Goodman DM, Casale MT, Rychlik K, et al. Development and validation of an integrated suite of prediction models for all-cause 30-day readmissions of children and adolescents aged 0 to 18 years. JAMA Netw Open. 2022;5(11):e2241513. doi:10.1001/jamanetworkopen.2022.41513

eMethods 1. Treatment of Patients Who Died
eMethods 2. Missing Data
eMethods 3. Diagnoses
eTable 1. Primary Diagnoses, Population 6 Months and Older
eTable 2. Population Hospitalization Demographics
eTable 3. Recent Admission Model (RAM), Bivariate
eTable 4. New Admission Model (NAM), Bivariate
eTable 5. Young Infant Model (YIM), Bivariate
eTable 6. Model Performance by Area Under the Curve

This supplementary material has been provided by the authors to give readers additional information about their work.
eMethods 1. Treatment of Patients Who Died

We treated patients who died during admission differently in the derivation and validation datasets. In the derivation dataset, we included patients who died during an admission (259 deaths among 51,421 visits [0.5%]) in order to ascertain risk of readmission for the prior hospitalization, but we removed their final admission from subsequent risk prediction because risk would be zero. In the validation dataset, we retained patients who died during admission to simulate data as it would naturally populate the EHR.

eMethods 2. Missing Data

Data were missing in <5% of admissions. Missing data were categorized as ‘other’ for ethnicity/race, preferred language, insurance, principal diagnosis and surgical/medical admission. ZIP code-based variables (SES and distance to LCH) with missing values were assigned to the lower SES and furthest from LCH categories, respectively. No data were missing for sex or age; all other variables were derived from the EHR.

eMethods 3. Diagnoses

We followed a stepwise algorithm to identify the most relevant diagnostic categories:

- Step 1: For RAM and NAM, we selected the 20 most frequent diagnoses for subsequently readmitted patients.

- Step 2: We identified the 20 most frequent diagnoses for index hospitalizations in the whole cohort, reflecting the undifferentiated patient group for whom subsequent readmission risk is unknown.

- Step 3: Recognizing substantial diagnostic overlap, we identified the 11 most frequent diagnoses related to admission and readmission.

- Step 4: For YIM, and purposes of symmetry across models, we similarly grouped clinically relevant categories for admissions in the derivation data and identified the 11 most frequent diagnoses among all admissions.
**eTable 1. Primary Diagnoses, Population 6 Months and Older**

| Diagnosis Group | ICD Code | Description                                                      | ICD Code Set |
|-----------------|---------|------------------------------------------------------------------|--------------|
| Appendicitis    | K35.20  | Acute appendicitis with generalized peritonitis                   | 10           |
|                 | K35.3   | Acute appendicitis with localized peritonitis                     | 10           |
|                 | K35.33  | Acute appendicitis with peritoneal abscess                       | 10           |
|                 | K35.80  | Acute appendicitis without mention of peritonitis                 | 10           |
|                 | K35.80  | Unspecified acute appendicitan                                    | 10           |
|                 | K35.89  | Other acute appendicitan                                          | 10           |
|                 | K36     | Other appendicitan                                                | 10           |
|                 | K37     | Appendicitis, unqualified                                        | 10           |
|                 | K37     | Unspecified appendicitan                                          | 10           |
|                 | K38.1   | Appendicular concretions                                          | 10           |
|                 | K38.9   | Other and unspecified diseases of appendix                       | 10           |
|                 | J44.9   | Chronic obstructive pulmonary disease, unspecified                | 10           |
|                 | J45.20  | Mild intermittent asthma, uncomplicated                           | 10           |
|                 | J45.21  | Mild intermittent asthma with (acute) exacerbation                | 10           |
|                 | J45.22  | Mild intermittent asthma with status asthmaticus                  | 10           |
|                 | J45.30  | Mild persistent asthma, uncomplicated                             | 10           |
|                 | J45.31  | Mild persistent asthma with (acute) exacerbation                  | 10           |
|                 | J45.32  | Mild persistent asthma with status asthmaticus                    | 10           |
|                 | J45.40  | Moderate persistent asthma, uncomplicated                         | 10           |
|                 | J45.41  | Moderate persistent asthma with (acute) exacerbation              | 10           |
|                 | J45.42  | Moderate persistent asthma with status asthmaticus                | 10           |
|                 | J45.51  | Severe persistent asthma with (acute) exacerbation                | 10           |
|                 | J45.52  | Severe persistent asthma with status asthmaticus                  | 10           |
|                 | J45.901 | Unspecified asthma with (acute) exacerbation                      | 10           |
|                 | J45.902 | Unspecified asthma with status asthmaticus                       | 10           |
|                 | J45.909 | Unspecified asthma, uncomplicated                                 | 10           |
|                 | R06.2   | Wheezing                                                          | 10           |
| Diagnosis Group    | ICD Code      | Description                                                                 | ICD Code Set |
|-------------------|---------------|------------------------------------------------------------------------------|--------------|
| CNS shunt         | T82.598A      | Other mechanical complication of other cardiac and vascular devices and implants, initial encounter | 10           |
|                   | T85.01XA      | Breakdown (mechanical) of ventricular intracranial (communicating) shunt, initial encounter | 10           |
|                   | T85.09XA      | Other mechanical complication of ventricular intracranial (communicating) shunt, initial encounter | 10           |
|                   | T85.615A      | Breakdown (mechanical) of other nervous system device, implant or graft, initial encounter | 10           |
|                   | T85.695A      | Mechanical complication of nervous system device, implant, and graft           | 10           |
|                   | T85.738A      | Infection and inflammatory reaction due to nervous system device, implant, and graft | 10           |
|                   | T85.890A      | Other complications due to nervous system device, implant, and graft          | 10           |
|                   | T85.890A      | Other specified complication of nervous system prosthetic devices, implants and grafts, initial encounter | 10           |
| Dehydration / GI infection | A04.5       | Intestinal infection due to campylobacter                                       | 10           |
|                   | A04.72        | Intestinal infection due to Campylobacter                                       | 10           |
|                   | A08.4         | Viral intestinal infection, unspecified                                         | 10           |
|                   | A08.8         | Intestinal infection due to other organism, not elsewhere classified            | 10           |
|                   | E86.0         | Dehydration                                                                    | 10           |
|                   | P74.1         | Dehydration of newborn                                                          | 10           |
|                   | R19.7         | Diarrhea                                                                       | 10           |
| Fever             | R50.9         | Fever, unspecified                                                             | 10           |
| Respiratory, Lower (Bronchiolitis) | B97.4       | Respiratory syncytial virus (RSV)                                               | 10           |
|                   | B97.4         | Respiratory syncytial virus as the cause of diseases classified elsewhere       | 10           |
|                   | B97.89        | Rhinovirus infection in conditions classified elsewhere and of unspecified site | 10           |
|                   | J12.1         | Pneumonia due to respiratory syncytial virus                                    | 10           |
|                   | J12.1         | Respiratory syncytial virus pneumonia                                           | 10           |
|                   | J12.3         | Human metapneumovirus pneumonia                                                 | 10           |
|                   | J21.0         | Acute bronchiolitis due to respiratory syncytial virus                          | 10           |
|                   | J21.0         | Acute bronchiolitis due to respiratory syncytial virus (RSV)                   | 10           |
|                   | J21.1         | Acute bronchiolitis due to human metapneumovirus                               | 10           |
|                   | J21.8         | Acute bronchiolitis due to other infectious organisms                          | 10           |
|                   | J21.8         | Acute bronchiolitis due to other specified organisms                           | 10           |
| Diagnosis Group | ICD Code | Description | ICD Code Set |
|-----------------|----------|-------------|--------------|
| J21.9           | Acute bronchiolitis, unspecified | 10 |
| A37.01          | Whooping cough due to bordetella pertussis with pneumonia | 10 |
| B39.2           | Histoplasma capsulatum pneumonia | 10 |
| J09.X1          | Influenza due to identified novel influenza A virus with pneumonia | 10 |
| J10.00          | Influenza due to other identified influenza virus with unspecified type of pneumonia | 10 |
| J10.08          | Influenza due to other identified influenza virus with other specified pneumonia | 10 |
| J10.1           | Influenza due to other identified influenza virus with other respiratory manifestations | 10 |
| J11.00          | Influenza due to unidentified influenza virus with unspecified type of pneumonia | 10 |
| J11.00          | Influenza with pneumonia | 10 |
| J11.08          | Influenza due to unidentified influenza virus with specified pneumonia | 10 |
| J11.1           | Influenza due to unidentified influenza virus with other respiratory manifestations | 10 |
| J11.89          | Influenza with other manifestations | 10 |
| J12.0           | Adenoviral pneumonia | 10 |
| J12.0           | Pneumonia due to adenovirus | 10 |
| J12.2           | Parainfluenza virus pneumonia | 10 |
| J12.2           | Pneumonia due to parainfluenza virus | 10 |
| J12.89          | Other viral pneumonia | 10 |
| J12.89          | Pneumonia due to other virus not elsewhere classified | 10 |
| J12.9           | Viral pneumonia, unspecified | 10 |
| J13             | Pneumococcal pneumonia (streptococcus pneumoniae pneumonia) | 10 |
| J13             | Pneumonia due to Streptococcus pneumoniae | 10 |
| J14             | Pneumonia due to Hemophilus influenzae (H. influenzae) | 10 |
| J15.0           | Pneumonia due to Klebsiella pneumoniae | 10 |
| J15.1           | Pneumonia due to Pseudomonas | 10 |
| J15.20          | Pneumonia due to Staphylococcus, unspecified | 10 |
| J15.211         | Methicillin susceptible pneumonia due to Staphylococcus aureus | 10 |
| J15.211         | Pneumonia due to methicillin susceptible Staphylococcus aureus | 10 |
| J15.212         | Methicillin resistant pneumonia due to Staphylococcus aureus | 10 |
| J15.212         | Pneumonia due to methicillin resistant Staphylococcus aureus | 10 |
| Diagnosis Group | ICD Code | Description | ICD Code Set |
|-----------------|---------|-------------|--------------|
| Respiratory, Lower (Pneumonia), cont. | J15.4 | Pneumonia due to other streptococci | 10 |
| | J15.4 | Pneumonia due to streptococcus, group A | 10 |
| | J15.6 | Pneumonia due to other Gram-negative bacteria | 10 |
| | J15.7 | Pneumonia due to Mycoplasma pneumoniae | 10 |
| | J15.9 | Bacterial pneumonia, unspecified | 10 |
| | J15.9 | Unspecified bacterial pneumonia | 10 |
| | J18.0 | Bronchopneumonia, unspecified organism | 10 |
| | J18.1 | Lobar pneumonia, unspecified organism | 10 |
| | J18.8 | Other pneumonia, unspecified organism | 10 |
| | J18.9 | Pneumonia, organism unspecified(486) | 10 |
| | J18.9 | Pneumonia, unspecified organism | 10 |
| | J69.0 | Pneumonitis due to inhalation of food and vomit | 10 |
| | J69.0 | Pneumonitis due to inhalation of food or vomitus | 10 |
| | J80 | Acute respiratory distress syndrome | 10 |
| | J95.851 | Ventilator associated pneumonia | 10 |
| | J96.00 | Acute respiratory failure | 10 |
| | J96.00 | Acute respiratory failure, unspecified whether with hypoxia or hypercapnia | 10 |
| | J96.01 | Acute respiratory failure with hypoxia | 10 |
| | J96.20 | Acute and chronic respiratory failure | 10 |
| | J96.21 | Acute and chronic respiratory failure with hypoxia | 10 |
| | P23.9 | Congenital pneumonia | 10 |
| | P23.9 | Congenital pneumonia, unspecified | 10 |
| Respiratory, Upper | A37.90 | Whooping cough, unspecified organism | 10 |
| | J05.0 | Acute obstructive laryngitis (croup) | 10 |
| | J05.0 | Croup | 10 |
| | J06.9 | Acute upper respiratory infection, unspecified | 10 |
| | J06.9 | Acute upper respiratory infections of unspecified site | 10 |
| Diagnosis Group | ICD Code | Description                                                                 | ICD Code Set |
|-----------------|---------|-----------------------------------------------------------------------------|--------------|
| Seizure         | F44.5   | Conversion disorder with seizures or convulsions                            |              |
|                 | G40.001 | Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable, with status epilepticus | 10           |
|                 | G40.009 | Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable, without status epilepticus | 10           |
|                 | G40.011 | Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, with status epilepticus | 10           |
|                 | G40.019 | Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, without status epilepticus | 10           |
|                 | G40.101 | Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, not intractable, with status epilepticus | 10           |
|                 | G40.109 | Localization-related (focal) (partial) epileptic syndromes with simple partial seizures, not intractable, without status epilepticus | 10           |
|                 | G40.111 | Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, with status epilepticus | 10           |
|                 | G40.119 | Epilepsia partialis continua with intractable epilepsy                      | 10           |
|                 | G40.119 | Localization-related (focal) (partial) epileptic syndromes with simple partial seizures, with intractable epilepsy | 10           |
|                 | G40.201 | Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, not intractable, with status epilepticus | 10           |
|                 | G40.209 | Localization-related (focal) (partial) epileptic syndromes with complex partial seizures, not intractable, without status epilepticus | 10           |
|                 | G40.211 | Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, with status epilepticus | 10           |
| Diagnosis Group | ICD Code | Description                                                                                                                                                                                                 | ICD Code Set |
|-----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Localization   | G40.219 | Localization-related (focal) (partial) epilepsy and epileptic syndromes with complex partial seizures, with intractable epilepsy                                                                           | 10           |
|     related      | G40.219 | Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, without status epilepticus | 10           |
| Generalized     | G40.301 | Generalized idiopathic epilepsy and epileptic syndromes, not intractable, with status epilepticus                                                                                                             | 10           |
|     idiopathic   | G40.301 | Generalized idiopathic epilepsy and epileptic syndromes, not intractable, without status epilepticus                                                                                                         | 10           |
|     convulsive   | G40.309 | Generalized convulsive epilepsy without mention of intractable epilepsy                                                                                                                                   | 10           |
|     idiopathic   | G40.309 | Generalized idiopathic epilepsy and epileptic syndromes, not intractable, without status epilepticus                                                                                                         | 10           |
|     nonconvulsive| G40.311 | Generalized nonconvulsive epilepsy without mention of intractable epilepsy                                                                                                                                  | 10           |
|     idiopathic   | G40.319 | Generalized convulsive epilepsy with intractable epilepsy                                                                                                                                                | 10           |
|     convulsive   | G40.319 | Generalized idiopathic epilepsy and epileptic syndromes, intractable, with status epilepticus                                                                                                              | 10           |
|     nonconvulsive| G40.319 | Generalized nonconvulsive epilepsy with intractable epilepsy                                                                                                                                             | 10           |
|     idiopathic   | G40.401 | Epileptic grand mal status                                                                                                                                                                                  | 10           |
|     convulsive   | G40.401 | Other generalized epilepsy and epileptic syndromes, not intractable, with status epilepticus                                                                                                                | 10           |
|     idiopathic   | G40.409 | Other generalized epilepsy and epileptic syndromes, not intractable, without status epilepticus                                                                                                           | 10           |
|     convulsive   | G40.411 | Other generalized epilepsy and epileptic syndromes, intractable, with status epilepticus                                                                                                                   | 10           |
|     idiopathic   | G40.419 | Other generalized epilepsy and epileptic syndromes, intractable, without status epilepticus                                                                                                                  | 10           |
|     convulsive   | G40.419 | Other generalized epilepsy and epileptic syndromes, intractable, without status epilepticus                                                                                                                  | 10           |
|     idiopathic   | G40.801 | Other epilepsy, not intractable, with status epilepticus                                                                                                                                                  | 10           |
|     convulsive   | G40.802 | Other epilepsy, not intractable, without status epilepticus                                                                                                                                              | 10           |
|     idiopathic   | G40.802 | Other forms of epilepsy and recurrent seizures without mention of intractable epilepsy                                                                                                                   | 10           |
|     convulsive   | G40.803 | Other epilepsy, intractable, with status epilepticus                                                                                                                                                     | 10           |
|     idiopathic   | G40.804 | Other epilepsy, intractable, without status epilepticus                                                                                                                                                  | 10           |
|     convulsive   | G40.804 | Other forms of epilepsy and recurrent seizures with intractable epilepsy                                                                                                                                  | 10           |
|     Lennox-Gastaut| G40.811 | Lennox-Gastaut syndrome, not intractable, with status epilepticus                                                                                                                                     | 10           |
|     syndrome     | G40.813 | Lennox-Gastaut syndrome, intractable, with status epilepticus                                                                                                                                              | 10           |
|     convulsive   | G40.814 | Lennox-Gastaut syndrome, intractable, without status epilepticus                                                                                                                                       | 10           |
|     idiopathic   | G40.821 | Epileptic spasms, not intractable, with status epilepticus                                                                                                                                              | 10           |
|     convulsive   | G40.822 | Epileptic spasms, not intractable, without status epilepticus                                                                                                                                          | 10           |
|     idiopathic   | G40.822 | Infantile spasms without mention of intractable epilepsy                                                                                                                                                 | 10           |
|     convulsive   | G40.823 | Epileptic spasms, intractable, with status epilepticus                                                                                                                                                   | 10           |
| Diagnosis Group | ICD Code   | Description                                                   | ICD Code Set |
|-----------------|-----------|---------------------------------------------------------------|--------------|
| Seizure, cont.  | G40.824   | Epileptic spasms, intractable, without status epilepticus      | 10           |
|                 | G40.824   | Infantile spasms with intractable epilepsy                    | 10           |
|                 | G40.89    | Other seizures                                                | 10           |
|                 | G40.901   | Epilepsy, unspecified, not intractable, with status epilepticus| 10           |
|                 | G40.909   | Epilepsy, unspecified, not intractable, without status epilepticus| 10           |
|                 | G40.909   | Unspecified epilepsy without mention of intractable epilepsy  | 10           |
|                 | G40.911   | Epilepsy, unspecified, intractable, with status epilepticus   | 10           |
|                 | G40.919   | Epilepsy, unspecified, intractable, without status epilepticus| 10           |
|                 | G40.919   | Unspecified epilepsy with intractable epilepsy                | 10           |
|                 | G40.A01   | Epileptic petit mal status                                    | 10           |
|                 | G40.A09   | Absence epileptic syndrome, not intractable, without status epilepticus| 10           |
|                 | G40.B09   | Juvenile myoclonic epilepsy, not intractable, without status epilepticus| 10           |
|                 | P90       | Convulsions in newborn                                        | 10           |
|                 | R56.00    | Febrile convulsions (simple), unspecified                     | 10           |
|                 | R56.00    | Simple febrile convulsions                                    | 10           |
|                 | R56.01    | Complex febrile convulsions                                   | 10           |
|                 | R56.1     | Post traumatic seizures                                       | 10           |
|                 | R56.9     | Other convulsions                                             | 10           |
|                 | R56.9     | Unspecified convulsions                                       | 10           |
| Sickle cell     | D56.4     | Hereditary persistence of fetal hemoglobin (HPFH)             | 10           |
|                 | D57.00    | Hb-SS disease with crisis                                     | 10           |
|                 | D57.00    | Hb-SS disease with crisis, unspecified                        | 10           |
|                 | D57.01    | Hb-SS disease with acute chest syndrome                       | 10           |
|                 | D57.02    | Hb-Ss disease with splenic sequestration                      | 10           |
|                 | D57.03    | Hb-ss disease with cerebral vascular involvement              | 10           |
|                 | D57.09    | Hb-ss disease with crisis with other specified complication   | 10           |
|                 | D57.1     | Hb-SS disease without crisis                                  | 10           |
|                 | D57.1     | Other sickle-cell disease without crisis                      | 10           |
|                 | D57.1     | Sickle-cell disease without crisis                            | 10           |

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| Diagnosis Group | ICD Code   | Description                                           | ICD Code Set |
|-----------------|------------|-------------------------------------------------------|--------------|
|                 | D57.1      | Sickle-cell disease, unspecified                      | 10           |
|                 | D57.20     | Sickle-cell/Hb-C disease without crisis               | 10           |
|                 | D57.211    | Sickle-cell/Hb-C disease with acute chest syndrome    | 10           |
|                 | D57.212    | Sickle-cell/Hb-C disease with splenic sequestration   | 10           |
| Sickle cell,    | D57.213    | Sickle-cell/hb-c disease with cerebral vascular       | 10           |
| cont.           | D57.218    | Sickle-cell/hb-c disease with crisis with other       | 10           |
|                 | D57.219    | Sickle-cell/Hb-C disease with crisis                  | 10           |
|                 | D57.413    | Sickle-cell thalassemia, unspecified, with cerebral   | 10           |
|                 | D57.418    | Sickle-cell thalassemia, unspecified, with crisis     | 10           |
|                 | D57.419    | Sickle-cell thalassemia, unspecified, with crisis     | 10           |
|                 | D57.431    | Sickle-cell thalassemia beta zero with acute chest    | 10           |
|                 | D57.432    | Sickle-cell thalassemia beta zero with splenic        | 10           |
|                 | D57.433    | Sickle-cell thalassemia beta zero with cerebral       | 10           |
|                 | D57.438    | Sickle-cell thalassemia beta zero with crisis with    | 10           |
|                 | D57.439    | Sickle-cell thalassemia beta zero with crisis,        | 10           |
|                 | D57.451    | Sickle-cell thalassemia beta plus with acute chest    | 10           |
|                 | D57.452    | Sickle-cell thalassemia beta plus with splenic        | 10           |
|                 | D57.453    | Sickle-cell thalassemia beta plus with cerebral       | 10           |
|                 | D57.458    | Sickle-cell thalassemia beta plus with crisis with    | 10           |
|                 | D57.459    | Sickle-cell thalassemia beta plus with crisis,        | 10           |
|                 | D57.811    | Other sickle-cell disorders with acute chest          | 10           |
|                 | D57.812    | Other sickle-cell disorders with splenic sequestration| 10           |
|                 | D57.813    | Other sickle-cell disorders with cerebral vascular    | 10           |
|                 | D57.818    | Other sickle-cell disorders with crisis with other    | 10           |
|                 | D57.819    | Other sickle-cell disorders with crisis, unspecified  | 10           |
|                 | D57.453    | Sickle-cell thalassemia beta plus with cerebral       | 10           |

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**eTable 2. Population Hospitalization Demographics**

| Category                                                                 | Derivation Cohort N=48,019 | Validation Cohort N=17,486 |
|--------------------------------------------------------------------------|-----------------------------|-----------------------------|
| **Primary Outcome**                                                      |                             |                             |
| No subsequent admission within 30 days                                  | 40,242 (83.8)               | 14,731 (84.2)               |
| Subsequent admission within 30 days                                     | 7,777 (16.2)                | 2,755 (15.8)                |
| **Age at Admission**                                                    |                             |                             |
| Less than 2 months                                                      | 3,871 (8.1)                 | 1,393 (8.0)                 |
| 2 to 5 months                                                          | 3,127 (6.5)                 | 1,089 (6.2)                 |
| 6 to 11 months                                                         | 3,474 (7.2)                 | 1,229 (7.0)                 |
| 1 to 4 years                                                           | 13,589 (28.3)               | 5,139 (29.4)                |
| 5 to 14 years                                                          | 16,360 (34.1)               | 5,795 (33.1)                |
| 15 years or older                                                      | 7,598 (15.8)                | 2,841 (16.2)                |
| **Cardiac Critical Care Unit Admission**                                |                             |                             |
| No                                                                      | 45,733 (95.2)               | 16,947 (96.9)               |
| Yes                                                                     | 1,973 (4.1)                 | 539 (3.1)                   |
| **Emergency Dept Admittance**                                           |                             |                             |
| No                                                                      | 21,698 (45.2)               | 7,824 (44.7)                |
| Yes                                                                     | 26,321 (54.8)               | 9,662 (55.3)                |
| **Insurance**                                                           |                             |                             |
| Government²                                                             | 25,975 (54.1)               | 9,418 (53.9)                |
| Commercial³                                                             | 21,606 (45.0)               | 7,926 (45.3)                |
| Other or unspecified                                                    | 438 (0.9)                   | 142 (0.8)                   |
| 0 to 2 days                                                             | 21,266 (61.6)               | 7,547 (59.7)                |
| **Length of Stay**                                                      |                             |                             |
| 0 to 3 days                                                             | 8,027 (59.5)                | 2,740 (56.6)                |
| 3 or more days                                                          | 13,263 (38.4)               | 5,096 (40.3)                |
| 4 or more days                                                          | 5,463 (40.5)                | 2,103 (43.4)                |
| **PICU Admission, current**                                             |                             |                             |
| No                                                                      | 46,046 (95.9)               | 16,917 (56.9)               |
| Yes                                                                     | 1,973 (4.1)                 | 539 (3.1)                   |
| **Primary Care Physician Assigned**                                     |                             |                             |
| No                                                                      | 6,298 (13.1)                | 2,622 (15.0)                |
| Yes                                                                     | 41,721 (86.9)               | 14,864 (85.0)               |
| **Primary Diagnosis Category**                                          |                             |                             |
| ALTE/BRUE                                                               | 135 (0.3)                   | 64 (0.4)                    |
| Appendicitis                                                            | 926 (1.9)                   | 76 (0.4)                    |
| Asthma                                                                  | 2,964 (6.2)                 | 948 (5.4)                   |
| Cardiac                                                                 | 406 (0.8)                   | 156 (0.8)                   |
| CNS shunt                                                               | 344 (0.7)                   | 115 (0.7)                   |
| Congenital anomalies                                                    | 472 (1.0)                   | 186 (1.1)                   |
| Dehydration/GI infection                                                | 1,524 (3.2)                 | 527 (3.0)                   |
| Esophageal reflux                                                       | 132 (0.3)                   | 37 (0.2)                    |
| Fever                                                                   | 587 (1.2)                   | 223 (1.3)                   |
| Neonatal jaundice                                                       | 240 (0.5)                   | 84 (0.5)                    |
| Pyloric stenosis                                                        | 151 (0.3)                   | 48 (0.3)                    |
| Respiratory, Lower (Bronchiolitis or Pneumonia)                        | 1,326 (2.8)                 | 510 (2.9)                   |
| Respiratory, Lower (Bronchiolitis)                                      | 1,840 (3.8)                 | 486 (2.8)                   |
## Table 1: Demographic Characteristics

| Category                        | Derivation Cohort N=48,019 | Validation Cohort N=17,486 |
|---------------------------------|-----------------------------|----------------------------|
| **Respiratory, Lower (Pneumonia)** |                             |                            |
| N (%).                          | 2,437 (5.1)                 | 1,503 (8.6)                |
| **Respiratory, Upper**          |                             |                            |
| N (%).                          | 1,127 (2.3)                 | 36 (2.1)                   |
| **Seizure**                     |                             |                            |
| N (%).                          | 2,149 (4.5)                 | 680 (3.9)                  |
| **Sickle cell**                 |                             |                            |
| N (%).                          | 564 (1.2)                   | 230 (1.3)                  |
| **UTI and pyelonephritis**      |                             |                            |
| N (%).                          | 196 (0.4)                   | 60 (0.3)                   |
| **Other**                       |                             |                            |
| N (%).                          | 30,499 (63.5)               | 11,189 (64.0)              |

| **Prior Procedure**            |                             |                            |
| N (%).                          | 38,504 (80.2)               | 14,007 (80.1)              |
| **One or more select procedures** |                             |                            |
| N (%).                          | 9,515 (19.8)                | 3,479 (19.9)               |

| **Prior Utilization**        |                             |                            |
| N (%).                        | 28,717 (59.8)               | 10,587 (60.5)              |
| **1 or more**                |                             |                            |
| N (%).                        | 8,652 (18.0)                | 3,130 (17.9)               |
| **2 or more**                |                             |                            |
| N (%).                        | 3,955 (8.2)                 | 1,439 (8.2)                |
| **3 or more**                |                             |                            |
| N (%).                        | 2,157 (4.5)                 | 744 (4.4)                  |

| **Race/Ethnicity**           |                             |                            |
| N (%).                       | 8,318 (17.3)                | 3,000 (17.2)               |
| **Hispanic, Any Race**       |                             |                            |
| N (%).                       | 16,628 (34.6)               | 5,972 (34.2)               |
| **White, non-Hispanic**      |                             |                            |
| N (%).                       | 18,360 (38.2)               | 6,625 (37.9)               |
| **Other**, non-Hispanic or unknown/unspecified | 4,713 (9.8) | 1,889 (10.8) |

| **Season of Admission**      |                             |                            |
| N (%).                       | 12,682 (26.4)               | 4,482 (25.6)               |
| **Mar, Apr, May**            |                             |                            |
| N (%).                       | 12,414 (25.9)               | 4,409 (25.2)               |
| **Jun, Jul, Aug**            |                             |                            |
| N (%).                       | 11,109 (23.1)               | 3,979 (22.8)               |
| **Sep, Oct, Nov**            |                             |                            |
| N (%).                       | 11,814 (24.6)               | 4,616 (26.4)               |

| **Socioeconomic Indicator**, Education |                             |                            |
| N (%).                                | 27,562 (57.4)               | 10,028 (57.3)              |
| **Less than 90% with HS degree or higher, or unknown** |                             |                            |
| N (%).                                | 20,247 (42.6)               | 7,458 (42.7)               |

| **Socioeconomic Indicator**, Income |                             |                            |
| N (%).                              | 12,907 (26.9)               | 4,639 (26.5)               |
| **Less than $50,000 or unknown**    |                             |                            |
| N (%).                              | 35,112 (73.1)               | 12,847 (73.5)              |

| **Surgical Medical Category**      |                             |                            |
| N (%).                            | 37,297 (77.7)               | 14,346 (82.0)              |
| **Medical**                       |                             |                            |
| N (%).                            | 10,722 (22.3)               | 3,140 (18.0)               |

1. Age was aggregated into clinically relevant categories in RAM and NAM. For YIM, the age cut point was established empirically based on age distribution during initial bivariate analysis
2. Includes Blue Cross, Managed Care or other commercial insurance
3. Includes Medicare, Medicaid, ACE, CCE, Champus or other government insurance
4. Utilization is defined as an inpatient stay, observation, or ED visit. In the New Admission Model, prior utilization pertains to ED visits only, since by definition this population includes only encounters for which there is no previous hospitalization
5. Based on zip code
6. Other race includes: American Indian/Alaskan Native; Asian; Declined; Native Hawaiian/Pacific Islander; Other; Unknown
eTable 3. Recent Admission Model (RAM), Bivariate

| RAM Independent Variables                      | Estimate (SE) | OR (95% CI)       | P-Value |
|------------------------------------------------|---------------|-------------------|---------|
| **Age at Admission**                           |               |                   |         |
| 6 to 11 months                                 | 0.10 (0.09)   | 1.10 (0.92, 1.33) | 0.28    |
| 1 to 4 years                                   | -0.09 (0.07)  | 0.91 (0.80, 1.04) | 0.16    |
| 15 years or older                              | 0.17 (0.08)   | 1.19 (1.03, 1.38) | 0.02    |
| 5 to 14 years (reference)                      | 0             |                   |         |
| **Cardiac Critical Care Unit Admission**       |               |                   |         |
| Yes                                            | -0.12 (0.13)  | 0.89 (0.70, 1.14) | 0.35    |
| No (reference)                                 | 0             |                   |         |
| **Emergency Dept Admittance**                  |               |                   |         |
| Yes (reference)                                | 0.22 (0.04)   | 1.25 (1.14, 1.36) | <0.001  |
| No                                             | 0             |                   |         |
| **Insurance**                                  |               |                   |         |
| Commercial²                                    | 0.22 (0.06)   | 1.25 (1.12, 1.40) | <0.001  |
| Other or unspecified                           | -0.30 (0.29)  | 0.74 (0.42, 1.31) | 0.30    |
| Government³ (reference)                        | 0             |                   |         |
| **Length of Stay**                             |               |                   |         |
| 4 or more days                                 | 0.26 (0.04)   | 1.30 (1.19, 1.41) | <0.001  |
| 0 to 3 days (reference)                        | 0             |                   |         |
| **PICU Admission, current**                    |               |                   |         |
| Yes (reference)                                | -0.14 (0.11)  | 0.87 (0.71, 1.07) | 0.19    |
| No                                             | 0             |                   |         |
| **Primary Care Physician Assigned**            |               |                   |         |
| No                                             | 0.15 (0.11)   | 1.16 (0.95, 1.43) | 0.15    |
| Yes (reference)                                | 0             |                   |         |
| **Primary Diagnosis Category**                 |               |                   |         |
| Appendicitis                                   | -0.88 (0.37)  | 0.41 (0.20, 0.85) | 0.02    |
| Asthma                                         | -1.46 (0.16)  | 0.23 (0.17, 0.32) | <0.001  |
| CNS shunt                                      | -0.30 (0.20)  | 0.74 (0.50, 1.10) | 0.13    |
| Dehydration/GI infection                       | -0.28 (0.13)  | 0.76 (0.59, 0.97) | 0.03    |
| Fever                                          | -0.25 (0.18)  | 0.78 (0.55, 1.11) | 0.17    |
| Respiratory, Lower (Bronchiolitis)             | -0.60 (0.13)  | 0.55 (0.42, 0.71) | <0.001  |
| Respiratory, Lower (Pneumonia)                 | -0.37 (0.10)  | 0.69 (0.58, 0.84) | <0.001  |
| Respiratory, Upper                             | -0.20 (0.16)  | 0.82 (0.59, 1.13) | 0.22    |
| Seizure                                        | -0.74 (0.12)  | 0.48 (0.38, 0.60) | <0.001  |
| Sickle cell                                    | -0.32 (0.19)  | 0.73 (0.50, 1.05) | 0.09    |
| Other (reference)                              | 0             |                   |         |
| RAM Independent Variables | Estimate (SE) | OR (95% CI) | P-Value |
|---------------------------|--------------|-------------|---------|
| Prior Procedure           |              |             |         |
| One or more select procedures in the 6 months prior to admission | 1.17 (0.05) | 3.22 (2.93, 3.546) | <0.001 |
| No select procedures (reference) | 0           |             |         |
| Prior Utilization\(^4\) |              |             |         |
| 4 or more utilizations in the 6 months prior to admission | 1.02 (0.06) | 2.77 (2.47, 3.10) | <0.001 |
| 3                         | 0.63 (0.07)  | 1.87 (1.64, 2.14) | <0.001 |
| 2                         | 0.34 (0.06)  | 1.40 (1.25, 1.58) | <0.001 |
| 1 (reference)             | 0            |             |         |
| Race/Ethnicity            |              |             |         |
| Black, non-Hispanic       | -0.28 (0.08) | 0.76 (0.64, 0.89) | <0.001 |
| Hispanic, Any Race        | -0.20 (0.07) | 0.82 (0.72, 0.94) | 0.004  |
| White, non-Hispanic (reference) | 0            |             |         |
| Other\(^6\), non-Hispanic or unknown/ unspecified | -0.02 (0.10) | 0.98 (0.80, 1.20) | 0.82   |
| Season of Admission       |              |             |         |
| Dec, Jan, Feb             | 0.07 (0.06)  | 1.07 (0.95, 1.20) | 0.25   |
| Jun, Jul, Aug             | 0.02 (0.06)  | 1.03 (0.91, 1.15) | 0.68   |
| Sep, Oct, Nov             | 0.04 (0.06)  | 1.04 (0.92, 1.17) | 0.53   |
| Mar, Apr, May (reference) | 0            |             |         |
| Socioeconomic Indicator\(^5\), Education |          |             |         |
| 90%+ with High School degree or higher | 0.10 (0.06) | 1.10 (0.99, 1.23) | 0.09   |
| Less than 90% with HS degree or higher, or unknown (reference) | 0           |             |         |
| Socioeconomic Indicator\(^5\), Income |         |             |         |
| Less than $50,000 or unknown | -0.16 (0.07) | 0.86 (0.75, 0.97) | 0.02   |
| $50,000+ (reference)      | 0            |             |         |
| Surgical Medical Category |              |             |         |
| Surgical                  | -0.61 (0.07) | 0.55 (0.48, 0.63) | <0.001 |
| Medical (reference)       | 0            |             |         |

\(^1\) Age was aggregated into clinically relevant categories in RAM and NAM

\(^2\) Includes Blue Cross, Managed Care or other commercial insurance

\(^3\) Includes Medicare, Medicaid, ACE, CCE, Champus or other government insurance

\(^4\) Utilization is defined as an inpatient stay, observation, or ED visit. In the New Admission Model, prior utilization pertains to ED visits only, since by definition this population includes only encounters for which there is no previous hospitalization

\(^5\) Based on zip code

\(^6\) Other race includes: American Indian/Alaskan Native; Asian; Declined; Native Hawaiian/Pacific Islander; Other; Unknown

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### eTable 4. New Admission Model (NAM), Bivariate

| NAM Independent Variables | Estimate (SE) | OR (95% CI) | P-Value |
|---------------------------|---------------|-------------|---------|
| **Age at Admission**      |               |             |         |
| 6 to 11 months            | 0.16 (0.08)   | 1.17 (1.00,1.38) | 0.06   |
| 1 to 4 years              | -0.12 (0.06)  | 0.89 (0.79,0.99)  | 0.03   |
| 15 years or older         | 0.27 (0.06)   | 1.31 (1.15,1.48)  | <0.001 |
| 5 to 14 years (reference) |               |             |         |
| **Cardiac Critical Care Unit Admission** |               |             |         |
| Yes                       | 0.34 (0.11)   | 1.41 (1.15,1.74)  | <0.001 |
| No (reference)            |               |             |         |
| **Emergency Dept Admittance** |               |             |         |
| No                        | 0.10 (0.05)   | 1.11 (1.01,1.22)  | 0.03   |
| Yes (reference)           |               |             |         |
| **Insurance**             |               |             |         |
| Commercial²               | 0.15 (0.05)   | 1.17 (1.07,1.28)  | <0.001 |
| Other or unspecified      | -0.22 (0.26)  | 0.80 (0.50,1.33)  | 0.40   |
| Government³ (reference)   |               |             |         |
| **Length of Stay**        |               |             |         |
| 3 or more days            | 0.94 (0.05)   | 2.55 (2.33,2.80)  | <0.001 |
| 0 to 2 days (reference)   |               |             |         |
| **PICU Admission, current** |               |             |         |
| Yes                       | 0.30 (0.11)   | 1.34 (1.08,1.67)  | 0.008  |
| No (reference)            |               |             |         |
| **Primary Care Physician Assigned** |               |             |         |
| No                        | -0.21 (0.07)  | 0.81 (0.70,0.93)  | 0.003  |
| Yes (reference)           |               |             |         |
| **Primary Diagnosis Category** |               |             |         |
| Appendicitis              | -0.75 (0.17)  | 0.47 (0.34,0.66)  | <0.001 |
| Asthma                    | -0.98 (0.12)  | 0.37 (0.30,0.47)  | <0.001 |
| CNS shunt                 | 0.62 (0.23)   | 1.87 (1.20,2.92)  | 0.006  |
| Dehydration/GI infection  | -0.67 (0.15)  | 0.51 (0.38,0.68)  | <0.001 |
| Fever                     | -0.05 (0.33)  | 0.95 (0.49,1.83)  | 0.88   |
| Respiratory, Lower (Bronchiolitis) | -0.36 (0.12)   | 0.70 (0.55,0.88)  | 0.002  |
| Respiratory, Lower (Pneumonia) | -0.20 (0.10)   | 0.82 (0.67,0.997) | 0.05   |
| Respiratory, Upper        | -0.57 (0.18)  | 0.57 (0.40,0.82)  | 0.002  |
| Seizure                   | -0.51 (0.12)  | 0.60 (0.48,0.76)  | <0.001 |
| Sickle cell               | 0.57 (0.20)   | 1.77 (1.21,2.60)  | 0.004  |
| Other (reference)         |               |             |         |

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| NAM Independent Variables | Estimate (SE) | OR (95% CI) | P-Value |
|---------------------------|--------------|------------|---------|
| **Prior Procedure**       |              |            |         |
| One or more select procedures in the 6 months prior to admission | 1.05 (0.07) | 2.87 (2.51,3.28) | <0.001 |
| No select procedures (reference) | 0 |            |         |
| **Prior Utilization**     |              |            |         |
| 1 or more utilizations in the 6 months prior to admission | 0.17 (0.06) | 1.19 (1.05,1.34) | 0.005 |
| 0 (reference)             | 0            |            |         |
| **Race/Ethnicity**        |              |            |         |
| Black, non-Hispanic       | -0.24 (0.07) | 0.79 (0.69,0.90) | <0.001 |
| Hispanic, Any Race        | -0.25 (0.05) | 0.78 (0.70,0.86) | <0.001 |
| White, non-Hispanic (reference) | 0 |            |         |
| Other, non-Hispanic or unknown/unknown/unspecified | -0.27 (0.09) | 0.76 (0.65,0.90) | 0.002 |
| **Season of Admission**   |              |            |         |
| Dec, Jan, Feb             | 0.04 (0.06) | 1.04 (0.92,1.18) | 0.53   |
| Jun, Jul, Aug             | -0.09 (0.07) | 0.92 (0.80,1.05) | 0.21   |
| Mar, Apr, May             | 0.03 (0.06) | 1.03 (0.91,1.17) | 0.66   |
| Sep, Oct, Nov (reference) | 0            |            |         |
| **Socioeconomic Indicator**, Education |              |            |         |
| 90%+ with High School degree or higher | 0.20 (0.05) | 1.23 (1.12,1.34) | <0.001 |
| Less than 90% with HS degree or higher, or unknown (reference) | 0 |            |         |
| **Socioeconomic Indicator**, Income |              |            |         |
| Less than $50,000 or unknown | -0.21 (0.05) | 0.81 (0.73,0.90) | <0.001 |
| $50,000+ (reference)      | 0            |            |         |
| **Surgical Medical Category** |              |            |         |
| Surgical                  | -0.03 (0.05) | 0.97 (0.87,1.07) | 0.52   |
| Medical (reference)       | 0            |            |         |

1 Age was aggregated into clinically relevant categories in RAM and NAM
2 Includes Blue Cross, Managed Care or other commercial insurance
3 Includes Medicare, Medicaid, ACE, CCE, Champus or other government insurance
4 Utilization is defined as an inpatient stay, observation, or ED visit. In the New Admission Model, prior utilization pertains to ED visits only, since by definition this population includes only encounters for which there is no previous hospitalization
5 Based on zip code
6 Other race includes: American Indian/Alaskan Native; Asian; Declined; Native Hawaiian/Pacific Islander; Other; Unknown

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**eTable 5. Young Infant Model (YIM), Bivariate**

| YIM Independent Variables | Estimate (SE) | OR (95% CI) | P-Value |
|---------------------------|--------------|-------------|---------|
| **Age at Admission**¹     |              |             |         |
| 2 to 5 months             | 0.38 (0.08)  | 1.46 (1.25,1.71) | <0.001 |
| less than 2 months (reference) | 0          |             |         |
| **Cardiac Critical Care Unit Admission** | | | |
| Yes                       | 0.50 (0.12)  | 1.65 (1.30,2.09) | <0.001 |
| No (reference)            | 0            |             |         |
| **Emergency Dept Admittance** | | | |
| No                        | 0.32 (0.08)  | 1.38 (1.19,1.61) | <0.001 |
| Yes (reference)           | 0            |             |         |
| **Insurance**             |              |             |         |
| Commercial²               | -0.04 (0.08) | 0.95 (0.81,1.12) | 0.55 |
| Other or unspecified      | -0.85 (0.77) | 0.43 (0.10,1.92) | 0.27 |
| Government³ (reference)   | 0            |             |         |
| **Length of Stay**        |              |             |         |
| 3 or more days            | 0.65 (0.08)  | 1.92 (1.64,2.25) | <0.001 |
| 0 to 2 days (reference)   | 0            |             |         |
| **PICU Admission, current** |         |             |         |
| Yes                       | 0.67 (0.24)  | 1.95 (1.21,3.12) | 0.006 |
| No (reference)            | 0            |             |         |
| **Primary Care Physician Assigned** | | | |
| No                        | -0.03 (0.09) | 0.97 (0.81,1.16) | 0.75 |
| Yes (reference)           | 0            |             |         |
| **Primary Diagnosis Category** | | | |
| ALTE/BRUE                 | -0.31 (0.31) | 0.73 (0.40,1.34) | 0.31 |
| Cardiac                   | 0.35 (0.15)  | 1.42 (1.06,1.90) | 0.02 |
| Congenital anomalies      | -0.12 (0.16) | 0.89 (0.65,1.21) | 0.45 |
| Esophageal reflux         | 0.01 (0.27)  | 1.01 (0.60,1.72) | 0.96 |
| Fever                     | -1.09 (0.29) | 0.34 (0.19,0.59) | <0.001 |
| Neonatal jaundice         | -1.56 (0.39) | 0.21 (0.10,0.45) | <0.001 |
| Pyloric stenosis          | -0.85 (0.36) | 0.43 (0.21,0.86) | 0.02 |
| Respiratory, Lower (Bronchiolitis and Pneumonia) | -0.46 (0.11) | 0.63 (0.51,0.79) | <0.001 |
| Respiratory, Upper        | -0.69 (0.25) | 0.50 (0.30,0.83) | 0.007 |
| UTI and pyelonephritis   | -0.73 (0.29) | 0.48 (0.27,0.86) | 0.01 |
| Other (reference)         | 0            |             |         |
| **Prior Procedure**       |              |             |         |
| One or more select procedures in the 6 months prior to admission | 0.77 (0.09) | 2.17 (1.81,2.61) | <0.001 |
| No select procedures (reference) | 0            |             |         |
| **Prior Utilization⁴**    |              |             |         |
| 3 or more utilizations in the 6 months prior to admission | 1.24 (0.15) | 3.47 (2.57,4.69) | <0.001 |

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| YIM Independent Variables | Estimate (SE) | OR (95% CI) | P-Value |
|---------------------------|--------------|-------------|---------|
| Estimate (SE)             | OR (95% CI)  | P-Value     |
| 2                         | 0.95 (0.14)  | 2.60 (1.98,3.41) | <0.001 |
| 1                         | 0.47 (0.10)  | 1.61 (1.33,1.95) | <0.001 |
| 0 (reference)             | 0            | 0           | 0       |
| Race/Ethnicity            |              |             |         |
| Black, non-Hispanic       | 0.04 (0.12)  | 1.05 (0.83,1.32) | 0.71    |
| Hispanic, Any Race        | 0.03 (0.10)  | 0.97 (0.80,1.17) | 0.72    |
| White, non-Hispanic (reference) |         | 0           |         |
| Other[^6^], non-Hispanic or unknown/unspecified | -0.06 (0.14) | 0.95 (0.72,1.24) | 0.69    |
| Season of Admission       |              |             |         |
| Jun, Jul, Aug             | -0.003 (0.112) | 1.00 (0.80,1.24) | 0.98    |
| Mar, Apr, May             | -0.09 (0.11)  | 0.91 (0.74,1.13) | 0.41    |
| Sep, Oct, Nov             | 0.19 (0.10)  | 1.21 (0.99,1.49) | 0.07    |
| Dec, Jan, Feb (reference) | 0            | 0           | 0       |
| Socioeconomic Indicator[^5]^, Education |              |             |         |
| 90%+ with High School degree or higher | 0.20 (0.08)  | 1.22 (1.04,1.43) | 0.02    |
| Less than 90% with HS degree or higher, or unknown (reference) | 0 | 0 | 0 |
| Socioeconomic Indicator[^5]^, Income |              |             |         |
| Less than $50,000 or unknown | -0.06 (0.09) | 0.94 (0.79,1.13) | 0.52    |
| $50,000+ (reference)      | 0            | 0           | 0       |
| Surgical Medical Category |              |             |         |
| Surgical                  | -0.15 (0.11) | 0.86 (0.69,1.06) | 0.16    |
| Medical (reference)       | 0            | 0           | 0       |

[^1^] Age cut point was established empirically based on age distribution in YIM
[^2^] Includes Blue Cross, Managed Care or other commercial insurance
[^3^] Includes Medicare, Medicaid, ACE, CCE, Champus or other government insurance
[^4^] Utilization is defined as an inpatient stay, observation, or ED visit. In the New Admission Model, prior utilization pertains to ED visits only, since by definition this population includes only encounters for which there is no previous hospitalization
[^5^] Based on zip code
[^6^] Other race includes: American Indian/Alaskan Native; Asian; Declined; Native Hawaiian/Pacific Islander; Other; Unknown

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**eTable 6. Model Performance by Area Under the Curve**

|        | Derivation Cohort (2016-2018) | Validation Cohort (2019) |
|--------|-------------------------------|--------------------------|
| RAM    | 0.8311 (0.8241, 0.8382)       | 0.8208 (0.8086, 0.8329)  |
| NAM    | 0.7609 (0.7503, 0.7715)       | 0.6848 (0.6655, 0.7042)  |
| YIM    | 0.8033 (0.7877, 0.8189)       | 0.7558 (0.7255, 0.7860)  |