Supplementary Data

As shown in Figure 1, most countries have a large proportion of missing weekly reports from January 2012 to October 2018. In particular, the timing of the missing reports in Tunisia coincides with the periods in between flu seasons. Although Nigeria and the DRC have some of the smallest proportions of missing reports, the volumes of the weekly NPS reported in each country decline over time. Only Algeria, Cameroon, Côte d'Ivoire, Ghana, Madagascar, Mozambique, Morocco, Niger, Senegal, South Africa, and Zambia have steady volumes of reported NPS as well as a small proportion of missing weekly reports. Furthermore, each of these countries displays yearly seasonality except for Cameroon, Côte d'Ivoire, Ghana, Mozambique, and Zambia.

Figure 1. Historical Influenza Activity Data. Number of processed specimens reported from January 8, 2012 to October 7, 2018 for each country. Countries ordered by number of missing weekly reports. Missing data are shown in gray. CAR refers to the Central African Republic, Congo refers to the Republic of the Congo, and DRC refers to the Democratic Republic of the Congo.

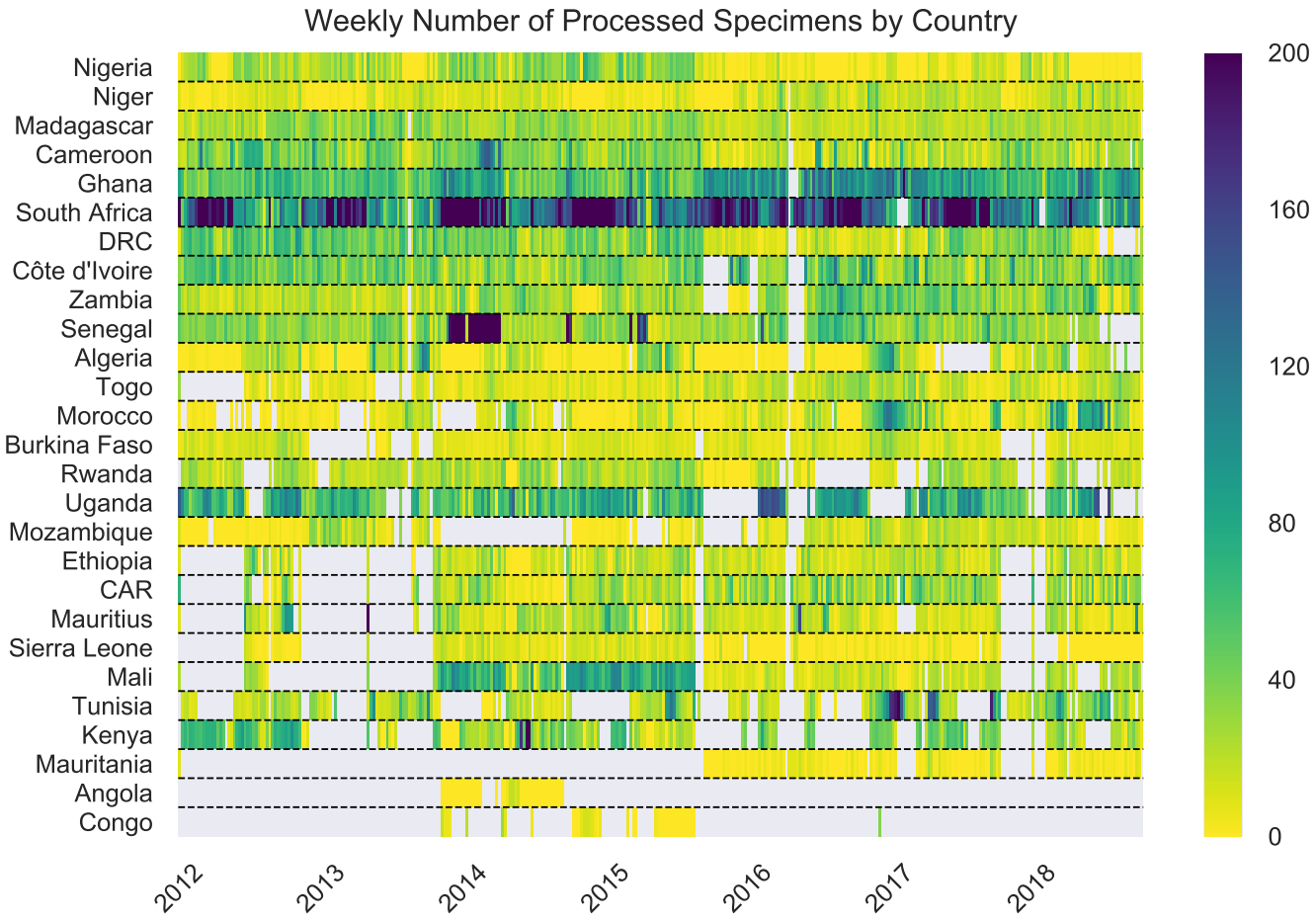
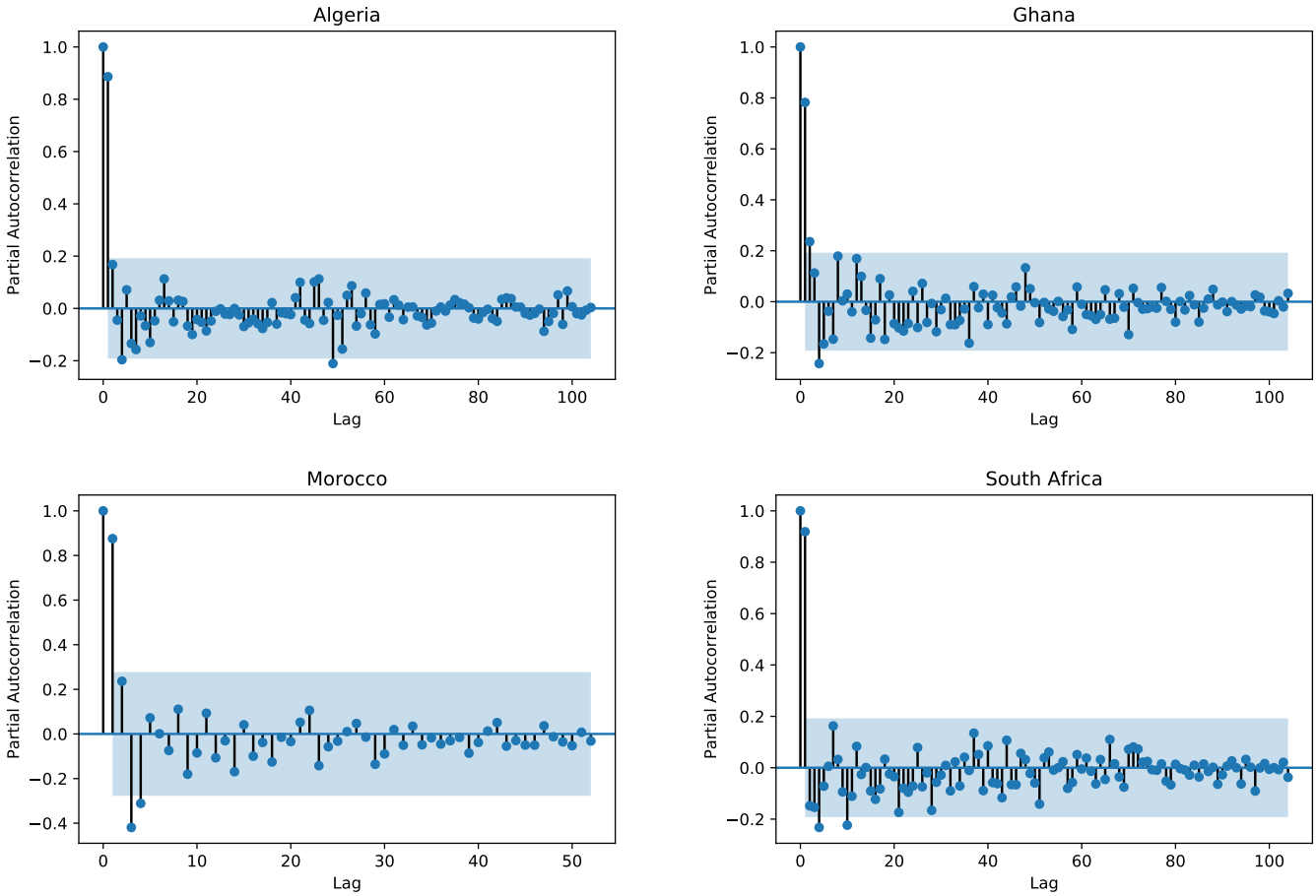


Figure 2. Partial autocorrelograms for South Africa, Algeria, Morocco, and Ghana generated using the confirmed case ratio from the initial training period from January 8, 2012 to January 5, 2014.



The following tables list the Google search terms for Algeria, Ghana, Morocco, and South Africa. The search terms for Morocco were obtained using Google Correlate. The crossed out terms without asterisks were excluded due to sparsity. The crossed out terms with asterisks were excluded due to being unrelated to influenza, influenza symptoms, and influenza-like illnesses.

Table 1. Search terms for Morocco.

~~vaccin grippe~~	vaccin	~~grippe a~~	~~contre la grippe~~
grippe	~~gripe~~	la grippe	~~la gripe~~

Table 2. Search terms for Ghana.

fever	sore throat	~~mono~~	meningitis
~~causes of typhoid fever~~	~~stuffy nose~~	~~symptoms of pneumonia~~	~~what is pneumonia~~
~~esm~~	~~cerebro spinal meningitis~~	~~swine flu~~	~~typhoid fever symptoms~~
yellow fever	~~bird flu~~	~~dengue fever~~	~~runny nose~~
~~hay fever~~	typhoid	cough	flu
~~enteric fever~~	~~lassa fever~~	~~whooping cough~~	~~rsv~~
typhoid fever	~~cerebrospinal meningitis~~	~~symptoms of yellow fever~~	pneumonia
malaria	~~causes of sore throat~~	~~what is fever~~	~~symptoms of typhoid fever~~
~~rheumatic fever~~			

Table 3. Search terms for Algeria.

~~grippe intestinale~~	mono	~~la grippe a~~	~~bronchite chronique~~
vaccin	~~le rhume~~	~~vaccin antirabique~~	pneumonie
~~vaccin ror~~	~~la grippe h1n1~~	~~grippe h1n1 symptomes~~	bronchite
grippe	mal de gorge	la fievre	~~grippe h1n1~~
~~vaccin grippe~~	~~vaccin grippe h1n1~~	le vaccin	~~la grippe porcine~~
~~bouton de fievre~~	~~bronchite aigue~~	~~grippe a symptomes~~	~~vaccin antitétanique~~
~~rsv~~	~~contre la grippe~~	fievre	~~grippe a h1n1~~
~~la grippe aviaire~~	~~congestion nasale~~	~~mono café oran~~	~~symptome grippe h1n1~~
~~grippe porcine en algerie~~	meningite	~~vaccin h1n1~~	~~grippe a~~
~~la grippe porcine en algerie~~	~~vaccin antigrippal~~	~~vaccin bcg~~	~~grippe porcine~~
~~grippe aviaire~~	~~fievre bebe~~	~~fievre jaune~~	la grippe
~~meningite virale~~	~~fievre typhoide~~	rhume	

Table 4. Search terms for South Africa.

sore throat	~~pneumonia treatment~~	mono	~~what is bronchitis~~
~~stuffy nose~~	~~what is pneumonia~~	~~glandular fever symptoms~~	meningitis causes
~~causes of meningitis~~	~~whooping cough in adults~~	~~cryptococcal meningitis~~	~~fever tree~~*
~~grandpa headache powder~~	~~double pneumonia~~	sinus	sinus headache
symptoms of flu	~~weather cape town~~*	chronic fatigue	~~causes of pneumonia~~
~~pcp pneumonia~~	~~tick fever~~*	fever blister	~~tick fever symptoms~~*
flu remedies	yellow fever vaccination	~~vark griep~~	croup
~~sore throat causes~~	~~wet cough~~	~~chronic fatigue syndrome~~*	~~prospan cough syrup~~
rsv	~~signs and symptoms of meningitis~~	~~bronchitis in children~~	fatigue
~~rsv virus in infants~~	~~extreme fatigue~~	~~tb meningitis~~	~~headache remedies~~
~~what is fatigue~~	~~entstof~~	~~symptoms of pneumonia in adults~~	baby fever
~~yuppie flu~~	fever blisters	influenza	cough syrup
~~home remedies for sore throat~~	kennel cough	~~longontsteking~~	~~walking pneumonia~~
~~symptoms of meningitis in adults~~	~~flu vaccine~~	~~cluster headache~~	tuberculosis
~~post nasal drip cough~~	~~home remedy for cough~~	~~treatment for pneumonia~~	cold and flu
~~is pneumonia contagious~~	~~tick bite fever symptoms~~*	~~seer keel~~	~~symptoms of mono~~
~~breinvliesontsteking simptome~~	~~what is meningitis~~	~~adrenal fatigue symptoms~~	~~stomach flu~~*
~~chronic cough~~	~~pathophysiology of pneumonia~~	~~bronchitis treatment~~	cough remedies
cough medicine	~~symptoms of tick fever~~	symptoms of fever	~~rift valley fever~~
cough	~~throat cancer~~*	~~signs of meningitis~~	cold fever
~~menengitis~~	~~the headache clinic~~	~~dizziness and headache~~	whooping cough
~~chronic bronchitis~~	~~symptoms of meningitis in children~~	~~typhoid fever~~	symptoms of meningitis
~~remedy for sore throat~~	cat flu	~~what is mono~~	flu home remedies
pneumonia	~~is bronchitis contagious~~	~~fatigue causes~~	~~flu during pregnancy~~
~~symptoms of bronchitis~~	~~simptome van breinvliesontsteking~~	~~lobar pneumonia~~	what is fever
~~what causes pneumonia~~	body aches	headache causes	~~brongitis~~
~~meningitis treatment~~	koors	~~longontsteking simptome~~	~~aspiration pneumonia~~
fever	~~meningitis vaccine~~	cough remedy	~~saturday night fever~~
flu medication	symptoms of pneumonia	~~colds and flu~~	pcp
symptoms	~~mono pumps~~	~~waking up with a headache~~	grandpa
swine flu	~~cough syrup lyrics~~	~~meningitis symptoms in adults~~	yellow fever
h1n1	~~rsvp~~*	fever symptoms	home remedies
~~dengue fever~~	runny nose	~~kongestie nasale~~	~~koue bokkeveld~~
~~home remedies for cough~~	~~skarlaken koors~~	headaches	~~acute bronchitis~~
~~headache types~~	~~tension headache~~	pneumonia symptoms	~~causes of headache~~
~~home remedy for sore throat~~	~~dry cough causes~~	~~headache during pregnancy~~	~~causes of fatigue~~
~~pneumonia in children~~	high fever	koue	~~swine flu south africa~~
headache	sore throat remedies	dry cough	~~cough mixture~~
~~rsv virus~~	~~persistent cough~~	~~meningococcal meningitis~~	~~symptoms swine flu~~
~~flu virus~~	griep	fatigue symptoms	~~pneumonia causes~~
~~adrenal fatigue~~*	~~bac mono~~	meningitis	~~throbbing headache~~
~~symptoms of swine flu~~	~~causes of bronchitis~~	scarlet fever	~~headache clinic~~*
~~breinvliesontsteking~~	flu symptoms	~~how to stop a runny nose~~	what is flu
~~bronchial pneumonia~~	~~bacterial meningitis~~	~~viral meningitis symptoms~~	~~bird flu~~
~~asthma~~*	~~what causes a headache~~	chills	coughing
~~adrenaline~~*	~~hay fever~~*	meningitis in children	what causes meningitis
~~asthmatic bronchitis~~	~~necrotic pneumonia~~	flu	~~flu and pregnancy~~
~~is meningitis contagious~~	~~whooping cough symptoms~~	glandular fever	~~signs of pneumonia~~
~~chronic headache~~	~~mono disease~~	~~swine flu in south africa~~	~~remedies for sore throat~~
~~sore throat home remedies~~	~~persistent dry cough~~	~~croup cough~~	viral meningitis
bronchitis	~~h1n1 flu~~	~~fever temperature~~	~~koue oorlog~~
~~tick bite fever~~	~~mieliestronk~~*		