Supplementary table 1 ICD 10th Revision Thai Modification (ICD-10-TM) codes for diseases included in the study

ICD-10-TM code	Diseases of the respiratory system
J00	Acute nasopharyngitis [common cold]
J01	Acute sinusitis
J010	Acute maxillary sinusitis
J011	Acute frontal sinusitis
J012	Acute frontal sinusitis
J013	Acute frontal sinusitis
J014	Acute frontal sinusitis
J018	Acute frontal sinusitis
J019	Acute frontal sinusitis
J02	Acute pharyngitis
J020	Streptococcal pharyngitis
J028	Acute pharyngitis due to other specified organisms
J029	Acute pharyngitis, unspecified
J03	Acute tonsillitis
J030	Streptococcal tonsillitis
J038	Acute tonsillitis due to other specified organisms
J039	Acute tonsillitis, unspecified
J04	Acute laryngitis and tracheitis
J040	Acute laryngitis
J041	Acute tracheitis

J042	Acute laryngotracheitis
J05	Acute obstructive laryngitis [croup] and epiglottitis
J050	Acute obstructive laryngitis [croup]
J051	Acute epiglottitis
J060	Acute laryngopharyngitis
J068	Other acute upper respiratory infections of multiple sites
J069	Acute upper respiratory infection, unspecified
J20	Acute bronchitis
J200	Acute bronchitis due to Mycoplasma pneumoniae
J201	Acute bronchitis due to Haemophilus influenzae
J202	Acute bronchitis due to Haemophilus influenzae
J203	Acute bronchitis due to coxsackievirus
J204	Acute bronchitis due to parainfluenza virus
J205	Acute bronchitis due to respiratory syncytial virus
J206	Acute bronchitis due to rhinovirus
J207	Acute bronchitis due to echovirus
J208	Acute bronchitis due to other specified organisms
J209	Acute bronchitis, unspecified
J21	Acute bronchiolitis
J210	Acute bronchiolitis due to respiratory syncytial virus
J211	Acute bronchiolitis due to human metapneumovirus
J218	Acute bronchiolitis due to other specified organisms
J219	Acute bronchiolitis, unspecified

J39	Other diseases of upper respiratory tract
J398	Other specified diseases of upper respiratory tract
J399	Disease of upper respiratory tract, unspecified

Supplementary table 2 Diagnoses of diseases suspected to have a bacterial cause: criteria for diagnosis and recommended antibiotics

Diagnosis	Criteria for diagnosis	Recommended antibiotics
Acute tonsillitis/exudative tonsillitis	Three or more of these; 1. fever with severe sore throat 2. exudates at tonsils or marked erythematous swelling of uvula 3. tender cervical adenitis 4. no cough, runny nose, or conjunctivitis	penicillin, amoxicillin cephalexin or clindamycin if allergic to penicillin
Acute otitis media	Otoscopic examination with one of these; 1. presence of purulent discharge 2. severe symptoms 3. fever with otalgia after having common cold for at least 3 days 4. aged < 2 years old 5. cannot be followed up	amoxicillin, amoxicillin/clavulanic acid cefuroxime or azithromycin if allergic to penicillin

Bacterial rhinosinusitis	One of these; 1. rhinorrhea more than 10 days not attributable to allergy 2. worsening of common cold after 3 days with new onset of fever or headache 3. fever with facial pain or purulent nasal drip	amoxicillin, amoxicillin/clavulanic acid cefuroxime or azithromycin if allergic to penicillin
Pertussis	Having cough for more than 2 weeks with history of contact cases of suspected pertussis and not attributable to asthma or allergies	erythromycin or clarithromycin or azithromycin

Supplementary table 3 Categorization of appropriate and inappropriate antibiotic prescription in this study

Categories	Appropriate/Inappropriate
1. The visits of which antibiotics were not needed, and antibiotics were not prescribed	Appropriate
2. The visits of which antibiotics were needed, and antibiotics were prescribed	Appropriate
3. The visits of which antibiotics were not needed, but antibiotics were prescribed	Inappropriate
4. The visits of which antibiotics were needed, but antibiotics were not prescribed	Inappropriate
5. The visits of which antibiotics were needed, antibiotics were prescribed but with inappropriate drugs	Inappropriate
6. The visits of which antibiotics are needed, antibiotics were prescribed but inappropriate duration	Inappropriate

Supplementary table 4 Diagnoses of patients attended in the two study periods

Diagnosis	Pre- intervention Total 2,553 visits n (%)	Post- intervention Total 2,935 visits n (%)
Acute pharyngitis/ tonsillitis	245 (9.6)	214 (7.3)
Acute otitis media (AOM)	80 (3.2)	112 (3.8)
Acute bacterial rhino sinusitis	46 (1.8)	61 (2.1)
Common cold	1869 (73.2)	2193 (74.7)
Acute bronchitis	296 (11.6)	327 (11.1)
Acute bronchiolitis	17 (0.6)	23 (0.8)
AOM not response to initial treatment	0 (0)	4 (0.2)
Rhinosinusitis not response to initial treatment	0 (0)	1 (0)

Numbers in parentheses are percentages of the total number of visits for that disease in both the pre- or post-intervention periods.

Supplementary table 5 Appropriateness of antibiotic prescription for each diagnosis

	Appropriate		Inappropriate			
	Category1	Category2	Category3	Category4	Category5	Category6
Pharyngotonsillitis	1 (0.4) 0 (0)	66 (27.0) 65 (30.0)	69 (28.0) 70 (33.0)	5 (2.0) 57 (27.0)	104 (42.0) 21 (10.0)*	0 (0) 1 (0.5)
Acute otitis media	0 (0) 6 (5.4)	57 (71.0) 73 (65.0)	14 (18.0) 13 (12.0)	3 (4.0) 14 (13.0)	6 (8.0) 6 (5.0)	0 (0) 0 (0)
Rhinosinusitis	0 (0) 0 (0)	36 (78.0) 43 (70.0)	2 (4.0) 2 (3.0)	2 (4.0) 11 (18.0)	6 (13.0) 3 (5.0)	0 (0) 2 (3.0)
Common cold	1572 (84.0) 2002 (91.0)*	0 (0) 0 (0)	297 (16.0) 191 (9.0)	0 (0) 0 (0)	0 (0) 0 (0)	0 (0) 0 (0)
Bronchitis	225 (76.0) 222 (68.0)	6 (2.0) 11 (3.0)	65 (22.0) 94 (29.0)	0 (0) 0 (0)	0 (0) 0 (0)	0 (0) 0 (0)
Bronchiolitis	16 (94.0) 23 (100.0)	0 (0) 0 (0)	1 (6.0) 0 (0)	0 (0) 0 (0)	0 (0) 0 (0)	0 (0) 0 (0)
Acute otitis media (NR)	0 (0) 0 (0)	0 (0) 3 (75)	0 (0) 0 (0)	0 (0) 0 (0)	0 (0) 1 (25)	0 (0) 0 (0)
Rhinosinusitis (NR)	0 (0) 0 (0)	0 (0) 1 (100)	0 (0) 0 (0)	0 (0) 0 (0)	0 (0) 0 (0)	0 (0) 0 (0)

The definition of each category is described in Supplementary table 3. Numbers represent the total number of cases and percentages are in parentheses. The first and second rows of each diagnosis

represent data in the pre- and post-intervention periods, respectively. NR: visits after not response to initial treatment. * Statistically significant difference from the pre-intervention period at $P < 0.05$.