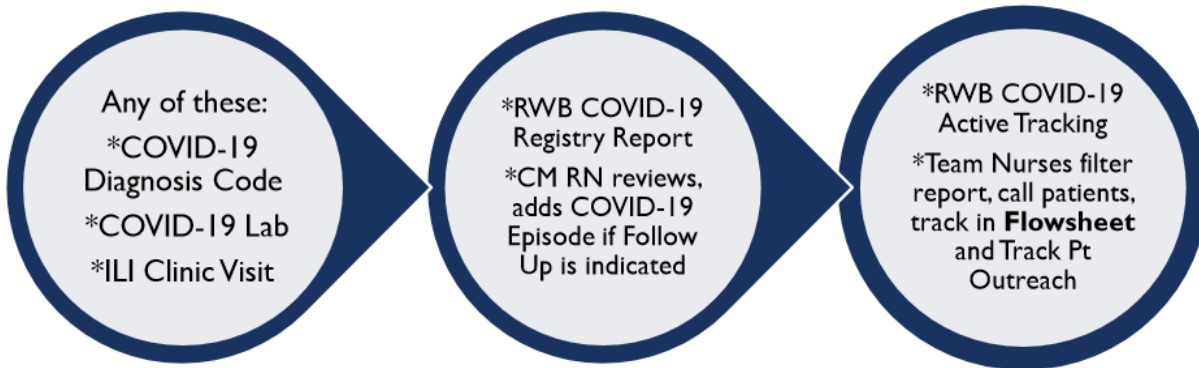
- Helps prioritize calls, identify early worsening signs, and clearing patients to return to work
- Abnormals are **(!) flagged**
- RWB Display Columns: 
- .COVID19FOLLOWUP** is available to collaborative
- Add **.docflow[491:3]** to a SmartPhrase or review in Synopsis to review side-by-side symptoms over time

	5/18/2020 11:00 AM	5/16/2020 11:00 AM	5/12/2020 6:46 PM
Day of Symptoms 	11	(!) 9	5
Overall Status Today 	Improved		
Appetite	Same as Usual		
Hydration	Same as Usual		
Urinary Frequency	Every 4-6 hours		
Last Dose Fever-Reducer?	Within the last 3 days (72 hrs)		
Constitutional			Fever
Fever			Subjective Fever
Head, Ears, Eyes, Nose, Throat	Headache;Sore throat;Congestion	Headache (better, now more intermittent)	Headache
Heart and Lungs	Cough;Shortness of breath	(!) Shortness of breath;Chest pain / pressure	Shortness of breath
Cough	(!) Acute: Productive		
Shortness of Breath	Mild (able to climb flight of stairs)	Mild (able to climb flight of stairs) (gasping at times when gets up- but resolves quickly)	
Aches and Pains	No pain		Whole body pain
Gastrointestinal	Diarrhea (x1 week)	Nausea (meds help)	
Symptom Summary 	(!) Moderate Symptoms (WITH respiratory)	(!) Moderate Symptoms (WITH respiratory)	Mild Symptoms
Disposition 	Continued Phone Monitoring	Continued Phone Monitoring	Continued Phone Monitoring

The structured data fields in the COVID-19 Flowsheet allowed us to create new report columns in our EHR's reporting platform and pull key data from the Flowsheet and other EHR data to help our Nurses prioritize outreach. With a little elbow support, our Nurses surmounted the learning curve of using the report: it was the first they had used this part of the EHR, but they caught quickly. Together with the Active Tracking report, the Flowsheet allows our Nurses to track patients' symptoms and statuses over time and prioritize Follow Up calls by those with the most serious presentations of COVID-19. Additionally, our Nurses are using a Track Patient Outreach feature to add the date when a patient is next due for a call. This is making it possible to filter the report by just the patients due for a call today. It is rewarding and reassuring to filter the report by yesterday's date and see an empty list, indicating completion of outreach due that day. We no longer worry about patients falling through the cracks. These modifications also freed up the Nurse who previously spent her whole job administering the master report and manually reviewing/prioritizing Follow Up calls to join the effort of calling patients.

The COVID-19 Flowsheet is also helping our Nurses and Providers compare side-by-side symptom progression by viewing multiple columns of Flowsheet data next to each other in our EHR. It is helping our Nurses clear patients with confidence based on CDC symptom-based clearance guidelines. But most importantly, using this process, our Nurses have caught several patients with COVID-19 in early stages of deteriorating respiratory status or other alarm signs, and made prompt referrals to the Emergency Department for patients who might not otherwise have gone in a timely manner.

Here is a high-level overview of how the process works:



The process has worked so well for us that we made our Flowsheet and Report tools available to the entire collaborative of health centers and facilities using the same EHR.

Our Nurses continue outreaching patients for COVID-19 Follow Up, though we seem to have passed through the first surge. We have worked out the kinks and surpassed the learning curve. Now with confidence in this tracking workflow, we feel ready for a second surge, whenever that may come.

When asked what they like and don't like about the workflow, here are some of the things our Nurses had to say:

- “At first, the report looks overwhelming. However, I cannot imagine tracking the recovery and progress of our COVID-19 patients without the report. Before the report nursing staff found it overwhelming and difficult to prioritize patient calls. Now, we can organize all patients by status (improved, unchanged, worsening) and symptom summary (mild, moderate, severe etc) and make sure we are calling the highest risk patients first. The flowsheet symptom tracker has also allowed us to track symptoms over time in a simple, organized way and has cut down on calls and made them more standard for each call. Being able to track when we spoke with the patient and when they are due next has also been great for organization. I would absolutely recommend this workflow to other nursing teams looking for strategies to improve their COVID-19 follow up care. It has overall cut down on time and in my opinion has improved patient care.”
- Morgan, RN
- “I think the workflow is now in a good place. I think it took some time to get there especially with the report, but now with the report being filtered by PCP and each individual nurse helping based off of teams it has become more organized. At this point as nurses we fully understand who is to be booked in Pedi vs Family vs. ILI vs. drive through testing. I really like updating the flowsheets when we call pt so we know where they were yesterday or days before and how they have changed.” – SBCHC RN
- “At first, navigating the report was challenging since it was new to our workflow in nursing. One of the most helpful tools in the report has been all the filters available to assist in prioritizing patient follow up. The workflow was also a helpful resource when following up with patients, providing clear guidance across departments on how to handle patient follow up consistently.

Ultimately, knowing your patients well and having the same people follow them allows for the best outcomes in my experience but the report and workflow are the core tools in providing COVID-19 follow up care.” – Vanessa, RN

- “I would recommend this workflow to other health centers. Overall, I find using the flowsheet to be extremely helpful when following up with patients. It allows you to see what the pt has been experiencing so you have a better picture if the patient is improving or not. It gives the RN specific symptoms to ask about to ensure they are able to triage all symptoms the pt has had, which is especially helpful if the pt reports a symptom one day, but not the next day. One flaw is that the flowsheet is not used by all staff who follow up with the pt, only the RNs. Information in the flowsheet will be missing from provider follow ups, which can be challenging if the note has not been completed.” – Carolyn, RN, MSN
- “Initially utilizing the tracking and report required an adjustment and was challenging. Having the filtering ability helped in not only organizing the patient outreach, but it also allowed us to prioritize the calls based on Pt’s symptoms which is great. The workflow was helpful to provide guidance during the calls on what symptoms should be assessed for as well as what step should follow based on those symptoms. The flow[sheet] and tracking are a useful tool in monitoring for symptoms and ensuring the right patient care is being provided to each patient.” – Lilian, RN