

Israel's early COVID vaccine rollout went 1100% better than in the United States. What did they do differently?



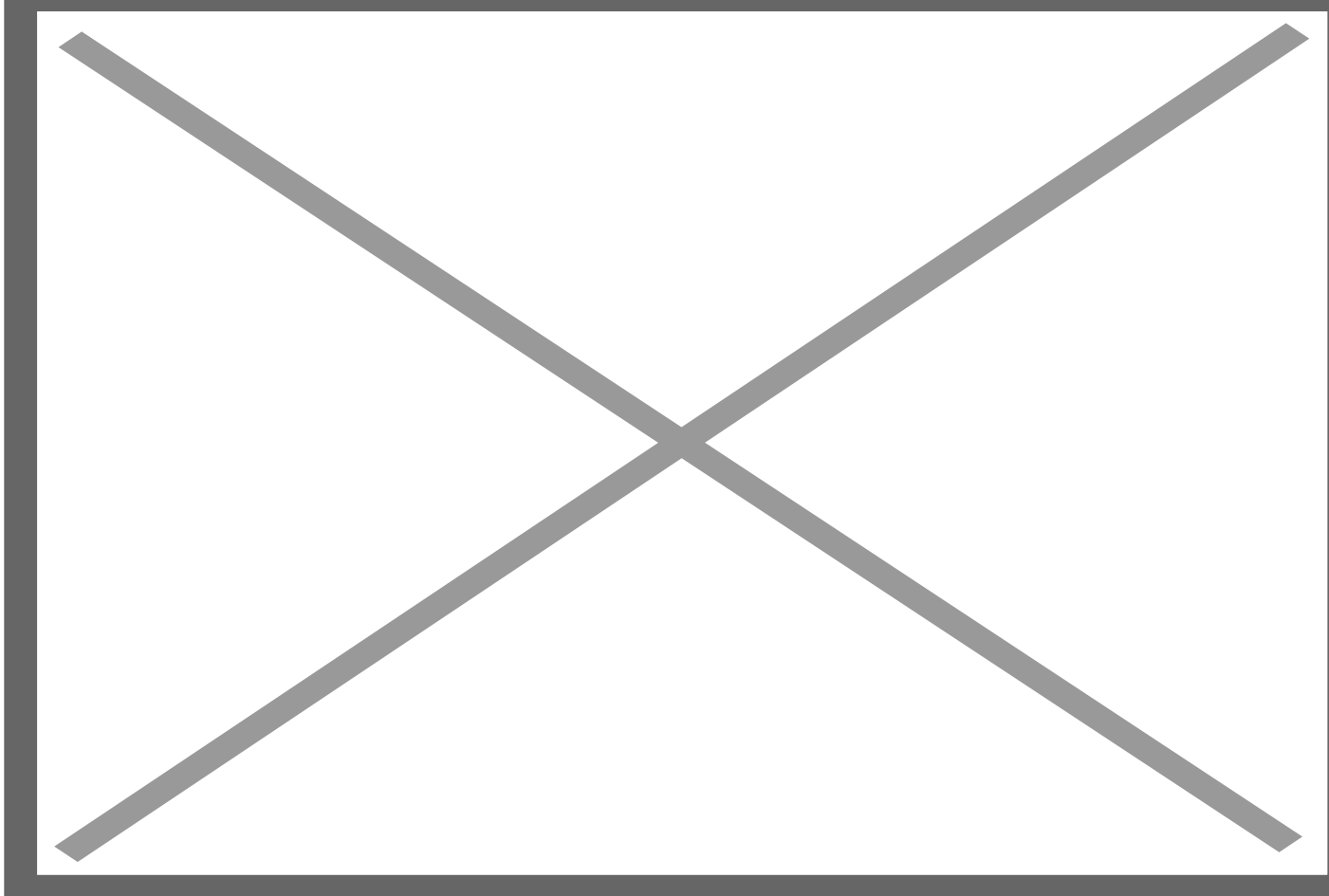
s of January 8, we had only] vaccinated 1.38% of our population [in the United States, while Israel had] vaccinated 15.83% of theirs – twice that of its closest competitor (the United Arab Emirates) and 11-fold that our rate [1]. What can we learn and do?

Reduce the number of overseeing bureaucracies

While we have States, Israel has geographical districts. Both the US and Israel have national guidance in prioritizing the vaccination queue. We differ primarily because we have turned oversight to the States while Israel has not done the same with their districts. (A quick aside, I have written that healthcare is better served locally, States are better at implementation than the Feds; and localities would be far better than States.) Unfortunately for us, in some [instances](#), such as in New York, the Governor has overruled well-prepared plans previously developed by counties for mass immunization.

Israel's bureaucratic oversight involved three groups, hospitals, institutions, and health plans. Institutions are the Israeli term for our long-term care facilities. Despite a slow start, they have the resources to provide mass vaccinations. But unlike in Israel, our hospitals and long-term care facilities are not empowered to act independently, and centralized state government determines their allocations and how they may proceed.

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A worker arrives to test for COVID at Migdal Nofim Nursing Home in Jerusalem. Credit: Yonatan Sindel/Flash90

But a more significant difference lies in US and Israeli health plans. First, there are only four plans, creating a small but manageable competitive marketplace. Our top ten plans combined [cover ONLY 52%](#) of the population. [2] And the Israeli health plans provide both coverage and care, like Kaiser-Permanente, or Geisinger, unlike United Healthcare or Aetna, which pay but rarely offer care. As a result, medical information is divided into separate proprietary “silos” of information. We cannot streamline care to the same degree because our information systems cannot digitally talk to one another. In much of US medicine, the fastest way to move medical information is by walking it from one place to another – we have a sneakernet, not an Internet.

Payviders

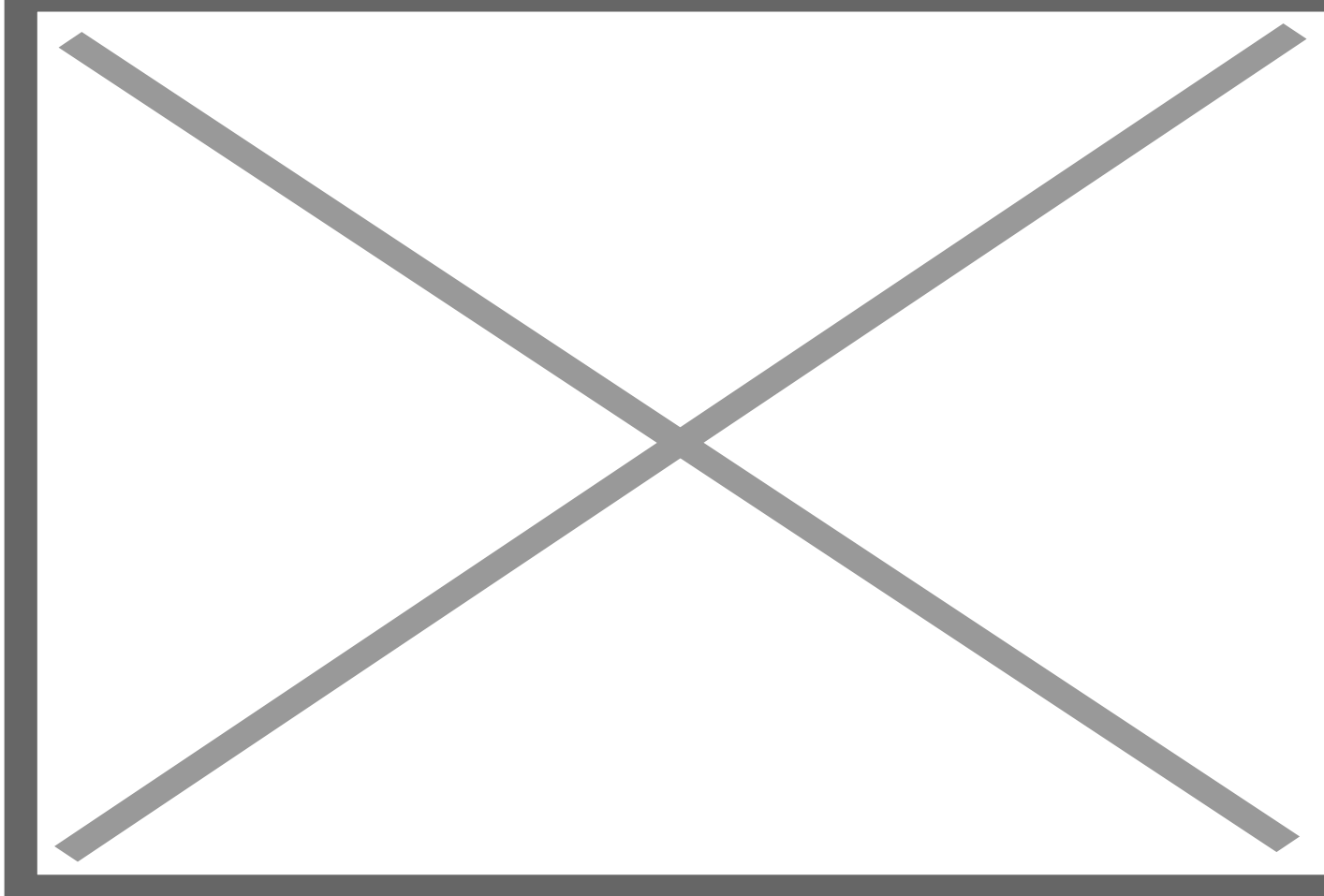
That is a word I just ran across the other day. The “new” concept of combining payers and providers is the Kaiser-Permanente model, which is now almost 76 years old. Payviders, like those Israeli health plans, have expertise and software for scheduling, and like our hospitals, the labor, space, and resources to

vaccinate efficiently. They also can access our protected personal health information, giving them a big leg up. They can schedule both vaccinations simultaneously. These organizations know your age, your co-morbidities, perhaps even your employment; they can determine when it is your turn, enforcing the queue's rules.

Our electronic health records contain much of that information in the US, but it is difficult to access and even more challenging to share. Hospitals, employing an expensive IT staff, can run reports on their hospitalized and ambulatory patients, generating lists by age, ethnicity, and co-morbidity. Some large medical practices are capable of generating those lists, but they are in the minority. Practices of 10 physicians or fewer account for 55% of private practice, and they do not have the in-house expertise to generate those reports. More importantly, there is no assurance that any of this information can be electronically transferred to the State to inform allocation.

Neighborhood pharmacies, which are being considered vaccination centers, have access to their customers' age and gender. They may also infer from your medications some, but not all, of your risk factors. They can tell you have elevated cholesterol from statins, but a diuretic (water pill) will not tell them whether you are being treated for high blood pressure or heart failure. Some of these pharmacies involved in COVID-19 testing have scheduling systems, but not on the same scale as hospitals. [Eventbrite](#), a platform that usually sells concert tickets, provides scheduling services in Florida; and a New Jersey health center is getting their vaccine message out on Facebook.

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A “vaccination super station” for health-care workers in San Diego. Credit: Mike Blake/Reuters

Medicare and Medicaid serving over a third of our citizens, and arguably the preponderance of those most at risk, have the information but no ability to schedule A vaccination, let alone coordinate such an endeavor.

Buffers

The outstanding efficiency of American industry is lean supply chains, “delivering products quickly to the end customer, with minimum waste.” [3] By delivering goods just in time, balancing supply and demand, the wasteful costs of keeping them in warehouses can be eliminated. In a steady-state equilibrium that works very well, but when supply and demand are rapidly changing, these lean supply chains are not resilient. They break down. Remember buying toilet paper in April? Warehouses act as buffers, smoothing out the ups and downs when supply and demand are changing. The vaccination process requires buffers too, for moving patients through the system and not wasting vaccines with a limited shelf life.

Recently, I [wrote](#) about vaccination’s operational bottlenecks and pointed out that holding patients for the

required 15 minutes of post-injection observation was rate-limiting. You need a lot of space. Because of the design of the Israeli health system where payers and providers are the same, they have fewer, small, cottage-industry offices; their facilities are more concentrated and, as a result, have those necessary, larger holding areas. The Israeli vaccination system relies on two holding areas, the first between the registration and the jab, the second between the jab and the exit. These areas act as necessary buffers, ensuring a patient is ready to be vaccinated and a place for them to sit and be observed for the next 15 minutes.

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Much of the media attention has been drawn to wasted vaccines. This problem is best thought of as a buffering problem. In any of our human endeavors, there will always be patients that do not show up or cannot fulfill their "obligation" to be vaccinated then and there. There is a whole industry within medicine to optimize patients' management before surgery dedicated to preventing delays in care, yet delays occur daily. We can maintain lists of those patients waiting to be vaccinated, and when an opening appears, call them in. Think of it like those unable to get a reservation at a restaurant (remember those days?) who are willing to go on the "on-call if available" list. That type of listing would reduce unused vaccines by buffering demand to meet an excess supply. But US healthcare cannot make those lists; I doubt that scheduling software can maintain them.

The buffering problem of vaccine occurs in Israel. There are no methods to rapidly identifying excess supplies and shifting them to sites where demand can be increased. It is a coordination activity without a coordinator. Remember in April when governors had to develop systems to know at the state level how many hospital beds were full and how many ventilators were deployed?

We need an app that can make appointments and, with a bit of "inter-operability" with our health insurance, make sure that it is our turn. It needs to schedule not just the first but both appointments and send us a reminder. Using cell phones will surmount much of the concern over lack of Internet access. For those without, libraries can be recruited to the effort, as well as automated call centers.

We need to identify large facilities to increase the number of patients treated, and they need to run for more than 8 hours a day. To meet President-elect Biden's goal to fully [4] vaccinate 1 million people a day, we need to vaccinate 1388 people per minute. In the roughly 21 days of vaccine availability, we have vaccinated 4.6 million, about 152 a minute. That translates to years, not months, before we can fully reopen our economy.

References

[1] [Our World in Data Covid-Vaccinations](#)

[2] Medicare adds 17%, Medicaid 19% for about 88%, roughly 900 companies cover the remaining 12%.

[3] [The Goal of the Lean Supply Chain](#) IndustryWeek

[4] With the two approved vaccines, each individual requires 2 injections 21 or 28 days apart.

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