**Supplemental Appendix 1: Antibiotic Stewardship to Reduce Inappropriate Antibiotic Prescribing in Integrated Academic Health System Urgent Care Clinics**

**Appendix 1.A: Stewardship Measure Diagnoses at Northwestern Medicine by International Classification of Diseases, 10th Revision, Clinical Modification**

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| **Diagnosis Name** | **ICD-10-CM** | **Stewardship Diagnosis** |
| Mycoplasmal tracheobronchitis | A49.3 | Acute Bronchitis |
| Tracheobronchitis due to Aspergillus (CMS-HCC) | B44.89 | Acute Bronchitis |
| Bronchitis due to Staphylococcus aureus | B95.61 | Acute Bronchitis |
| Staphylococcus aureus bronchitis | B95.61 | Acute Bronchitis |
| Bronchitis due to Moraxella catarrhalis | B96.89 | Acute Bronchitis |
| Moraxella catarrhalis bronchitis | B96.89 | Acute Bronchitis |
| Acute bronchitis due to Moraxella catarrhalis | B96.89 | Acute Bronchitis |
| Acute bacterial bronchitis | B96.89 | Acute Bronchitis |
| Acute bronchitis, bacterial | B96.89 | Acute Bronchitis |
| Acute bronchiolitis due to adenovirus | B97.0 | Acute Bronchitis |
| Acute bronchitis due to human metapneumovirus (hMPV) | B97.81 | Acute Bronchitis |
| Acute bronchitis due to human metapneumovirus | B97.81 | Acute Bronchitis |
| Eosinophilic bronchitis | D72.18 | Acute Bronchitis |
| Frequent episodes of bronchitis and pneumonia | J18.9 | Acute Bronchitis |
| Acute bronchitis due to Mycoplasma pneumoniae | J20.0 | Acute Bronchitis |
| Acute bronchitis due to Mycoplasma pneumoniae | J20.0 | Acute Bronchitis |
| Acute bronchitis due to Hemophilus influenzae | J20.1 | Acute Bronchitis |
| Acute bronchitis due to Haemophilus influenzae | J20.1 | Acute Bronchitis |
| Acute bronchitis due to Hemophilus influenzae | J20.1 | Acute Bronchitis |
| Acute bronchitis due to Streptococcus | J20.2 | Acute Bronchitis |
| Acute bronchitis due to Streptococcus | J20.2 | Acute Bronchitis |
| Acute bronchitis due to pneumococcus | J20.2 | Acute Bronchitis |
| Acute bronchitis due to Streptococcus pneumoniae | J20.2 | Acute Bronchitis |
| Acute bronchitis due to coxsackievirus | J20.3 | Acute Bronchitis |
| Acute bronchitis due to coxsackievirus | J20.3 | Acute Bronchitis |
| Acute bronchitis due to parainfluenza virus | J20.4 | Acute Bronchitis |
| Parainfluenza virus bronchitis | J20.4 | Acute Bronchitis |
| Acute bronchitis due to parainfluenza virus | J20.4 | Acute Bronchitis |
| Acute bronchitis due to respiratory syncytial virus | J20.5 | Acute Bronchitis |
| Acute bronchitis due to respiratory syncytial virus | J20.5 | Acute Bronchitis |
| Acute bronchitis due to respiratory syncytial virus (RSV) | J20.5 | Acute Bronchitis |
| Respiratory syncytial virus bronchitis | J20.5 | Acute Bronchitis |
| RSV bronchitis | J20.5 | Acute Bronchitis |
| Acute bronchitis due to Rhinovirus | J20.6 | Acute Bronchitis |
| Acute bronchitis due to Rhinovirus | J20.6 | Acute Bronchitis |
| Acute bronchitis due to echovirus | J20.7 | Acute Bronchitis |
| Acute bronchitis due to echovirus | J20.7 | Acute Bronchitis |
| Acute bronchitis, viral | J20.8 | Acute Bronchitis |
| Acute viral bronchitis | J20.8 | Acute Bronchitis |
| Acute bronchitis due to other specified organisms | J20.8 | Acute Bronchitis |
| Acute bronchitis due to infection | J20.8 | Acute Bronchitis |
| Acute purulent bronchitis | J20.8 | Acute Bronchitis |
| Acute bronchitis due to human metapneumovirus (hMPV) | J20.8 | Acute Bronchitis |
| Acute bronchitis due to other specified organisms | J20.8 | Acute Bronchitis |
| Viral bronchitis | J20.8 | Acute Bronchitis |
| Acute bronchitis due to Moraxella catarrhalis | J20.8 | Acute Bronchitis |
| Acute bronchitis due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | J20.8 | Acute Bronchitis |
| Acute bronchitis due to COVID-19 virus | J20.8 | Acute Bronchitis |
| Acute bronchitis due to 2019 novel coronavirus | J20.8 | Acute Bronchitis |
| Acute bronchitis due to 2019-nCoV | J20.8 | Acute Bronchitis |
| Acute bacterial bronchitis | J20.8 | Acute Bronchitis |
| Acute bronchitis, bacterial | J20.8 | Acute Bronchitis |
| Acute bronchitis due to human metapneumovirus | J20.8 | Acute Bronchitis |
| Acute exacerbation of chronic bronchitis (CMS-HCC) | J20.9 | Acute Bronchitis |
| Bronchospasm with bronchitis, acute | J20.9 | Acute Bronchitis |
| Bronchitis, subacute | J20.9 | Acute Bronchitis |
| Bronchitis, chronic with acute exacerbation (CMS-HCC) | J20.9 | Acute Bronchitis |
| Bronchitis, acute, with bronchospasm | J20.9 | Acute Bronchitis |
| Acute or subacute tracheobronchitis | J20.9 | Acute Bronchitis |
| Tracheobronchitis, acute or subacute | J20.9 | Acute Bronchitis |
| Acute or subacute tracheobronchitis with bronchospasm or obstruction | J20.9 | Acute Bronchitis |
| Tracheobronchitis, acute or subacute, with bronchospasm or obstruction | J20.9 | Acute Bronchitis |
| Acute wheezy bronchitis | J20.9 | Acute Bronchitis |
| Acute fibrinous laryngotracheobronchitis | J20.9 | Acute Bronchitis |
| Acute infective tracheobronchitis | J20.9 | Acute Bronchitis |
| Acute bronchitis, unspecified | J20.9 | Acute Bronchitis |
| Acute bronchitis, unspecified organism | J20.9 | Acute Bronchitis |
| Acute bronchitis, unspecified | J20.9 | Acute Bronchitis |
| Acute bronchitis | J20.9 | Acute Bronchitis |
| Acute tracheobronchitis | J20.9 | Acute Bronchitis |
| Acute bronchitis with bronchospasm | J20.9 | Acute Bronchitis |
| Acute bronchitis with obstruction | J20.9 | Acute Bronchitis |
| Subacute bronchitis | J20.9 | Acute Bronchitis |
| Croupous bronchitis | J20.9 | Acute Bronchitis |
| Bronchitis, acute | J20.9 | Acute Bronchitis |
| Acute laryngotracheobronchitis | J20.9 | Acute Bronchitis |
| ALTB (acute laryngotracheobronchitis) | J20.9 | Acute Bronchitis |
| Bronchitis with bronchospasm | J20.9 | Acute Bronchitis |
| Acute noninfective bronchitis | J20.9 | Acute Bronchitis |
| Acute bronchitis with wheezing | J20.9 | Acute Bronchitis |
| Complicated acute bronchitis | J20.9 | Acute Bronchitis |
| Acute bronchitis, complicated | J20.9 | Acute Bronchitis |
| Plastic bronchitis | J20.9 | Acute Bronchitis |
| Acute bronchitis with symptoms greater than 10 days | J20.9 | Acute Bronchitis |
| Acute bronchitis with symptoms > 10 days | J20.9 | Acute Bronchitis |
| Acute bronchitis with coexisting condition requiring prophylactic treatment | J20.9 | Acute Bronchitis |
| Acute bronchitis with coexisting condition, need prophylactic therapy | J20.9 | Acute Bronchitis |
| Acute bronchitis treated with antibiotics in the past 60 days | J20.9 | Acute Bronchitis |
| Acute bronchitis, antibiotics not indicated | J20.9 | Acute Bronchitis |
| Acute bronchiolitis due to adenovirus | J21.8 | Acute Bronchitis |
| Sinobronchitis | J32.9 | Acute Bronchitis |
| Chronic sinusitis with recurrent bronchitis | J32.9 | Acute Bronchitis |
| Inflammation of trachea and bronchus | J40 | Acute Bronchitis |
| Bronchitis due to Staphylococcus aureus | J40 | Acute Bronchitis |
| Sinobronchitis | J40 | Acute Bronchitis |
| Chronic sinusitis with recurrent bronchitis | J40 | Acute Bronchitis |
| Complicated bronchitis | J40 | Acute Bronchitis |
| Bronchitis, complicated | J40 | Acute Bronchitis |
| Mycoplasmal tracheobronchitis | J40 | Acute Bronchitis |
| Infectious disorder of bronchus | J40 | Acute Bronchitis |
| Bronchitis, not specified as acute or chronic | J40 | Acute Bronchitis |
| Bronchitis in pediatric patient | J40 | Acute Bronchitis |
| Frequent episodes of bronchitis | J40 | Acute Bronchitis |
| Frequent episodes of bronchitis and pneumonia | J40 | Acute Bronchitis |
| Tracheobronchitis due to Aspergillus (CMS-HCC) | J40 | Acute Bronchitis |
| Bronchitis after surgery | J40 | Acute Bronchitis |
| Postoperative bronchitis | J40 | Acute Bronchitis |
| Bronchitis, not specified as acute or chronic | J40 | Acute Bronchitis |
| Catarrhal bronchitis | J40 | Acute Bronchitis |
| Fibrinous bronchitis | J40 | Acute Bronchitis |
| Membranous bronchitis | J40 | Acute Bronchitis |
| LTB (laryngotracheobronchitis) | J40 | Acute Bronchitis |
| Bronchitis with tracheitis | J40 | Acute Bronchitis |
| Tracheobronchitis | J40 | Acute Bronchitis |
| Laryngotracheobronchitis | J40 | Acute Bronchitis |
| Bronchitis | J40 | Acute Bronchitis |
| Wheezy bronchitis | J40 | Acute Bronchitis |
| Bronchitis due to Moraxella catarrhalis | J40 | Acute Bronchitis |
| Moraxella catarrhalis bronchitis | J40 | Acute Bronchitis |
| Eosinophilic bronchitis | J40 | Acute Bronchitis |
| Bronchitis in child | J40 | Acute Bronchitis |
| Laryngotracheobronchitis in pediatric patient | J40 | Acute Bronchitis |
| Productive bronchitis | J40 | Acute Bronchitis |
| Staphylococcus aureus bronchitis | J40 | Acute Bronchitis |
| Acute exacerbation of chronic bronchitis (CMS-HCC) | J42 | Acute Bronchitis |
| Bronchitis, chronic with acute exacerbation (CMS-HCC) | J42 | Acute Bronchitis |
| Acute bronchitis due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | U07.1 | Acute Bronchitis |
| Acute bronchitis due to COVID-19 virus | U07.1 | Acute Bronchitis |
| Acute bronchitis due to 2019 novel coronavirus | U07.1 | Acute Bronchitis |
| Acute bronchitis due to 2019-nCoV | U07.1 | Acute Bronchitis |
| Influenza due to certain identified influenza viruses | J09 | Influenza |
| Influenza due to identified novel influenza A virus | J09.X | Influenza |
| Influenza due to influenza virus, type A, porcine | J09.X2 | Influenza |
| Influenza due to avian influenza virus | J09.X2 | Influenza |
| Swine influenza | J09.X2 | Influenza |
| Swine flu | J09.X2 | Influenza |
| Influenza A/H5N1 | J09.X2 | Influenza |
| Influenza A (H5N1) | J09.X2 | Influenza |
| Influenza due to identified avian influenza virus with other respiratory manifestations | J09.X2 | Influenza |
| Avian influenzal laryngitis | J09.X2 | Influenza |
| Laryngitis due to avian influenza virus | J09.X2 | Influenza |
| Identified avian influenza | J09.X2 | Influenza |
| Respiratory infection due to avian influenza virus | J09.X2 | Influenza |
| Acute respiratory infection due to avian influenza virus | J09.X2 | Influenza |
| Avian influenzal acute respiratory infection | J09.X2 | Influenza |
| Upper respiratory infection due to avian influenza virus | J09.X2 | Influenza |
| Avian influenzal upper respiratory infection | J09.X2 | Influenza |
| Flu due to ident novel influenza A virus w oth resp manifest | J09.X2 | Influenza |
| Influenza due to identified avian influenza virus | J09.X2 | Influenza |
| Influenza dt novel influenza A | J09.X2 | Influenza |
| Influenza due to influenza a virus subtype H7N9 | J09.X2 | Influenza |
| Influenza A virus subtype H7 present | J09.X2 | Influenza |
| Flu dt avian w oth resp | J09.X2 | Influenza |
| Flu dt nvl A w oth resp | J09.X2 | Influenza |
| Influenza due to avian influenza A virus subtype H3N2 | J09.X2 | Influenza |
| Influenza due to influenza A virus subtype H5 | J09.X2 | Influenza |
| URI due to avian influenza virus | J09.X2 | Influenza |
| Avian influenza | J09.X2 | Influenza |
| Influenza due to identified novel influenza A virus with other respiratory manifestations | J09.X2 | Influenza |
| Influenza due to novel influenza A | J09.X2 | Influenza |
| Novel influenza A laryngitis | J09.X2 | Influenza |
| Novel influenza A respiratory infection | J09.X2 | Influenza |
| Novel influenza A virus influenza with respiratory manifestations | J09.X2 | Influenza |
| Influenza A virus subtype H5 asian strain detected | J09.X2 | Influenza |
| H7N9 avian influenza | J09.X2 | Influenza |
| Avian influenza with involvement of gastrointestinal tract | J09.X3 | Influenza |
| Influenza due to ident novel influenza A virus w GI manifest | J09.X3 | Influenza |
| Gastroenteritis due to influenza A subtype H1N1 virus | J09.X3 | Influenza |
| Gastroenteritis due to avian influenza virus | J09.X3 | Influenza |
| Gastroenteritis due to influenza A virus infection | J09.X3 | Influenza |
| Influenza due to identified avian influenza virus gastroenteritis | J09.X3 | Influenza |
| Influenza due to identified avian influenza virus with gastrointestinal manifestation | J09.X3 | Influenza |
| Novel influenza A with involvement of gastrointestinal tract | J09.X3 | Influenza |
| Influenza due to identified novel influenza A virus with gastrointestinal manifestations | J09.X3 | Influenza |
| Influenza due to identified novel influenza A virus with GI manifestations | J09.X3 | Influenza |
| Influenza due to identified avian influenza virus with other manifestations | J09.X9 | Influenza |
| Flu due to ident novel influenza A virus w oth manifest | J09.X9 | Influenza |
| Flu dt avian manfest NEC | J09.X9 | Influenza |
| Flu dt novel A w oth man | J09.X9 | Influenza |
| Influenza due to identified novel influenza A virus with other manifestations | J09.X9 | Influenza |
| Influenza due to other identified influenza virus | J10 | Influenza |
| Flu due to oth ident flu virus w same oth ident flu virus pn | J10.01 | Influenza |
| Influenza due to influenza virus, type A, human | J10.1 | Influenza |
| Influenza due to influenza virus, type B | J10.1 | Influenza |
| Influenza due to influenza virus, type C | J10.1 | Influenza |
| Asian flu type A | J10.1 | Influenza |
| Asian flu type B | J10.1 | Influenza |
| Influenza A | J10.1 | Influenza |
| Influenza B | J10.1 | Influenza |
| H1N1 influenza | J10.1 | Influenza |
| Influenza A (H1N1) | J10.1 | Influenza |
| Novel influenza A (H1N1) | J10.1 | Influenza |
| Novel 2009 influenza H1N1 | J10.1 | Influenza |
| Novel H1N1 influenza | J10.1 | Influenza |
| Novel influenza A/H1N1 | J10.1 | Influenza |
| Influenza due to identified 2009 H1N1 influenza virus with other respiratory manifestations | J10.1 | Influenza |
| Influenza due to identified novel H1N1 influenza virus | J10.1 | Influenza |
| Novel H1N1 influenzal laryngitis | J10.1 | Influenza |
| Laryngitis due to novel H1N1 influenza virus | J10.1 | Influenza |
| Respiratory infection due to novel H1N1 influenza virus | J10.1 | Influenza |
| Novel H1N1 influenzal respiratory infection | J10.1 | Influenza |
| Influenza due to other identified influenza virus with other respiratory manifestations | J10.1 | Influenza |
| Influenza due to certain identified influenza viruses | J10.1 | Influenza |
| Influenza due to identified 2009 H1N1 influenza virus | J10.1 | Influenza |
| Flu-2009 H1N1 w oth resp | J10.1 | Influenza |
| Acute respiratory infection due to influenza A subtype H1N1 virus | J10.1 | Influenza |
| Influenza due to influenza A subtype H1N1 virus | J10.1 | Influenza |
| Upper respiratory tract infection due to influenza | J10.1 | Influenza |
| Influenza A virus subtype H1N1 detected | J10.1 | Influenza |
| Influenza due to other identified influenza virus with other respiratory manifestations | J10.1 | Influenza |
| Influenza due to novel 2009 influenza A subtype H1N1 virus | J10.1 | Influenza |
| Influenza due to novel influenza A subtype H1N1 virus | J10.1 | Influenza |
| URI due to novel H1N1 influenza virus | J10.1 | Influenza |
| URI due to influenza | J10.1 | Influenza |
| Influenza due to seasonal influenza virus | J10.1 | Influenza |
| Flu due to oth ident influenza virus w oth resp manifest | J10.1 | Influenza |
| Influenza due to identified influenza virus | J10.1 | Influenza |
| Acute respiratory infection due to novel H1N1 influenza virus | J10.1 | Influenza |
| Novel H1N1 influenzal acute respiratory infection | J10.1 | Influenza |
| Upper respiratory infection due to novel H1N1 influenza virus | J10.1 | Influenza |
| Novel H1N1 influenzal upper respiratory infection | J10.1 | Influenza |
| Influenza A with respiratory manifestations | J10.1 | Influenza |
| Type B influenza | J10.1 | Influenza |
| Type A influenza | J10.1 | Influenza |
| Influenza A H1N1 infection | J10.1 | Influenza |
| Influenza due to influenza A virus subtype H7 | J10.1 | Influenza |
| Influenza due to influenza A virus subtype H9 | J10.1 | Influenza |
| Influenza A virus present | J10.1 | Influenza |
| Influenza A virus subtype H1 2009 pandemic strain present | J10.1 | Influenza |
| Influenza due to influenza A virus | J10.1 | Influenza |
| Influenza due to other identified influenza virus with gastrointestinal manifestations | J10.2 | Influenza |
| Influenza due to influenza A subtype H1N1 virus with gastroenteritis | J10.2 | Influenza |
| Influenza due to other identified influenza virus with gastrointestinal manifestations | J10.2 | Influenza |
| Influenza due to oth ident influenza virus w GI manifest | J10.2 | Influenza |
| Novel H1N1 influenza with involvement of gastrointestinal tract | J10.2 | Influenza |
| Influenza due to identified novel H1N1 influenza virus gastroenteritis | J10.2 | Influenza |
| Influenza due to identified novel H1N1 influenza virus with gastrointestinal manifestation | J10.2 | Influenza |
| Novel 2009 H1N1 influenza with involvement of gastrointestinal tract | J10.2 | Influenza |
| Influenza due to other identified influenza virus with other manifestations | J10.8 | Influenza |
| Influenza due to identified 2009 H1N1 influenza virus with other manifestations | J10.89 | Influenza |
| Influenza due to other identified influenza virus with other manifestations | J10.89 | Influenza |
| Influenza due to identified novel H1N1 influenza virus with other manifestations | J10.89 | Influenza |
| Flu-2009 H1N1 w oth man | J10.89 | Influenza |
| Influenza due to other identified influenza virus with other manifestations | J10.89 | Influenza |
| Influenza due to oth ident influenza virus w oth manifest | J10.89 | Influenza |
| Influenza due to unidentified influenza virus | J11 | Influenza |
| Asian flu | J11.1 | Influenza |
| Acute laryngitis with influenza | J11.1 | Influenza |
| Influenzal laryngotracheitis | J11.1 | Influenza |
| Strep pharyngitis with scarlet fever | A38.8 | Pharyngitis |
| Streptococcal sore throat and scarlet fever | A38.8 | Pharyngitis |
| Streptococcal sore throat with scarlatina | A38.8 | Pharyngitis |
| Acute tonsillitis due to herpes simplex virus (HSV) | B00.9 | Pharyngitis |
| Acute tonsillitis due to infectious mononucleosis | B27.90 | Pharyngitis |
| Acute pharyngitis due to infectious mononucleosis | B27.90 | Pharyngitis |
| Pharyngitis due to infectious mononucleosis | B27.90 | Pharyngitis |
| Pharyngitis with viral syndrome | B34.9 | Pharyngitis |
| Pharyngitis due to group B beta hemolytic streptococci | B95.1 | Pharyngitis |
| Streptococcal laryngitis | B95.5 | Pharyngitis |
| Acute staphylococcal pharyngitis | B95.8 | Pharyngitis |
| Staphylococcal tonsillitis | B95.8 | Pharyngitis |
| Staphylococcal pharyngitis | B95.8 | Pharyngitis |
| Bacterial pharyngitis | B96.89 | Pharyngitis |
| Mycoplasmal pharyngitis | B96.89 | Pharyngitis |
| Acute bacterial tonsillitis | B96.89 | Pharyngitis |
| Acute bacterial pharyngitis | B96.89 | Pharyngitis |
| Adenoviral pharyngitis | B97.0 | Pharyngitis |
| Acute tonsillitis due to coxsackie virus | B97.11 | Pharyngitis |
| Respiratory syncytial virus (RSV) pharyngitis | B97.4 | Pharyngitis |
| Respiratory syncytial virus pharyngitis | B97.4 | Pharyngitis |
| Pharyngitis due to respiratory syncytial virus (RSV) | B97.4 | Pharyngitis |
| Sore throat (viral) | B97.89 | Pharyngitis |
| Acute viral tonsillitis | B97.89 | Pharyngitis |
| Viral sore throat | B97.89 | Pharyngitis |
| Viral tonsillitis | B97.89 | Pharyngitis |
| Parainfluenza virus pharyngitis | B97.89 | Pharyngitis |
| Sore throat due to virus | B97.89 | Pharyngitis |
| Periodic fever with aphthous stomatitis, pharyngitis, and lymphadenitis (CMS-HCC) | I88.9 | Pharyngitis |
| Painful tonsil | IMO0002 | Pharyngitis |
| Strep sore throat | J02.0 | Pharyngitis |
| Strep pharyngitis with scarlet fever | J02.0 | Pharyngitis |
| Streptococcal sore throat and scarlet fever | J02.0 | Pharyngitis |
| Streptococcal sore throat | J02.0 | Pharyngitis |
| Streptococcal angina | J02.0 | Pharyngitis |
| Streptococcal pharyngitis | J02.0 | Pharyngitis |
| Epidemic sore throat | J02.0 | Pharyngitis |
| Pharyngitis, streptococcal | J02.0 | Pharyngitis |
| Strep throat | J02.0 | Pharyngitis |
| Pharyngitis due to Streptococcus species | J02.0 | Pharyngitis |
| Pharyngitis due to Streptococcus pyogenes | J02.0 | Pharyngitis |
| Pharyngitis due to group B beta hemolytic streptococci | J02.0 | Pharyngitis |
| Pharyngitis due to group A beta hemolytic Streptococci | J02.0 | Pharyngitis |
| Pharyngitis due to Streptoccus pyogenes | J02.0 | Pharyngitis |
| Acute streptococcal pharyngitis | J02.0 | Pharyngitis |
| Streptococcal sore throat with scarlatina | J02.0 | Pharyngitis |
| Pharyngitis, streptococcal, acute | J02.0 | Pharyngitis |
| Strep pharyngitis | J02.0 | Pharyngitis |
| Streptococcus pharyngitis | J02.0 | Pharyngitis |
| Acute staphylococcal pharyngitis | J02.8 | Pharyngitis |
| Sore throat (viral) | J02.8 | Pharyngitis |
| Viral sore throat | J02.8 | Pharyngitis |
| Bacterial pharyngitis | J02.8 | Pharyngitis |
| Mycoplasmal pharyngitis | J02.8 | Pharyngitis |
| Acute pharyngitis due to other specified organisms | J02.8 | Pharyngitis |
| Acute pharyngitis due to other specified organisms | J02.8 | Pharyngitis |
| Respiratory syncytial virus (RSV) pharyngitis | J02.8 | Pharyngitis |
| Staphylococcal pharyngitis | J02.8 | Pharyngitis |
| Adenoviral pharyngitis | J02.8 | Pharyngitis |
| Parainfluenza virus pharyngitis | J02.8 | Pharyngitis |
| Respiratory syncytial virus pharyngitis | J02.8 | Pharyngitis |
| Pharyngitis due to respiratory syncytial virus (RSV) | J02.8 | Pharyngitis |
| Pharyngitis due to other organism | J02.8 | Pharyngitis |
| Sore throat due to virus | J02.8 | Pharyngitis |
| Acute bacterial pharyngitis | J02.8 | Pharyngitis |
| Acute phlegmonous pharyngitis | J02.9 | Pharyngitis |
| Acute suppurative pharyngitis | J02.9 | Pharyngitis |
| Acute ulcerative pharyngitis | J02.9 | Pharyngitis |
| Viral pharyngitis | J02.9 | Pharyngitis |
| Pharyngitis | J02.9 | Pharyngitis |
| Pharyngeal inflammation | J02.9 | Pharyngitis |
| Sore throat | J02.9 | Pharyngitis |
| Sorethroat | J02.9 | Pharyngitis |
| Throat soreness | J02.9 | Pharyngitis |
| Throat infection - pharyngitis | J02.9 | Pharyngitis |
| Throat infection | J02.9 | Pharyngitis |
| Reflux pharyngitis | J02.9 | Pharyngitis |
| Pharyngitis with viral syndrome | J02.9 | Pharyngitis |
| Oropharynx infection | J02.9 | Pharyngitis |
| Tonsillopharyngitis | J02.9 | Pharyngitis |
| ST (sore throat) | J02.9 | Pharyngitis |
| Exudative pharyngitis | J02.9 | Pharyngitis |
| Acute pharyngitis, unspecified | J02.9 | Pharyngitis |
| Acute pharyngitis, unspecified pharyngitis type | J02.9 | Pharyngitis |
| Acute pharyngitis | J02.9 | Pharyngitis |
| Infective pharyngitis | J02.9 | Pharyngitis |
| Phlegmonous pharyngitis | J02.9 | Pharyngitis |
| Suppurative pharyngitis | J02.9 | Pharyngitis |
| Ulcerative pharyngitis | J02.9 | Pharyngitis |
| Acute infective pharyngitis | J02.9 | Pharyngitis |
| Acute pharyngitis, unspecified | J02.9 | Pharyngitis |
| Acute pharyngitis, unspecified etiology | J02.9 | Pharyngitis |
| Pharyngitis, unspecified etiology | J02.9 | Pharyngitis |
| Periodic fever with aphthous stomatitis, pharyngitis, and lymphadenitis (CMS-HCC) | J02.9 | Pharyngitis |
| Acute sore throat | J02.9 | Pharyngitis |
| Fever with sore throat | J02.9 | Pharyngitis |
| Sore throat in the morning | J02.9 | Pharyngitis |
| Pharyngitis, acute | J02.9 | Pharyngitis |
| Acute viral pharyngitis | J02.9 | Pharyngitis |
| Pharyngotonsillitis | J02.9 | Pharyngitis |
| Allergic pharyngitis | J02.9 | Pharyngitis |
| Strep tonsillitis | J03.00 | Pharyngitis |
| Acute streptococcal tonsillitis | J03.00 | Pharyngitis |
| Streptococcal adenotonsillitis | J03.00 | Pharyngitis |
| Streptococcal tonsilloadenoiditis | J03.00 | Pharyngitis |
| Streptococcal tonsillopharyngitis | J03.00 | Pharyngitis |
| Chronic streptococcal tonsillitis | J03.00 | Pharyngitis |
| Streptococcal tonsillitis | J03.00 | Pharyngitis |
| Acute non-recurrent streptococcal tonsillitis | J03.00 | Pharyngitis |
| Acute streptococcal tonsillitis, unspecified | J03.00 | Pharyngitis |
| Acute streptococcal tonsillitis, not specified as recurrent or not | J03.00 | Pharyngitis |
| Acute recurrent streptococcal tonsillitis | J03.01 | Pharyngitis |
| Recurrent streptococcal tonsillitis | J03.01 | Pharyngitis |
| Acute staphylococcal tonsillitis | J03.80 | Pharyngitis |
| Acute viral tonsillitis | J03.80 | Pharyngitis |
| Acute bacterial tonsillitis | J03.80 | Pharyngitis |
| Acute tonsillitis due to other specified organisms | J03.80 | Pharyngitis |
| Acute enteroviral vesicular tonsillitis | J03.80 | Pharyngitis |
| Staphylococcal tonsillitis | J03.80 | Pharyngitis |
| Viral tonsillitis | J03.80 | Pharyngitis |
| Acute tonsillitis due to coxsackie virus | J03.80 | Pharyngitis |
| Acute tonsillitis due to infectious mononucleosis | J03.80 | Pharyngitis |
| Acute tonsillitis due to herpes simplex virus (HSV) | J03.80 | Pharyngitis |
| Acute tonsillitis due to other specified organisms | J03.80 | Pharyngitis |
| Acute recurrent tonsillitis due to other specified organisms | J03.81 | Pharyngitis |
| Acute recurrent tonsillitis due to other specified organisms | J03.81 | Pharyngitis |
| Acute follicular tonsillitis | J03.90 | Pharyngitis |
| Acute infective tonsillitis | J03.90 | Pharyngitis |
| Acute suppurative tonsillitis | J03.90 | Pharyngitis |
| Acute ulcerative tonsillitis | J03.90 | Pharyngitis |
| Tonsillitis, phlegmonous | J03.90 | Pharyngitis |
| Lingual tonsillitis | J03.90 | Pharyngitis |
| Lingular tonsillitis | J03.90 | Pharyngitis |
| Pustular tonsillitis | J03.90 | Pharyngitis |
| Tonsillopharyngitis | J03.90 | Pharyngitis |
| Acute recurrent adenotonsillitis | J03.90 | Pharyngitis |
| Acute catarrhal tonsillitis | J03.90 | Pharyngitis |
| Acute erythematous tonsillitis | J03.90 | Pharyngitis |
| Acute lingual tonsillitis | J03.90 | Pharyngitis |
| Acute infective adenoiditis | J03.90 | Pharyngitis |
| Acute tonsillitis, unspecified | J03.90 | Pharyngitis |
| Exudative tonsillitis | J03.90 | Pharyngitis |
| Acute tonsillitis | J03.90 | Pharyngitis |
| Follicular tonsillitis | J03.90 | Pharyngitis |
| Suppurative tonsillitis | J03.90 | Pharyngitis |
| Ulcerative tonsillitis | J03.90 | Pharyngitis |
| Angina tonsillaris | J03.90 | Pharyngitis |
| Acute tonsillitis, unspecified | J03.90 | Pharyngitis |
| Acute tonsillitis, unspecified etiology | J03.90 | Pharyngitis |
| Tonsillitis in pediatric patient | J03.90 | Pharyngitis |
| Acute adenoiditis | J03.90 | Pharyngitis |
| Infective tonsillitis | J03.90 | Pharyngitis |
| Tonsillitis | J03.90 | Pharyngitis |
| Phlegmonous tonsillitis | J03.90 | Pharyngitis |
| Pharyngotonsillitis | J03.90 | Pharyngitis |
| Influenzal tonsillitis | J03.90 | Pharyngitis |
| Tonsillitis with influenza | J03.90 | Pharyngitis |
| Tonsillitis with exudate | J03.90 | Pharyngitis |
| Acute adenotonsillitis | J03.90 | Pharyngitis |
| Adenotonsillitis, acute | J03.90 | Pharyngitis |
| Acute recurrent tonsillitis, unspecified | J03.91 | Pharyngitis |
| Acute recurrent tonsillitis, unspecified | J03.91 | Pharyngitis |
| Recurrent acute tonsillitis | J03.91 | Pharyngitis |
| Acute recurrent tonsillitis | J03.91 | Pharyngitis |
| Recurrent tonsillitis | J03.91 | Pharyngitis |
| Streptococcal laryngitis | J04.0 | Pharyngitis |
| Hypopharyngitis | J06.0 | Pharyngitis |
| Influenzal tonsillitis | J11.1 | Pharyngitis |
| Tonsillitis with influenza | J11.1 | Pharyngitis |
| Chronic streptococcal tonsillitis | J35.01 | Pharyngitis |
| Periodic fever with aphthous stomatitis, pharyngitis, and lymphadenitis (CMS-HCC) | K12.0 | Pharyngitis |
| Periodic fever with aphthous stomatitis, pharyngitis, and lymphadenitis (CMS-HCC) | M04.1 | Pharyngitis |
| Periodic fever, aphthous stomatitis, pharyngitis, adenitis (PFAPA) syndrome (CMS-HCC) | M04.8 | Pharyngitis |
| PFAPA syndrome (CMS-HCC) | M04.8 | Pharyngitis |
| Periodic fever, aphthous stomatitis, pharyngitis, adenitis syndrome (CMS-HCC) | M04.8 | Pharyngitis |
| Fever with sore throat | R50.9 | Pharyngitis |
| Pharyngotonsillitis due to human herpes simplex virus (HSV) | B00.2 | URI |
| Parainfluenza virus rhinopharyngitis | B97.89 | URI |
| Acute respiratory disease with immunodeficiency (CMS-HCC) | D84.9 | URI |
| Acute respiratory disorder in immunocompromised patient (CMS-HCC) | D84.9 | URI |
| Fever, catarrhal, acute | J00 | URI |
| Acute catarrhal fever | J00 | URI |
| Common cold virus | J00 | URI |
| Cold virus | J00 | URI |
| Coryza virus | J00 | URI |
| Acute irritant rhinitis | J00 | URI |
| Parainfluenza virus rhinopharyngitis | J00 | URI |
| Common cold | J00 | URI |
| Acute coryza | J00 | URI |
| Acute nasal catarrh | J00 | URI |
| Acute rhinitis | J00 | URI |
| Infective rhinitis | J00 | URI |
| Nasal catarrh, acute | J00 | URI |
| Nasopharyngitis | J00 | URI |
| Acute nasopharyngitis | J00 | URI |
| Infective nasopharyngitis | J00 | URI |
| Cold (disease) | J00 | URI |
| Catarrhal inflammation | J00 | URI |
| Rhinopharyngitis | J00 | URI |
| Head cold | J00 | URI |
| Coryza | J00 | URI |
| Acute infective rhinitis | J00 | URI |
| Acute nasopharyngitis (common cold) | J00 | URI |
| Acute noninfective rhinitis | J00 | URI |
| Other acute rhinitis | J00 | URI |
| Acute rhinitis, unspecified type | J00 | URI |
| Acute nasopharyngitis (common cold) | J00 | URI |
| Nasopharyngitis acute | J00 | URI |
| Nasopharyngitis infective | J00 | URI |
| Colds | J00 | URI |
| Acute respiratory disease with immunodeficiency (CMS-HCC) | J06.9 | URI |
| Acute respiratory disease due to 2019 novel coronavirus | J06.9 | URI |
| Acute respiratory disease due to Wuhan coronavirus | J06.9 | URI |
| 2019-nCoV acute respiratory disease | J06.9 | URI |
| Upper respiratory tract infection due to 2019-nCoV | J06.9 | URI |
| Upper respiratory tract infection due to 2019 novel coronavirus | J06.9 | URI |
| Acute respiratory disease due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | J06.9 | URI |
| Upper respiratory tract infection due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | J06.9 | URI |
| Upper respiratory tract infection due to COVID-19 virus | J06.9 | URI |
| Upper respiratory tract infection due to Wuhan coronavirus | J06.9 | URI |
| Acute respiratory disease due to COVID-19 virus | J06.9 | URI |
| URI, acute | J06.9 | URI |
| Viral upper respiratory tract infection | J06.9 | URI |
| Upper respiratory infection of multiple sites | J06.9 | URI |
| Recurrent upper respiratory tract infection | J06.9 | URI |
| Protracted upper respiratory infection | J06.9 | URI |
| Protracted URI | J06.9 | URI |
| Viral upper respiratory illness | J06.9 | URI |
| Upper respiratory virus | J06.9 | URI |
| Recurrent URI (upper respiratory infection) | J06.9 | URI |
| Upper respiratory infection, acute | J06.9 | URI |
| Viral upper respiratory tract infection with cough | J06.9 | URI |
| Viral URI with cough | J06.9 | URI |
| Upper respiratory infection with cough and congestion | J06.9 | URI |
| Acute upper respiratory infections of multiple or unspecified sites | J06.9 | URI |
| Acute upper respiratory infections of other multiple sites | J06.9 | URI |
| Acute upper respiratory infections of unspecified site | J06.9 | URI |
| Acute respiratory disease | J06.9 | URI |
| Acute upper respiratory infection | J06.9 | URI |
| Acute URI | J06.9 | URI |
| Acute upper respiratory infection of multiple sites | J06.9 | URI |
| Acute URI of multiple sites | J06.9 | URI |
| Multiple URI | J06.9 | URI |
| URTI (acute upper respiratory infection) | J06.9 | URI |
| Recent upper respiratory tract infection | J06.9 | URI |
| Asthma occurring only with upper respiratory infection | J06.9 | URI |
| Infection, upper respiratory | J06.9 | URI |
| Respiratory infection, upper | J06.9 | URI |
| Upper respiratory infection, viral | J06.9 | URI |
| Inflammatory disorder of upper respiratory tract | J06.9 | URI |
| Inflammatory disorder of respiratory tract | J06.9 | URI |
| Recent URI | J06.9 | URI |
| Acute upper respiratory infection, unspecified | J06.9 | URI |
| Upper respiratory tract infection, unspecified type | J06.9 | URI |
| URI with cough and congestion | J06.9 | URI |
| Asthma occurring only with URI | J06.9 | URI |
| Upper respiratory tract infection in pediatric patient | J06.9 | URI |
| Symptoms of upper respiratory infection in pediatric patient | J06.9 | URI |
| Symptoms of URI in pediatric patient | J06.9 | URI |
| Acute respiratory disorder in immunocompromised patient (CMS-HCC) | J06.9 | URI |
| Infection of the upper respiratory tract | J06.9 | URI |
| Upper respiratory tract infection | J06.9 | URI |
| URTI (infection of the upper respiratory tract) | J06.9 | URI |
| Recurrent upper respiratory infection (URI) | J06.9 | URI |
| URI (upper respiratory infection) | J06.9 | URI |
| Upper respiratory infection | J06.9 | URI |
| Upper respiratory tract infectious disease | J06.9 | URI |
| Viral upper respiratory infection | J06.9 | URI |
| Viral URI | J06.9 | URI |
| Recurrent nasopharyngitis | J31.1 | URI |
| Asthma occurring only with upper respiratory infection | J45.909 | URI |
| Asthma occurring only with URI | J45.909 | URI |
| Snuffles | R06.5 | URI |
| Acute respiratory disease due to 2019 novel coronavirus | U07.1 | URI |
| Acute respiratory disease due to Wuhan coronavirus | U07.1 | URI |
| 2019-nCoV acute respiratory disease | U07.1 | URI |
| Upper respiratory tract infection due to 2019-nCoV | U07.1 | URI |
| Upper respiratory tract infection due to 2019 novel coronavirus | U07.1 | URI |
| Acute respiratory disease due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | U07.1 | URI |
| Upper respiratory tract infection due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | U07.1 | URI |
| Upper respiratory tract infection due to COVID-19 virus | U07.1 | URI |
| Upper respiratory tract infection due to Wuhan coronavirus | U07.1 | URI |
| Acute respiratory disease due to COVID-19 virus | U07.1 | URI |

**Appendix 1.B: Diagnosis Shifting Denominator Measures**

|  |  |  |
| --- | --- | --- |
| **Diagnoses Name** | **Code** | **Subcategory** |
| Acute tonsillitis | J03.x | Antibiotic-appropriate |
| Bacterial pneumonia | J15.X | Antibiotic-appropriate |
| Bacterial pneumonia due to Haemophilus influenzae | J14 | Antibiotic-appropriate |
| Bacterial pneumonia due to Streptococcus pneumoniae | J13 | Antibiotic-appropriate |
| Pneumonia, unspecified org | J18.X | Antibiotic-appropriate |
| Pneumonia from other org | J16.X | Antibiotic-appropriate |
| Pneumonia in diseases classified elsewhere | J17.X | Antibiotic-appropriate |
| Cough | R05 | Non-specific |
| Disease of the upper respiratory tract, unspecified | J39.9 | Non-specific |
| Fever, unspecified | R50.9 | Non-specific |
| Other disorders of middle ear and mastoid in diseases classified elsewhere | H75.xx | Non-specific |
| Other respiratory disorders | J98.xx | Non-specific |
| Other specified diseases of the upper respiratory tract | J39.8 | Non-specific |
| Other specified disorders of middle ear and mastoid | H74.8 | Non-specific |
| Other specified disorders of nose and nasal sinuses (rhinorrhea) | J34.89 | Non-specific |
| Other viral agents as the cause of diseases classified elsewhere | B97.89 | Non-specific |
| Respiratory disorders in diseases classified elsewhere | J99 | Non-specific |
| Unspecified disorder of middle ear and mastoid | H74.9 | Non-specific |
| Unspecified disorder of tympanic membrane | H73.9x | Non-specific |
| Viral infection of unspecified site (includes B34.9, viral infection, unspecified) | B34.x | Non-specific |
| Viral syndrome | B34.9 | Non-specific |
| Acute bronchitis | J20,X | Non-antibiotic-appropriate |
| Acute larungitis/tracheitis | J04.X | Non-antibiotic-appropriate |
| Acute upper resp infection | J06.X | Non-antibiotic-appropriate |
| Bronchitis not specified as acute or chronic | J40 | Non-antibiotic-appropriate |
| Common cold | J00 | Non-antibiotic-appropriate |
| Influenza due to certain org | J09.X | Non-antibiotic-appropriate |
| Influenza due to other org | J10.X | Non-antibiotic-appropriate |
| Influenza due to unidentified org | J11.X | Non-antibiotic-appropriate |
| Viral pneumonia | J12.X | Non-antibiotic-appropriate |
| Acute obstructive laryngitis (croup), epiglottitis | J05.X | Potentially antibiotic-appropriate |
| Acute pharyngitis | J02.X | Potentially antibiotic-appropriate |
| Acute sinusitis | J01.X | Potentially antibiotic-appropriate |
| Nonsuppurative otitis media | H65.X | Potentially antibiotic-appropriate |
| Suppurative and unspecified otitis media | H66.X | Potentially antibiotic-appropriate |

**Appendix 1.C: Health system ambulatory stewardship activities September 2019 through September 2021**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Date** | **Activity** | **Category** | **Description** | **Frequency** | **Region** |
| **Fiscal 2020** | | | | | |
| 9/4/2019 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Introduction of stewardship measures and comparative regional-level data shared with medical and operational leadership | Quarterly | All |
| 10/21/2019 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership | Monthly | Central and North |
| 11/18/2019 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership | Monthly | Central and North |
| 12/1/2019 | Commitment poster | Education - Patient | CDC commitment posters were printed in 18x24 size, signed by all clinician's working in the clinic, and posted in each exam room facing the exam table. | Once | Central and North |
| 12/1/2019 | Education pamphlet | Education - Patient | Patient education pamphlets that describe the appropriate use of antibiotics were printed and made available within the clinics | Once | Central and North |
| 12/4/2019 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Summary of chart audits and data limitations, comparative specialty-level and regional-level data, and clinician antibiotic prescriptions vs. Likelihood to Recommend (LTR) analysis shared with medical and operational leadership | Quarterly | All |
| 12/10/2019 | Urgent Care Physician/APP Meeting | Tracking and Reporting | Shared comparative specialty-level and regional-level data at physician/APP meeting. Also shared finding that showed no correlation between Likelihood to Recommend (LTR) and antibiotics prescription rate - one of the main concerns of the survey. | As needed | Central |
| 12/11/2019 | Urgent Care Physician/APP Meeting | Tracking and Reporting | Shared comparative specialty-level and regional-level data at physician/APP meeting. Also shared finding that showed no correlation between Likelihood to Recommend (LTR) and antibiotics prescription rate - one of the main concerns of the survey. | As needed | North |
| 12/16/2019 | Urgent Care Workgroup Meeting | Tracking and Reporting | Interventions and impact on overall antibiotics prescription rate shared with medical and operational leadership | Monthly | Central and North |
| 12/18/2019 | Urgent Care Physician/APP Meeting | Tracking and Reporting | Shared comparative specialty-level and regional-level data at physician/APP meeting. Also shared finding that showed no correlation between Likelihood to Recommend (LTR) and antibiotics prescription rate - one of the main concerns of the survey. | As needed | West |
| 1/13/2020 | Physician/APP Survey | Education - Clinicians | Survey was conducted from physicians/APPs to understand why they prescribe antibiotics for viral illnesses. One of the main reasons indicated in the survey was - fear of poor Likelihood to Recommend (LTR) score. | Once | All |
| 1/27/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. Also reviewed Urgent Care prescription rate: 2018 vs. 2019. | Monthly | Central and North |
| 2/17/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. Also reviewed Urgent Care prescription rate: 2018 vs. 2019. | Monthly | Central and North |
| 3/4/2020 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared, and the idea of implementing a learning management system to assign and track clinician education discussed with medical and operational leadership | Quarterly | All |
| 4/19/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative regional-level and practice-level data shared with medical and operational leadership. | Monthly | Central and North |
| 5/18/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative practice-level data (North only) shared with medical and operational leadership. Also reviewed the survey results. | Monthly | North |
| 6/3/2020 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership | Quarterly | All |
| 6/15/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative practice-level data (North only) shared with medical and operational leadership. | Monthly | North |
| 7/24/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. Also reviewed the example of individual clinicians' peer comparison report. | Monthly | Central and North |
| August 2020 | Urgent Care physician/APP-level data | Tracking and Reporting | Created and shared physician/APP-level peer comparison report for four antibiotics measures. Medical and Operation directors reviewed this report in-person with all prescribers. | Quarterly | All |
| 8/17/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. | Monthly | Central and North |
| **Fiscal 2021** | | | | | |
| 9/2/2020 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data, impact of COVID-19, improvement in FY20, and approved individual clinician-level data templet shared with medical and operational leadership | Quarterly | All |
| 9/21/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative regional-level (overall antibiotics prescription) and regional-level Acute bronchitis prescription rate shared with medical and operational leadership. Also reviewed FY20 improvement over FY19. | Monthly | Central and North |
| 10/19/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level data shared with medical and operational leadership. | Monthly | Central and North |
| 11/5/2020 | Internally developed education video assigned to all clinicians as part of their annual learning | Education - Clinicians | Assigned clinician education video that Provides scripting to clinicians for patients who might be coming to the clinics with an expectation of antibiotics by 3 step process: - Review of physical exam and other key findings with patients  - Present a clear diagnosis - Use of Negative-Positive treatment recommendation | Once | All |
| 11/16/2020 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and individual measure specific regional-level data shared with medical and operational leadership. Also reviewed the regional prescription rate of acute bronchitis. | Monthly | Central and North |
| 11/17/2020 | Physician/APP Education - Dr. Linder's presentation: Acute Respiratory Infections: How to Say No to Unnecessary Antibiotics and Keep Happy Patients | Education - Clinicians | Educational presentation from NM expert on appropriate use of antibiotics (Dr. Linder). This presentation was recorded and made available to all physicians/APPs. | Once | All |
| 12/2/2020 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared and confirmed the assignment of education video to all Urgent Care clinicians with medical and operational leadership | Quarterly | All |
| 1/18/2021 | Urgent Care Workgroup Meeting | Tracking and Reporting | Reviewed encounter distributions and comparative specialty-level data. Also reviewed all the interventions in place for ambulatory antibiotic stewardship | Monthly | Central and North |
| 2/15/2021 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. Also reviewed completion rate of Choosing Wisely clinician education. | Monthly | Central and North |
| 3/10/2021 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data and clinician education completion rate shared with medical and operational leadership | Quarterly | All |
| 5/17/2021 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level data shared with medical and operational leadership. Also, reviewed COVID-19 visits impacting the stewardship measures. | Monthly | Central and North |
| 6/9/2021 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Stewardship measures and diagnosis shifting measure prescribing rate, and comparative specialty-level and regional-level prescribing data shared with medical and operational leadership | Quarterly | All |
| 7/19/2021 | Urgent Care Workgroup Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. Reviewed prescribing data for diagnosis shifting measure and discussed plan to develop internal commitment poster. | Monthly | Central and North |
| **Fiscal 2022** | | | | | |
| 9/8/2021 | Urgent Care Quality Committee Meeting | Tracking and Reporting | Comparative specialty-level and regional-level data shared with medical and operational leadership. Also, confirmed the plan to share individual clinician-level prescribing data with all clinicians as part of the annual review process. | Quarterly | All |

**Appendix 1.D: Example Clinician Summary Report**

Timeline

Description automatically generated

On a separate page, clinicians were informed that “Patients with certain comorbidities or certain bacterial infection are excluded.”

**Appendix 1.E: Clinician Survey Results**

Chart, funnel chart

Description automatically generated

LTR is Likelihood to Recommend, a metric of patient satisfaction.

**Appendix 1.F: Interrupted Time Series**

***Methods***

To evaluate the impact of the interventions initially and over time we performed an interrupted time series analysis. We used an Autoregressive Integrated Moving Average (ARIMA) model after confirming the existence of autocorrelation for each measure. The autoregressive order of the model residuals was determined by minimizing Akaike’s information criterion (AIC). R version 4.2.0 (R Foundation for Statistical Computing) was used for the analysis. We set the interruption in January 2020, the first month for which we would expect any change in antibiotic prescribing based on the interventions detailed in **Appendix 1.C,** and omitted the early pandemic period (March 2020 through June 2020) which had unusually low visit volumes and high antibiotic prescribing rates (see **Figure 1**).

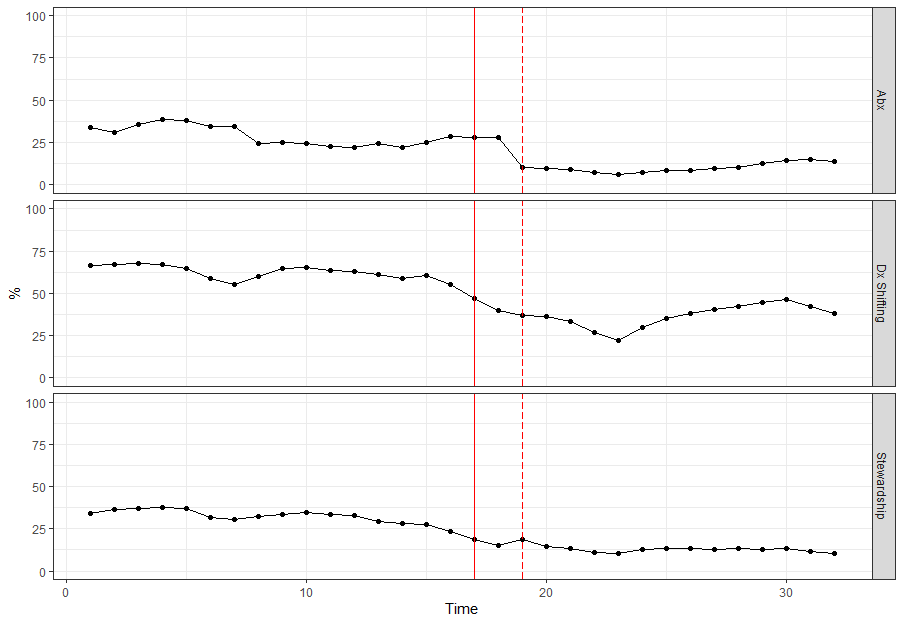
***Results***

There was a significant step decrease in antibiotic prescribing for the stewardship measures, but no change in slope over time for any of the measures (**Appendix Table 1.F and Figure 1.F)**.

**Appendix Table 1.F:** Results of ARIMA models of the Stewardship Measures, Diagnosis Shifting Measure, and All-Antibiotic Prescribing measures at urgent care practices from FY19 to FY21.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Stewardship** | | **Diagnosis Shifting** | | **All Antibiotic Prescribing** | |
|  | Coefficient | p-value | Coefficient | p-value | Coefficient | p-value |
| **Intercept** | 38.0 | 1.0 | 70.7 | 1.0 | 36.2 | 1.0 |
| **Intervention** | -6.7 | 0.02 | -3.7 | 0.13 | -1.9 | 0.33 |
| **Time** | -0.8 | 0.004 | -1.3 | 0.01 | -1.0 | 0.04 |
| **Intervention x time** | 0.2 | 0.76 | 0.6 | 0.72 | 0.3 | 0.68 |

**Appendix 1.F Figure:** Results of ARIMA model for the Stewardship Measures (“Stewardship” at the bottom), Diagnosis Shifting Measure (“Dx Shifting”), and All-Antibiotic Prescribing Measure (“Abx”). The solid vertical line indicates the first month any in-practice intervention would have been expected to show any change in antibiotic prescribing. The dashed vertical line indicates the gap between 2/20 and 7/20 during the initial phase of the COVID pandemic.



Pre-intervention, 9/18 to 12/19

Intervention, 1/20 to 2/20 and 7/20 to 8/21