

Lessons learned in the pandemic

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Partnerships can achieve great things

- Academia can be fast and flexible
 - Many sources of expertise are available
 - Existing networks allow for rapid transfer of ideas
 - Oxford produced a GMP manufacturing process and clinical data
- Pharma needed for large scale manufacture and global regulatory submissions
 - Move from manual, hands on approach to large scale systems and logistics
- However, lack of support for academic careers (rather than short term grants) means that it is very difficult to maintain experienced teams who can respond when required
- This is likely to be a major problem from 2022

Opportunities to be better prepared were missed

- Requests to fund vaccine technology development and vaccine manufacturing were repeatedly turned down before 2020
- ‘response to disease X’ had been planned, but not funded, so no preparations had been made
 - Some failures in vaccine preparation early on, time wasted
- Doses for clinical trials were made by CBF, Advent, Cobra, Oxford Biomedica, **each with a different process and assays**
 - ‘half dose issue’ was a direct consequence of that
 - trials were left waiting for vaccine supply
 - If funding had been granted, a single process could have been used at CBF, VMIC, then larger scale

Having a clear and shared goal achieves much more than detailed paperwork

- In 2020/2021, Oxford and AZ went from concept to 700 million vaccines doses released for use in 172 countries
- That took less time than some academic funding applications
- Plans were constantly in development
- Budgets were 'reactive' and with little detail, until actual spending was reported
- Decisions were made by those leading the work, not by external consultants to funders
- The UKRI rapid response scheme achieved a good balance of information gathering and speed
- Establishing and maintaining expert teams should be prioritised