

## Supplementary Online Content

Auger KA, Shah SS, Tubbs-Cooley HL, et al; Hospital-to-Home Outcomes Trial Study Group. Effects of a 1-time nurse-led telephone call after pediatric discharge: the H2O II randomized clinical trial. *JAMA Pediatr*. Published online July 2, 2018. doi:10.1001/jamapediatrics.2018.1482

**eTable 1.** Characteristics of Children Enrolled, not Enrolled, and Refused

**eTable 2.** Primary Discharge Diagnosis Category

**eTable 3.** Reasons for Per Protocol Exclusions by Type of Event (Protocol-Level Exclusions)

**eAppendix 1.** Bronchiolitis Nurse Telephone Call Guide

**eAppendix 2.** General Diagnoses Nurse Telephone Call Guide

**eAppendix 3.** Red Flag Templates

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. Characteristics of Children Enrolled, not Enrolled, and Refused**

		<b>Enrolled/ Randomized (N=966)</b>	<b>Not Enrolled (N=633)</b>	<b>Refused (N=229)</b>
Age (years)		2.4 (0.5, 7.8)	3.0 (0.7, 9.0)	2.0 (0.4, 6.0)
Neighborhood Poverty	<20%	697 (72.2%)	481 (76.0%)	175 (76.4%)
	≥20%	269 (27.9%)	152 (24.0%)	54 (23.6%)
Home address	Ohio	764 (79.1%)	552 (87.2%)	182 (79.5%)
	Kentucky	202 (20.9%)	81 (12.8%)	47 (20.5%)

Data shown as median (interquartile range) or percentage

**eTable 2. Primary Discharge Diagnosis Category**

<b>Diagnosis Category</b>	<b>Overall Population N=966 (%)</b>	<b>Intervention N=483 (N)</b>	<b>Control N=483 (N)</b>
Diseases of the respiratory system	29.5	152	133
Diseases of the skin and subcutaneous tissue	11.7	52	61
Certain conditions originating in the perinatal period	11.1	57	50
Diseases of the digestive system	10.2	50	49
Signs, symptoms, and ill-defined conditions and factors influencing health status	6.0	29	29
Injury and poisoning	6.0	28	30
Infectious and parasitic diseases	5.6	29	26
Diseases of the genitourinary system	5.2	28	22
Endocrine, nutritional, and metabolic diseases and immunity disorders	5.1	23	26
Diseases of the nervous system and sense organs	3.9	16	22
Diseases of the musculoskeletal system and connective tissue	3.7	15	21
Other	1.9	4	14

**eTable 3. Reasons for Per Protocol Exclusions by Type of Event (Protocol-Level Exclusions)**

	Intervention	Control
<b>INELIGIBLE AFTER RANDOMIZATION</b>		
<i>Number of Subjects*</i>	15	10
Received skilled nursing homecare	7	6
Transferred to and then discharged from non-study team service	9	4
Not discharged to home	1	0
<b>INCOMPLETE OUTCOME PHONE CALLS</b>		
<i>Number of Subjects</i>	34	30
Unable to reach	25	22
Parent declined	0	0
Call missed/not offered	0	0
Call completed outside of eligibility window	9	8
<b>INCOMPLETE NURSE INTERVENTION VISIT</b>		
<i>Number of Subjects</i>	41	N/A
Unable to reach family	22	
Family declined call	0	
Call outside window	0	
Call not offered, as patient was readmitted	5	
Call not offered, not discharged to home, receiving skilled nursing, or other reason	14	

\*Subcategories do not add to subject totals as some patients had more than one exclusion reason.

## eAppendix 1. Bronchiolitis Nurse Telephone Call Guide

### Assess child's clinical condition:

- Look at your child: How is his/her breathing – is breathing rate fast or normal?
- Does he/she appear comfortable?
- Do you notice sucking in around the ribs or belly?

### Assess and reinforce parent/caregiver understanding of the following condition concerns:

- Care and treatment following an acute hospitalization:
  - Discuss signs and symptoms of respiratory distress. Advise family that cough can last several weeks.
  - Encourage fluid intake. Review normal infant feeding.
  - Safe sleep practices (infants <1 year of age). Babies with reflux should be transferred to the crib for sleep, not kept upright in a swing or car seat.
  - Review importance of hand hygiene
  - Review follow up plan: PCP, subspecialty doctors, labs, radiology studies, etc
- Tell me how you're using the bulb suction.** Review bulb suction technique with nasal saline.
  - Take care to not to over-suction (too often, too deeply) to decrease irritation and swelling of nasal passages.
  - Limit to before meals, before bed, and as needed for difficulty breathing.
- Review signs/symptoms of dehydration can include:
  - No UOP for >8 hours or <2 wet diapers per day
  - Dark and/or strong smelling urine
  - Drinking less than ½ of typical volume
  - No tears when crying
  - Thin/sticky saliva
  - Sunken fontanel
  - Decreased activity/difficult to arouse
- Have you taken his/her temperature since discharge? Any fevers?**
  - Thermometer in home?
  - Review temperature taking skill (ideally rectal for infants)
  - Normal range (<100.4F)
  - Use of acetaminophen (if no liver problems), dose, measurement
  - Use of ibuprofen (if no kidney problems, over 6 months of age only), dose, measurement

### Assess and reinforce parent /caregiver understanding of the following medication-related items:

Was the patient on any medications at discharge?

- Yes
- No (if no, do not answer the following two questions)
- Medication Administration Reconciliation and Education (if challenging for families, advise them to bring the medications to their PCP appointment or nearest pharmacy to review with them)
  - Read me what your child's medications instructions from the bottles (if difficulty with this skill, caller should attempt to read from discharge med list and have the family verify)—compare this to the Care Plan and discharge paperwork
  - What is the medicine used to treat?
  - Describe to me how you're giving the medication(s)
- If the patient was sent home with albuterol, review the following:
  - Parent /Caregiver/Patient verbally “demonstrates” correct technique for inhaler with aerochamber (Tell me how you give the child his/her inhaler/nebulizer)
  - Assess family's understanding of how to order medications as needed

-Review cleaning of respiratory equipment (nebulizer cups, aerochamber, etc)

Does the family have all medications that were prescribed at discharge?

- Yes
- No
- Not applicable

**Review and reinforce parent / caregiver understanding of the plan for associated Red Flags:**

- Call Primary Care Provider if child:
  - Has a new fever  $>100.4^{\circ}\text{F}$  OR current fever is not trending down
  - Has trouble breathing ( Uses stomach, rib, or neck muscles to breathe or is breathing faster than 70 times per minute)that does not improve with bulb suctioning or albuterol (if prescribed)
  - Has decreased urine output ( $< 2$  wet diapers per day)
  - Has decreased oral intake (drinking less than  $\frac{1}{2}$  normal)
  - Repeatedly coughs until vomiting
  
- Call 911 if child:
  - Is unresponsive
  - Unable to catch breath
  - Is turning blue
  - Has trouble breathing that is worsening despite suctioning or albuterol (if prescribed)

## eAppendix 2. General Diagnoses Nurse Telephone Call Guide

### Assess child's clinical condition:

- Prompt family with follow up questions appropriate to patient's diagnosis

### Assess and reinforce parent/caregiver understanding of the following condition concerns:

- Care and treatment following an acute hospitalization:
  - Importance of hand hygiene
  - Identify backup care provide: determine if backup is trained
  - General home safety precautions: baths, pools, plug covers, gates near steps, lock up all meds (as indicated by age)
  - General newborn care and safety, if applicable
  - Safe sleep practices. Babies with reflux should be transferred to the crib for sleep, not kept upright in a swing or car seat.
  - Review follow up plan: Appointment with PCP, subspecialty doctors, labs, radiology studies, etc.
- Feeding (**Ask family how they prepare and store formula/breastmilk**):
  - Normal newborn feeding
  - Correct preparation of formula (watch family prepare), if applicable
  - Avoid bottle propping: Risk for aspiration, use feeding time as bonding time
  - Reflux precautions: Keep baby upright after feeds for 20-30 minutes, pace feeds, burp intermittently
  - If breastfeeding: assess how well feeds are going (how long, swallows, wake and feed, nipple assessment)
  - If taking solids, review frequency and volume of feeds
- Intake and output-signs/symptoms of dehydration can include:
  - No UOP for >8 hours or <2 wet diapers per day
  - Dark and/or strong smelling urine
  - Drinking less than ½ of typical volume
  - No tears when crying
  - Thin/sticky saliva
  - Sunken fontanel
  - Decreased activity/difficult to arouse
- Pain assessment (**Is your child having any pain or discomfort?**)
  - Review appropriate dosing and frequency for Tylenol and ibuprofen for pain
  - Evaluate for constipation/diarrhea or other side effects of pain medicines or antibiotics; if concerns, provide advice regarding constipation prevention (increased fluid intake, etc)
- Have you taken his/her temperature since discharge? Any fevers?**
  - Thermometer in home?
  - Review temperature taking skill (ideally rectal for infants)
  - Normal range (<100.4F)
  - Use of acetaminophen (if no liver problems), dose, measurement
  - Use of ibuprofen (if no kidney problems, over 6 months of age only), dose, measurement

### Assess and reinforce parent /caregiver understanding of the following medication-related items:

Was the patient on any medications at discharge?

- Yes
- No (if no, do not answer the following two questions)
- Medication Administration Reconciliation and Education (if challenging for families, advise them to bring the medications to their PCP appointment or nearest pharmacy to review with them)
  - Read me what your child's medications instructions from the bottles (if difficulty with this skill, caller should attempt to read from discharge med list and have the family verify)—compare this to the Care Plan and discharge paperwork
  - What is the medicine used to treat?

- Describe to me how you're giving the medication(s)
  
- Antibiotics (if prescribed)
  - Take all doses as ordered
  - Reinforce importance of finishing antibiotics even if patient feels better, no skipping/missing doses
  - Call PCP if rash, diarrhea or other signs of sensitivity
  
- If applicable: review rescue medications (Epipen, Benydryl, albuterol)
  - Check expiration date

Does the family have all medications that were prescribed at discharge?

- Yes
- No
- Not applicable

**Review and reinforce parent / caregiver understanding of the plan for associated Red Flags:**

- Call Primary Care Provider if child:
  - Is not acting like himself/herself
  - Has a new fever >100.4F OR current fever is not trending down
  - Has decreased urine output (< 2 wet diapers per day)
  - Has decreased oral intake (drinking less than ½ normal)
  
- Call 911 if child:
  - Becomes unresponsive
  - Turns blue
  - Is unable to catch his/her breath








eAppendix 3. Red Flag Templates




**ALTE, General, or Nonsurgical Admission on Neurosurgical Service**

**Red Flags**

**Call Primary Care Provider if your child:**

-  has a new fever higher than a 100.4F or current fever is not going down over 24 hours
-  has not peed in over 8 hours or has not had 2 wet diapers in a day
-  is drinking less than half of normal in a day
-  stops breathing for less than 20 seconds, goes limp, chokes, or gags but returns to normal without help
-  is not acting normal (more sleepy and/or less active)







**Call 911 if your child:**

-  cannot wake up when you gently shake them or call their name
-  is unable to catch their breath or stops breathing for longer than 20 seconds
-  lips turn blue





**Bronchiolitis, Croup or Pneumonia**

**Red Flags**


**Call Primary Care Provider if your child:**


-  has a new fever higher than a 100.4F or current fever is not going down over 24 hours
-  has trouble breathing (belly, rib, or neck muscles are going up and down while breathing) or is breathing faster than 70 times per minute
-  has not peed in over 8 hours or has not had 2 wet diapers in a day
-  is drinking less than half of normal in a day
-  coughs until he or she vomits
-  is unable to take medicine (antibiotics or others) as told by your doctor

**Call 911 if your child:**


-  cannot wake up when you gently shake them or call their name
-  is unable to catch their breath or stops breathing for longer than 20 seconds
-  lips turn blue
-  still has trouble breathing even after you tried suctioning or albuterol (if prescribed by doctor)


**Additional Information**

 Primary Care Provider's Name \_\_\_\_\_

 Phone Number \_\_\_\_\_

**Additional Information**

 Primary Care Provider's Name \_\_\_\_\_

 Phone Number \_\_\_\_\_