

Supplementary Data

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A) Template example

The template below for a plan of care is not institutionally approved by the medical institution described in this study.

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{Acute respiratory failure;} {Disclosure: The plan below is generalized; it should be read in full and individualized for each specific case (LAST UPDATED June 2023)}

Useful links:

- For patients on HFNC or at risk of requiring HFNC, please refer to University of Iowa Stead Family Children’s Hospital HFNC Guideline – Bronchiolitis
- For patients with suspected/confirmed COVID-19 infection, please refer to University of Iowa Health Care Guidance on Treatment Options for Patients with SARS-CoV-2; Appendix K: Pediatric Considerations for Treatment of COVID-19
- For patients with suspected/confirmed bacterial pneumonia, please refer to
 - o Management of Pediatric Community-acquired Bacterial Pneumonia
 - o Mycoplasma pneumonia in children and adolescents

PLAN

FEN/GI

*** *dehydration*

*At risk of poor PO intake****

*S/p ***NS bolus in ****

-PO Ad Lib general pediatric diet

-NPO*** (if respiratory distress while on HFNC)

--NG tube for gastric decompression (if NPO on HFNC)***

-IVF: D5-NS at maintenance***

-Monitor Is and Os

Cardiorespiratory

*Acute respiratory failure with hypoxemia and hypercapnia****

*Day of disease: ****

-Respiratory support:

--Low-flow NC: *** LPM, *** FiO₂, titrate as needed based on clinical exam and O₂ Sat***

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--High-flow NC: *** LPM, *** FiO₂, titrate as needed based on clinical exam and O₂ Sat***

-Continuous pulse oximetry

-Continuous telemetry*** (if on HFNC)

-Glucocorticoids: *** (Prednisolone vs prednisone vs dexamethasone) *** *** (mg/kg vs mg) for *** *** (days vs doses)

-Albuterol: *** (#) puffs *** (Q***h vs PRN Q***h)

-Continue supportive cares:

--Frequent nasal suctioning

--Nasal saline spray as needed

ID

Viral bronchiolitis

Full*** RPP positive for ***

S/p *** in OSH

-Contact and droplet precautions

-Modified airborne and contact precautions + eye protection***

-OSH blood culture collected and pending, follow results (OSH contact number ***)

Pain/Sedation/Comfort

*Objective*** fever*

Irritability

-Tylenol as needed first line for irritability/fever

-Ibuprofen as needed second line for irritability/fever

Discharge goals

-Hemodynamically stable on room air for 4-8 hours, per staff preference

-Able to maintain hydration while off IVF

”

B) Template title and approving faculty specialty

A. Reason for admission	B. Approving faculty specialty
Acetaminophen overdose	Medical toxicology
DKA managed with subcutaneous insulin	Pediatric endocrinology
DKA managed with two-bag system and intravenous insulin	Pediatric endocrinology
Hyperbilirubinemia requiring phototherapy	PHM
New-onset type I diabetes without DKA	Pediatric endocrinology
Concern for non-accidental trauma	Child protection team
Orbital cellulitis	PHM and infectious disease
Pamidronate infusion	PHM
Deep neck abscess	PHM and infectious disease
Propranolol initiation	PHM
Viral bronchiolitis	PHM
Video EEG	Pediatric neurology
DKA: Diabetic Ketoacidosis; PHM: Pediatric Hospital Medicine	

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C) Exclusion criteria

Notes excluded from all analysis (n=687; 0.7% of all notes)

- a. Blank total time, n=271
- b. Incomplete author list, n=65
- c. All notes with no resident time (blank, 0, or -1), n=78
- d. By author type, notes signed by non-physicians: n=273
 - i. Including: Nurse-ARNP, medical student, anesthesiologist, registered nurse, nursing assistant, clerk, social worker

Notes excluded from analysis for staff time (n=5056; 1.6% of all notes)

- a. All excluded notes from (1), n=687
- b. All notes signed by resident-physicians (n=3927) or fellow-physicians (n=3), n=3930
- c. All notes with no staff time (blank, 0, or -1), n=439

D) Surveys

I. [Admission note] templates

Distributed on 08/22/2022 (approximately one month prior to implementation of the intervention) to all PGY-1 pediatric residents (N = 17 in AY 22-23). The PGY-1 class was exclusively selected because we viewed this group as likely to have the most contribution to the writing of admission notes.

Eleven responses were fully completed between 08/22/2022 and 9/20/2022. A summary of the results is available in the manuscript results section, for further details on the survey or the results, please contact the corresponding author.

1. How many blue or green in-patient blocks have you completed by now (**please count the current block as complete**)?
 - a. 1
 - b. 2
2. On **average**, the amount of time (in minutes) it took me to complete one [admission note] over the last 2 blocks is:
 - a. <15 min
 - b. 15-30 min
 - c. 30-45 min
 - d. 45-60 min
 - e. 60-75 min
 - f. 75-90 min
 - g. >90 min
 - h. If possible; please "additionally" specify duration in minutes:
3. The **shortest** time (in minutes) it took me to complete an [admission note] over the last 2 blocks is:
 - a. <10 min
 - b. 10-20 min
 - c. 20-30 min
 - d. 30-40 min
 - e. 40-50 min
 - f. 50-60 min
 - g. >60 min
 - h. If possible; please "additionally" specify duration in minutes:
4. The **longest** time (in minutes) it took me to complete an [admission note] over the last 2 blocks is:
 - a. <60 min
 - b. 60-70 min
 - c. 70-80 min
 - d. 80-90 min

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- e. 90-100 min
 - f. 100-110 min
 - g. 110-120 min
 - h. >120 min
 - i. If possible; please "additionally" specify duration in minutes:
5. Please indicate your level of agreement with each of the following statements (answer options for each of the questions below were strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, and strongly agree);
- a. Over the last 2 blocks, writing [admission notes] for new admits was **easy**
 - b. Over the last 2 blocks, I was **comfortable** writing [admission notes] for new admits
 - c. Over the last 2 blocks, writing [admission notes] helped me **learn** about the presenting problem(s)
 - d. Having templates for the plan section of [admission notes] would be **helpful**

II. [Admission note] templates 6-months

Distributed on 04/26/2023 (approximately 7 months after implementation of the intervention) to all pediatric residents (N = 48 in AY 22-23). The pool of surveyed residents was expanded to include all 3 classes (PGY-1, PGY-2, and PGY-3) given a perceived wider adoption of the intervention and more varied contribution to the writing of admission notes.

Sixteen responses and one partial response were completed between 04/26/2023 and 5/4/2023. A summary of the results is available in the manuscript results section, for further details on the survey or the results, please contact the corresponding author.

1. Year of training; PGY-?
 - a. 1
 - b. 2
 - c. 3
2. For PGY-1 residents; How many blue or green in-patient blocks have you completed by now (please count the current block as incomplete)? **1**
 - a. 4
 - b. 5
 - c. 6
3. For PGY-2 residents; How many blue or green in-patient night blocks have you completed by now (please count the current block as incomplete)?
 - a. 1
 - b. 2
4. On **average**, the amount of time (in minutes) it takes me to complete one [admission note] on green or blue team is:
 - a. <15 min
 - b. 15-30 min

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- c. 30-45 min
 - d. 45-60 min
 - e. 60-75 min
 - f. 75-90 min
 - g. >90 min
 - h. If possible; please "additionally" specify duration in minutes:
5. The **shortest** time (in minutes) it took me to complete an [admission note] on green or blue team over the last 6 blocks is:
- a. <10 min
 - b. 10-20 min
 - c. 20-30 min
 - d. 30-40 min
 - e. 40-50 min
 - f. 50-60 min
 - g. >60 min
 - h. If possible; please "additionally" specify duration in minutes:
6. The **longest** time (in minutes) it took me to complete an [admission note] on green or blue team over the last 6 blocks is:
- a. <60 min
 - b. 60-70 min
 - c. 70-80 min
 - d. 80-90 min
 - e. 90-100 min
 - f. 100-110 min
 - g. 110-120 min
 - h. >120 min
 - i. If possible; please "additionally" specify duration in minutes:
7. Please indicate your level of agreement with each of the following statements (answer options for each of the questions below were strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, and strongly agree);
- a. Over the last 6 blocks, writing [admission notes] for new admits was **easy**
 - b. Over the last 6 blocks, I was **comfortable** writing [admission notes] for new admits
 - c. Over the last 6 blocks, writing [admission notes] helped me **learn** about the presenting problem(s)
 - d. Having templates for the plan section of [admission notes] was **helpful**
8. Do you use the resources/references in the templates?
- a. Never
 - b. Rarely
 - c. [Sometimes]
 - d. Often
 - e. All the time
9. Have you noticed any mistakes in the plan templates (e.g. titrate support based on clinical status rather than O2 sat) that you recall now?
Plz feel free to be vague (e.g. something wrong with the diabetes template)

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10. What can we do to improve on this project?
 - a. Add more templates
 - b. Create similar templates for [pediatric intensive care unit (PICU)] and/or [neonatal intensive care unit (NICU)]
 - c. Create templates for [history or presenting illness (HPI)] section of common presenting problems (e.g. vEEG, bronchiolitis, APAP toxicity, etc.)
 - d. Integrate the PEDPLANTEMPLATE smartchoice into the [admission note] template
 - e. Add more resources/references to the templates
 - f. Something else
11. Any specific plan templates you think we should add (e.g. newborn sepsis)?
 - a. (free text answer)
12. Would you like to help us with creating similar templates for PICU and/or NICU?
 - a. Yes for PICU
 - b. Yes for NICU
 - c. No

E) Additional results

Resident Time

Residents were the major contributors to total admission note time. Only 3% of admission notes had less than 10% of total time from residents and were therefore excluded from resident time analysis. Mean resident time spent on an admission note was reduced from 66.1 minutes (59.3, 73.6) pre-intervention to 55.1 minutes (49.8, 61.0) post-intervention without a template and 51.1 minutes (45.3, 57.6) with a template. Controlling for service and percent contribution to total note time, the use of a template resulted in a significant reduction in mean resident admission note time with an adjusted reduction of 20% (11%, 27%; $p < 0.0001$) relative to pre-intervention mean resident time, and 12% (5%, 17%; $p = 0.0001$) reduction compared to post-intervention resident time without a template. The subgroup analysis of services showed comparable results for PHM with larger reductions in mean resident time with use of templates of 28% (19%, 35%; $p < 0.0001$) compared to pre-intervention, and 15% (8%, 21%; $p < 0.0001$) versus post-intervention without a template.

Resident [admission note] Time, by resident PGY

Significant reductions in mean time spent on [admission notes] with use of template were observed for PGY-1 and PGY-3 residents, but not for PGY-2 residents. For PGY-1 and PGY-3 residents, mean [admission note] time pre-intervention was 72.7 (95% CI: 64.8, 81.5) and 42.9 (95% CI: 37.3, 49.4) minutes and post-intervention was 58.5 (95% CI: 51.0, 67.0) and 24.7 (95% CI: 19.7, 31.0) minutes with use of template compared to 66.3 (95% CI: 58.2, 75.4) and 43.5 (95% CI: 37.9, 50.1) post-intervention without a template, respectively. Controlling for service and percent contribution to total time, the adjusted mean reduction for PGY-1 and PGY-3 residents with the use of template was 20% (95% CI: 10%, 28%; $p < 0.0001$) and 29% (95% CI: 12%, 43%; $p = 0.0004$) relative to pre-intervention time and 13%

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(95% CI: 9%, 18%; $p < 0.0001$) and 25% (95% CI: 11%, 36%; $p = 0.0002$) compared to post-intervention without a template compared to post-intervention without a template.