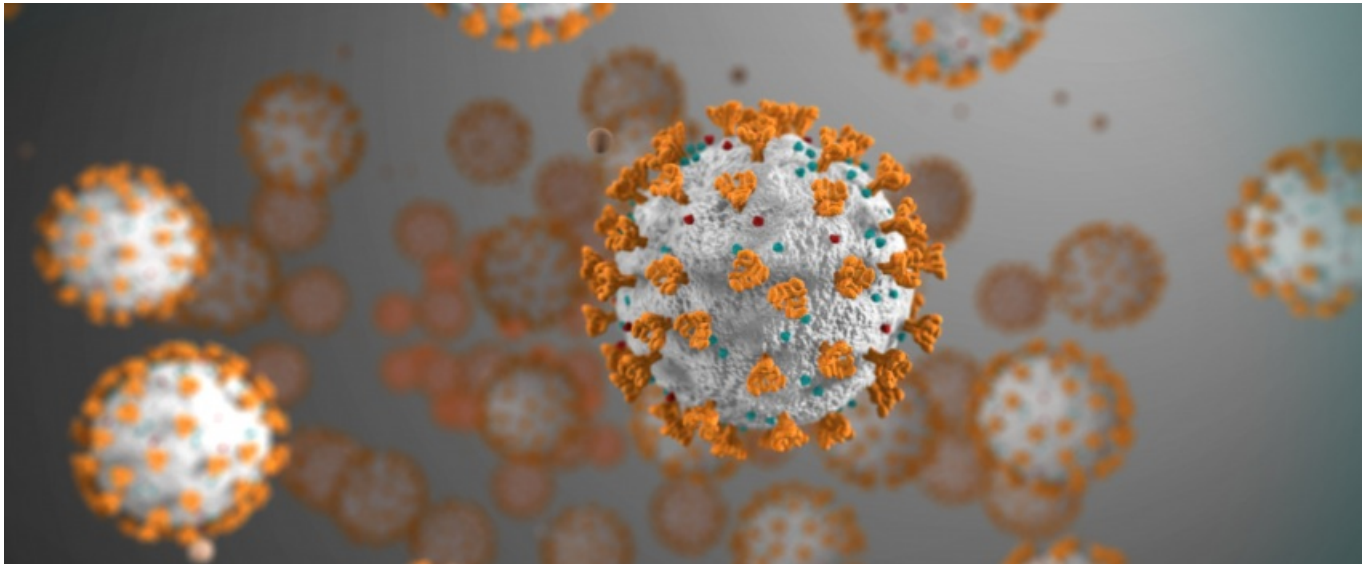


Moderna's Covid-19 vaccine looks golden in oldies



[Madeleine Armstrong](#)



Moderna gets a boost from data in older subjects and a potential logistical advantage.

Moderna's first data drop for its Covid-19 vaccine, mRNA-1273, was criticised for not including older subjects – the ones who need protection from coronavirus the most. But results released on Wednesday showed a promising immune response in older age groups, alongside an acceptable safety profile.

Moderna's vaccine could also have a logistical edge over Pfizer and Biontech's rival mRNA candidate, BNT162b2: mRNA-1273 can be stored at higher temperatures than the Biontech/Pfizer project, making it more convenient for real-world use.

Of course, before these factors come into play, companies must show that their vaccines are safe and efficacious.

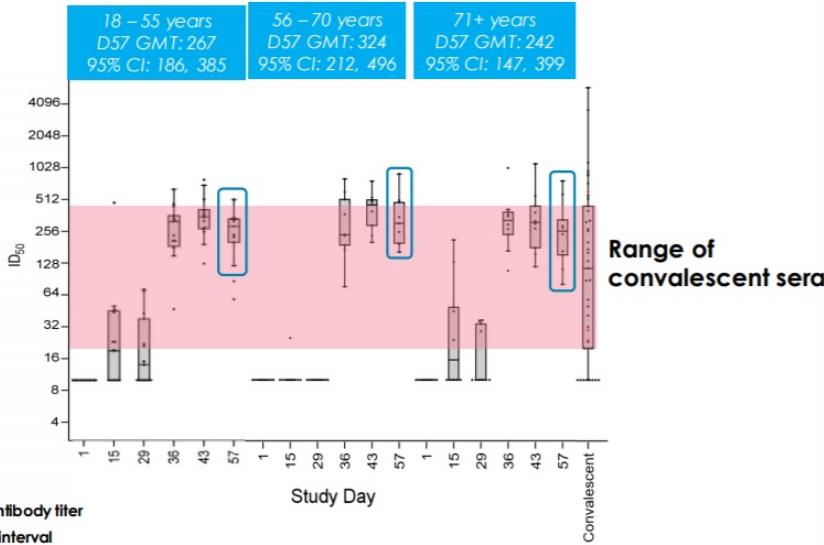
The signs so far with mRNA-1273 are promising. A meeting of the CDC's Advisory Committee on Immunization Practices (ACIP) heard more results yesterday from a [phase I NIAID-sponsored trial](#) of the vaccine, which yielded initial data in July ([Moderna's Covid-19 vaccine shows promise, July 15, 2020](#)).

That first release only included data on patients aged 55 and younger. Yesterday Moderna presented results from 10 patients apiece in two more cohorts: those aged 56-70, and those aged 71 and above.

After receiving two 100µg doses of mRNA-1273 – the dose Moderna has taken into phase III – patients in the older age categories showed neutralising antibody levels similar to those previously reported in the younger cohort. These antibodies are thought to be an indicator of a vaccine's ability to provide protection against the coronavirus.

SARS-CoV-2 nAb Comparable Across Age Strata and to Convalescent Sera out to Day 57 PD2

Pseudovirus neutralization assay titers (ID50)- 100 µg at Day 1 and Day 29



Key Takeaways

- PD2 pseudovirus neutralization responses were detected in all participants
- PsV titers were comparable across age groups
- PsV median titer for 56-70 and 71+ YOA above convalescent sera median titer at Day 57 PD2

D57: one month post-do:
 GMT: geometric mean antibody titer
 95% CI: 95% confidence interval
 PD2= Post-dose 2
 Vaccination administered at Day 1 and Day 29

Jackson L, Anderson EJ, Routhael NG, et al. An mRNA vaccine against SARS-CoV-2- preliminary report. N Engl J Med. 14 Jul 2020; DOI: 10.1056/NEJMoa2022483

Source: Company presentation

Although the patient numbers involved are small, the data should provide some reassurance to those who had been worried that older people would fail to respond to Covid-19 vaccines – a concern as immune response declines with age.

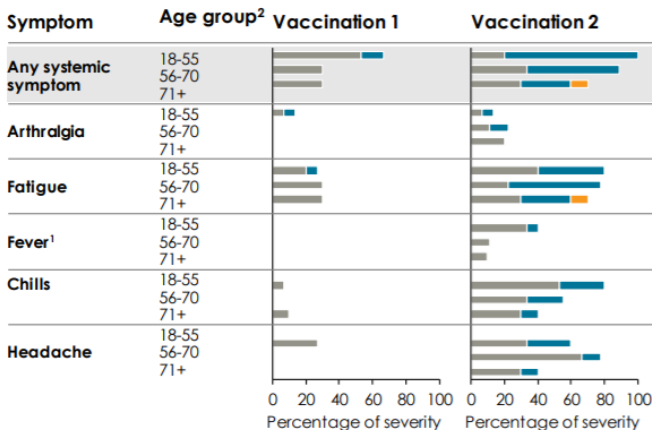
There had also been worries about side effects in the older population, but the adverse-event profile of the 100µg dose in those aged over 55 does not look too burdensome.

Moderna’s stock closed up 6% yesterday on the news.

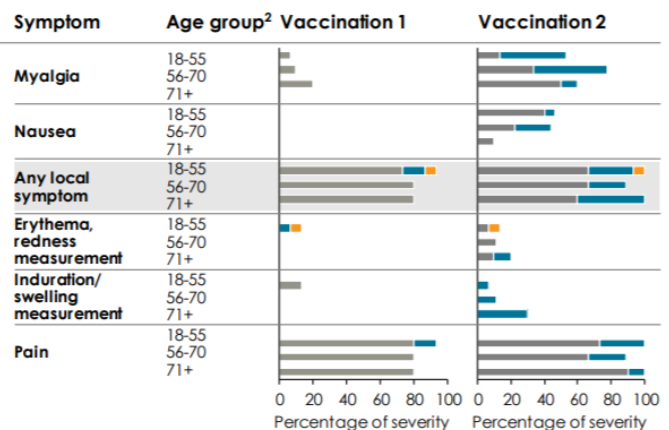
100 mcg mRNA-1273 Well-Tolerated Across Age Groups

Phase 1: No Vaccine-Related SAEs Have Been Reported

Solicited Local and Systemic Symptoms Followed for 7 Days Post-vaccination
 Majority of symptoms resolved within 2 days, some persisted as long as 5 days



■ Grade 1 (mild) ■ Grade 2 (moderate) ■ Grade 3 (severe)



Source: Company presentation

The company still has much to prove – not least that a neutralising antibody response to mRNA-1273 translates into protection against Covid-19. This question should be answered by the [Cove phase III trial](#), being conducted in regions with high Covid rates, enrolment of which continues apace. On Friday Moderna said it had enrolled over 13,000 patients into the 30,000-patient trial – yesterday it said that 15,239 patients have now been recruited.

It will be important to see how mRNA-1273 fares in a greater number of older patients. 25-40% of patients in Cove are expected to be either over 65, or under 65 with increased risk of complications of Covid-19. And

around 18% of trial subjects are ethnic minorities, Moderna said yesterday.

Meanwhile, Biontech and Pfizer anticipate that around 40% of patients in its [phase III trial of BNT162b2](#) will be over 55. That trial has now enrolled over half of its 30,000 patient target.

Both studies are on track to complete enrolment by the end of September – something that seemed unthinkable just a few months ago.

Storage worries on ice

If both vaccines succeed in phase III, issues of distribution and storage will come to the fore. Moderna said yesterday that mRNA-1273 can be distributed and stored at -20°C and, once thawed, kept in a refrigerator for seven days.

Meanwhile, Biontech/Pfizer’s vaccine requires distribution and storage at -70°C; once thawed, it only has a 24-hour shelf-life in the fridge – or two hours at room temperature.

This could make a huge difference in the real world, with ACIP hearing that, as it stands, the latter would be “very difficult for community clinics and local pharmacies to store and administer”. Biontech and Pfizer are working on the stability of their vaccine to give it a 7-10-day lifespan once thawed, according to the Evercore ISI analyst Umer Raffat.

Although mRNA-1273 might currently look like the more convenient mRNA contender, its storage requirements are still burdensome compared with more conventional vaccines. Novavax’s NVX-CoV2373 and Astrazeneca’s AZD1222 can be stored in the fridge, the latter for up to a year, according to Mr Raffat.

Still, these differences will only become relevant if a number of the Covid-19 vaccines in development show similar efficacy and safety.

This story is a longer version of a snippet published on August 26, 2020.

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