

Tech talk: Unpacking and assembling the puzzle pieces of a COVID vaccine - SCRIPT

**Blurb:** One of the scientific breakthroughs that came with the COVID-19 pandemic was the introduction of new vaccine technology, like those used in the Pfizer jabs. A new vaccine plant in Cape Town will now make similar vaccines on local soil, but making these specialised shots often requires some hands-on help.

- There's a new vaccine plant in Cape Town, funded by billionaire Patrick Soon-Shiong. By 2025, the facility plans to make a billion doses of COVID vaccine each year.
- Soon-Shiong will donate R3-billion to South Africa to fund the 'tech transfer' that will be necessary to make new technology such as mRNA on local soil.
- Think of technology transfer like you're assembling furniture. It includes all the tools, pieces and instructions you'll need to get the job done.

**Byline: Dylan Bush, Adele Sulcas, Linda Pretorius & Aisha Abdool Karim**

Making a vaccine isn't a straightforward process — and it has gotten more complicated over time.

The COVID-19 pandemic has brought with it brand new vaccine technology, like those used in the Pfizer and Moderna jabs.

Vaccines like Pfizer and Moderna use pieces of genetic material called mRNA to instruct your body to produce proteins that can fight a particular virus.

Making an mRNA virus is complex. That's why countries rely on something called "technology transfer".

### **What is tech transfer?**

Making a vaccine is like having to assemble a piece of furniture on your own.

Building a stable table or chair means having all the right tools, pieces and instructions.

Similarly, making a safe jab requires knowing the recipe, ingredients and tools.

In addition to having the right tools and instructions, companies that make vaccines require training on how to put all of those things together.

For instance, they need help with which safety protocols to follow and how to develop checklists to test the quality of the final product.

Teaching manufacturers all the steps of how to reproduce a COVID vaccine saves them the time of having to figure it out themselves.

Tech transfer provides production facilities with a “build-a-vaccine” info pack to get them up and running.

### **How long does making a vaccine take?**

When Big Pharma is ready to play ball when it comes to tech transfer, the manufacturing process can go from years to months.

But there’s a lot of money in medicine and companies like Pfizer and Moderna are making bank on their COVID vaccines.

Manufacturers such as BioNTech were able to make the Pfizer jab in six months thanks to tech transfer.

Shrouding the manufacturing process in secrecy helps pharmaceutical companies retain control over the product.

Local manufacturers need to reverse engineer a vaccine through trial and error if they don’t have help from the pharmaceutical companies.

And if the developers of jabs don’t waive the patents on their vaccines, those who try to copy it can get sued.

### **Why SA has to crack the recipe for a vaccine**

Making the ingredients of a vaccine public isn’t enough information to help you produce the jab. You still need to know how to put all the ingredients together.

Patents protect manufacturers against other companies trying to steal or copy their inventions.

Moderna has said it won’t enforce its vaccine patent during the pandemic — but it doesn’t mean that making the jab is now a simple copy and paste.

Patents normally withhold key pieces of information and only provide a loose skeleton of how to make a vaccine.

That’s where tech transfer comes in — which Moderna has refused to do.

Technology transfer fills in the rest of the gaps of making the vaccine that are not included in the patent.

Without manufacturers sharing the finer details of the process, it is up to local facilities to try and figure it out on their own.

Afrigen Biologics is trying to crack Moderna's recipe, instructions, tools and know-how.

Once they're done, they will train other companies in Africa on how to produce the jab as part of a World Health Organisation project.

There are long-term benefits for companies coming on board to help build local manufacturing capacity.

Vaccine tech transfer in Africa will help allow the continent to build its expertise and facilities for future epidemics aside from COVID.