



## Reference of the Week

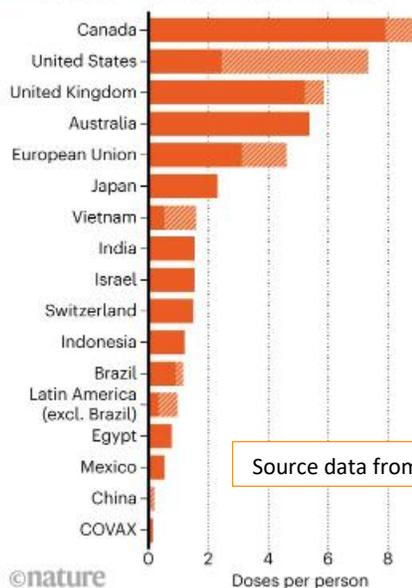
- Mullard A. How COVID vaccines are being divvied up around the world. Nature. 11.30.2020

<https://www.nature.com/articles/d41586-020-03370-6> **WORD**

### BEST AND WORST SUPPLIED

Canada has pre-ordered almost 9 doses of COVID-19 vaccines per person.

■ Pre-ordered ■ Potential for expansion in deal



Source data from Airfinity, up to 19 November

**Issue: 1.** Currently, individual countries are developing vaccine distribution plans by prioritizing population subgroups such as: individuals who received the placebo in vaccine trials; healthcare workers and support personnel; essential workers at risk; at risk individuals (especially nursing home residents); and then the general population. **2.** Vaccine distribution among countries appears to be following familiar patterns of global inequities.

**Current Plan: 1.** Prominent vaccine manufacturers (AstraZeneca, Pfizer, and Moderna) estimate that between them sufficient doses for more than 1/3 of the global population will be available by the end of 2021. **2.** Global vaccine distribution appears to be based upon vaccine pre-ordering by individual countries and most of the early capacity is accounted for. **3.** Low and middle income countries (>189 countries) are relying upon COVAX which is a WHO platform that supports the manufacturing of a wide range of COVID-19 vaccine candidates, and negotiates their pricing. **4.** The problem is supply, at least initially, that has been “bought” through bilateral agreements between wealthy countries and manufacturers.

*AstraZeneca has pledged to provide the vaccine on a not-for-profit basis for the “duration of the pandemic”, and in perpetuity to low- and middle-income countries. Other firms have not made this commitments.*

## Other References:

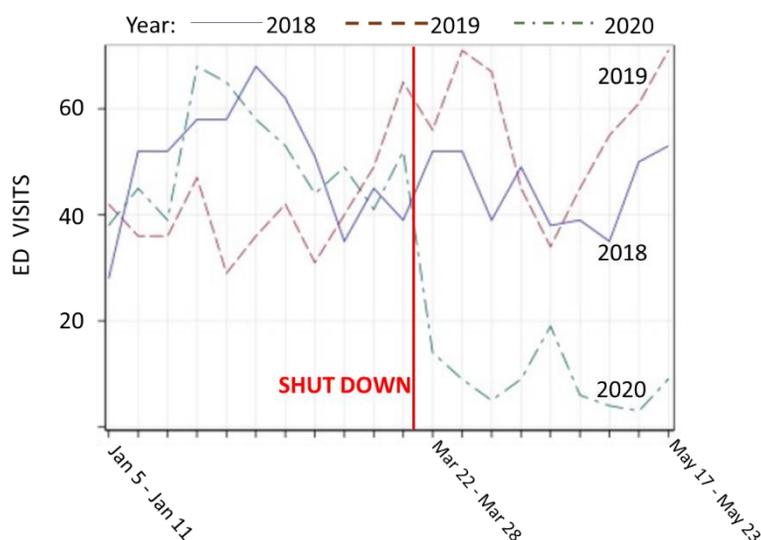
- Simoneau T. Impact of the COVID-19 Pandemic on Pediatric Emergency Department Utilization for Asthma. Annals of the American Thoracic Society. 12.04.2020 (online).

<https://www.atsjournals.org/doi/abs/10.1513/AnnalsATS.202007-765RL> pdf

**Premise/Methods: 1.** The impact of mitigation measures to control the transmission of SARS-CoV-19 on emergency room visits for childhood asthma is unknown. **2.** Mitigation for SARS-CoV-19 transmission likely reduces the spread of community viruses that are a common trigger of asthma exacerbations. **3.** This is a retrospective single center cohort study of children ages 2-22 who visited the Boston Children’s Hospital ED with a diagnosis of asthma during three time periods: Jan 5 – May 23 during the years 2018, 2019, and 2020. **4.** Hypothesis was that asthma ED visits declined particularly during lock down with school closure periods.

**Findings: 1.** A significant decreased incidence of asthma ED visits was found during the shut-down in 2020 compared to 2018 and 2019 ( $p < 0.0001$ ) and the percent of total ED visits due to asthma was lower as well. **2.** Both Hispanic and non-Hispanic subgroups demonstrated significantly lower ED rates post COVID-19 in 2020 than in 2018 or 2019. **3.** ED visits dropped precipitously the week of March 22, days after school and day care closures and coinciding with the state shut-down. **4.** Potential contributors to the decrease include reduced exposure to common viruses, improved air quality, and reduced exposure to sports and outdoor aeroallergens.

**SEE THE ARTICLE CABINET ON THE S: DRIVE, “COVID-19 ARTICLE RESOURCE CABINET” FOR CHILDREN’S FULL COLLECTION**



*It might be optimistic to suggest that improved medication compliance or robust telehealth support contribute to the reduction in ED asthma visit. The fact that asthma admissions remained unchanged invites further study into lessons learned for future asthma care.*

Run chart of asthma ED visits from January 5-May 23 in 2018, 2019, and 2020 (n=2,543)

- White DB. Mitigating Inequities and Saving Lives with ICU Triage During the COVID-19 Pandemic. Amer J Resp and Crit Care Med. 12.02.2020. <https://www.atsjournals.org/doi/pdf/10.1164/rccm.202010-3809CP> pdf

**Concerns – allocation of scarce resources:** **1.** Guidelines generally focus on efficiency (utilitarian approach)- maximize the number of lives saved and/or number of life-years saved. **2.** The disproportionately high mortality rates amongst disadvantaged populations are due to structural inequities that result in more comorbidities, exposure to poor air quality, densely populated low income housing, and lower life expectancy. **3.** Promoting justice (equity) is not usually a consideration in acutely allocating scarce resources.

**Solution:** **1.** Accept the well documented disproportionate impact of the pandemic on disadvantaged communities due to differential access to health care, job opportunities, income, education, and housing quality, as well as racial discrimination and unfair social patterns of power and advantage. **2.** The overarching ethical goal of public health is to improve the aggregate health outcomes of populations, and also to do so in ways that reduce inequities in the distribution of health benefits. **3.** Modifications to existing triage guidelines at the local level: use a correction factor to reduce the impact of structural inequities; give priority to public facing high-risk essential workers; reject long term survival as an allocation criteria; create a learned triage committee that standardizes any allocation formula. **4.** Modifications at the state level: ensure safety-net hospitals receive additional ventilators; and create transfer protocols to ensure that safety-net hospitals are not overwhelmed.

TRIAGE Framework to Promote Population Health Outcomes and Justice:

Principle	Criterion	Point System*			
		+1	+2	+3	+4
PROMOTE POPULATION HEALTH OUTCOMES	Prognosis for hospital survival (assessed using a validated severity of illness score)	Quartile 1 lowest risk of death (i.e., risk of death <25%)	Quartile 2 (i.e., risk of death 25-49%)	Quartile 3 (i.e., risk of death 50%-75%)	Quartile 4- highest risk of death (i.e., risk of death >75%)
	Presence of end stage medical condition (medical assessment of near-term prognosis)	...	...	...	Death expected within 1 year from end stage Condition
PROMOTE JUSTICE/ EQUITY	Correction for structural inequities using Area Deprivation Index (ADI)	Subtract one point from triage priority score if the patient's ADI is 8,9, or 10 (on 1-10 scale).			
	Priority to essential workers	Subtract one point from triage priority score if the patient is an essential worker in a high risk occupation.			
	Priority to those who've had the least chance to live through life's stages	<b>Tiebreaker:</b> In the event that two patients have identical Triage Priority Scores, give priority to the younger patient when a significant age difference exists.			
	Equal chances	<b>Second tiebreaker:</b> In the event that two patients have identical Triage Priority Scores and are of similar ages, use random selection to determine who receives the resource.			

*The triage strategy espoused by the authors may feel "clunky" and not practical for the front lines but all elements of the accompanying table are readily available. Whatever triage formula an institution develops it should not "bake in" or augment disparities that currently exists. It should also seek community input and transparency to maximize trust.*

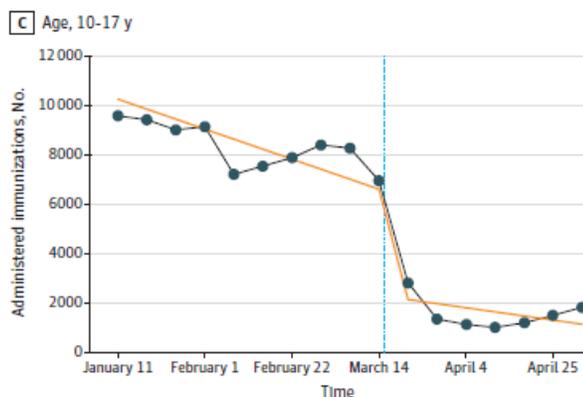
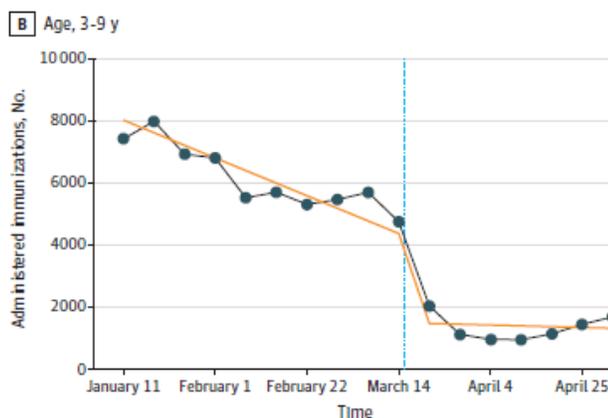
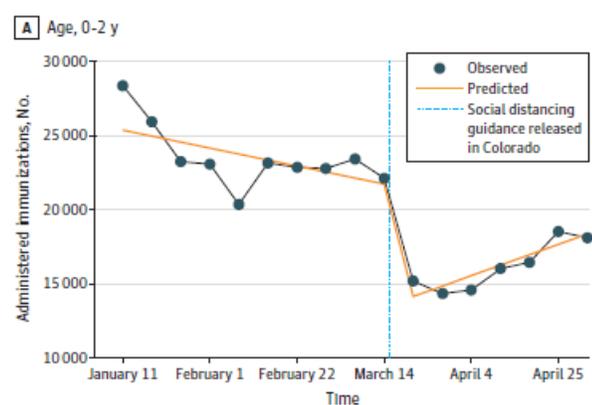


- O’Leary ST. Number of Childhood and Adolescent Vaccinations Administered Before and After the COVID-19 Outbreak in Colorado. JAMA Peds. 12.07.2020. <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2773308> pdf

**Premise/Methods:** **1.** Social distancing and fear of contracting SARS-CoV-19 have resulted in a reduction of in-person primary care visits. **2.** The impact of the pandemic on immunization compliance is unknown. **3.** Data was extracted from the Colorado Immunization Information System and 85.2% of immunization administered in 2019 were captured. **4.** Using data from January 5, 2020, to May 2, 2020, an interrupted time series analysis was used to measure the association of COVID-19 with immunizations administered.

**Findings:** **1.** Drops in mean immunization rate for the 11 weeks before March 15 2020 compared to 11 weeks after were 31% for individuals aged 0 to 2 years, 78% for those aged 3 to 9 years, and 82% for those aged 10 to 17 years. **2.** Public health strategies are necessary to “play catch up” on vaccine preventable diseases.

Figure 1. Interrupted Time Series Analysis for Total Vaccine Doses Administered, January 5 Through May 2, 2020, by Age Group



*We will likely see an uptick in vaccine preventable diseases such as invasive pneumococcal and haemophilus type b as well as outbreaks of measles, mumps, and rubella. Add interrupted immunization schedules to the list of upstream collateral damage from COVID-19.*

**SEE THE ARTICLE CABINET ON THE S: DRIVE, “COVID-19 ARTICLE RESOURCE CABINET” FOR CHILDREN’S FULL COLLECTION**