Before COVID-19, the mumps vaccine in the 1960s was the fastest any vaccine had been developed: it took four years, from viral sampling to approval. The Pfizer–BioNTech vaccine became the first fully tested immunization to be approved for emergency use against the coronavirus within a year. The world was able to develop COVID-19 vaccines so quickly because of years of previous research on related viruses and faster ways to manufacture vaccines, enormous funding that allowed firms to run multiple trials in parallel and regulators moving more quickly than normal. What we learnt from the process looks likely to change the future of vaccine science forever. (F: Nature Briefing 21.12.20)