

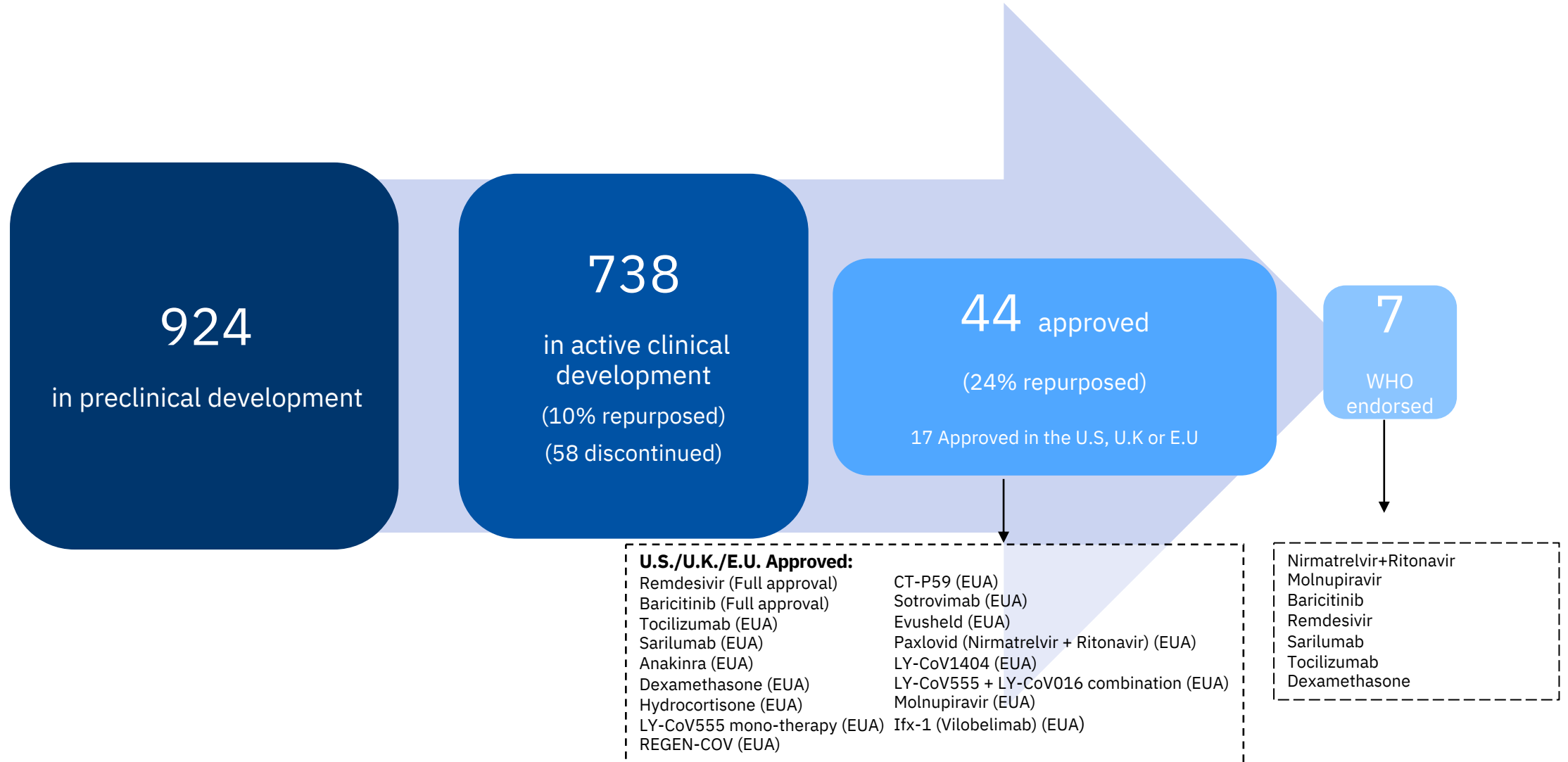
How different partnership models supported the response against COVID -19

Airfinity

07 June 2023

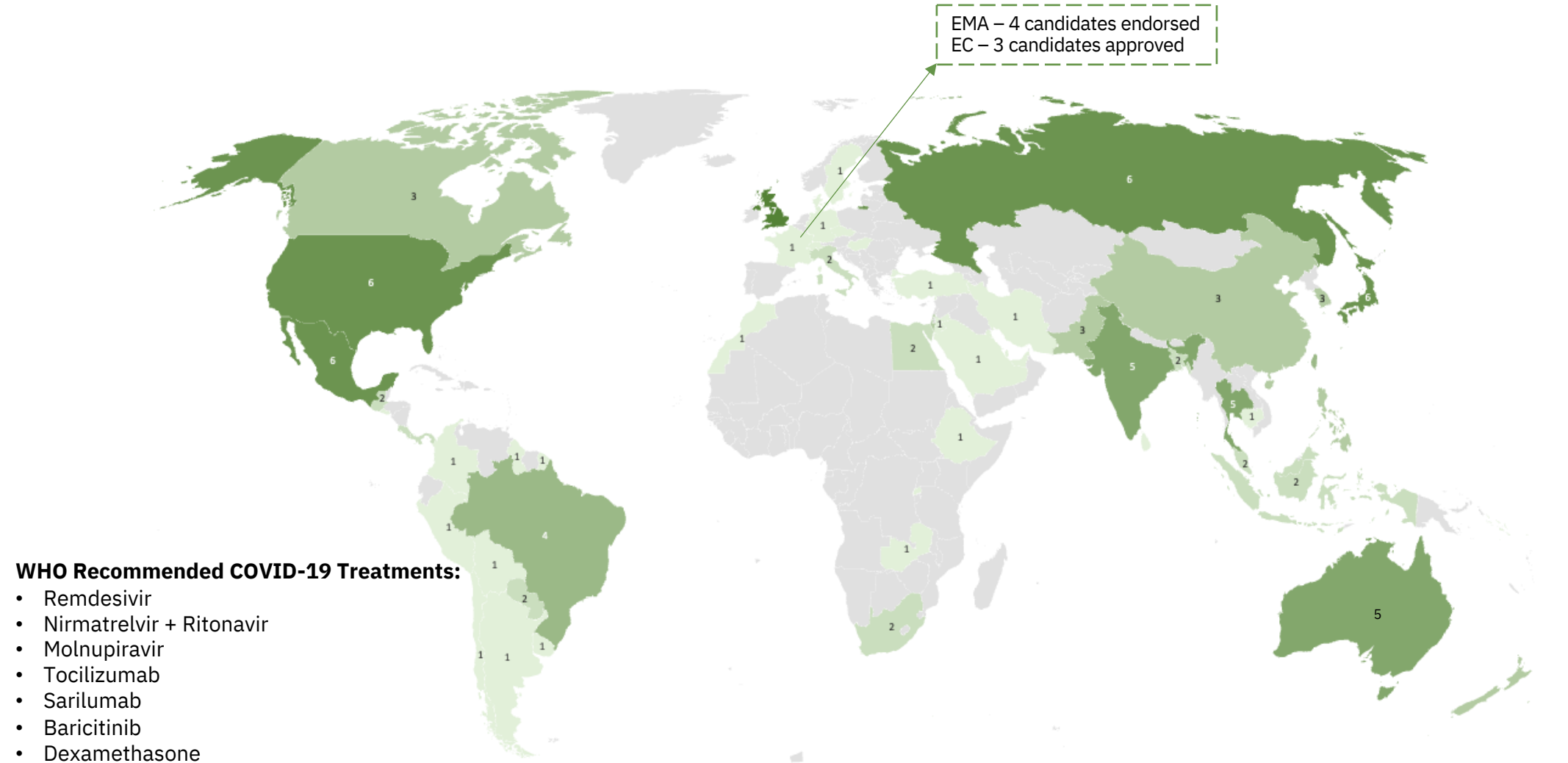
44 therapeutics have been approved for COVID-19; 1 in 18 treatments in clinical trials reached market

COVID-19 treatment pipeline



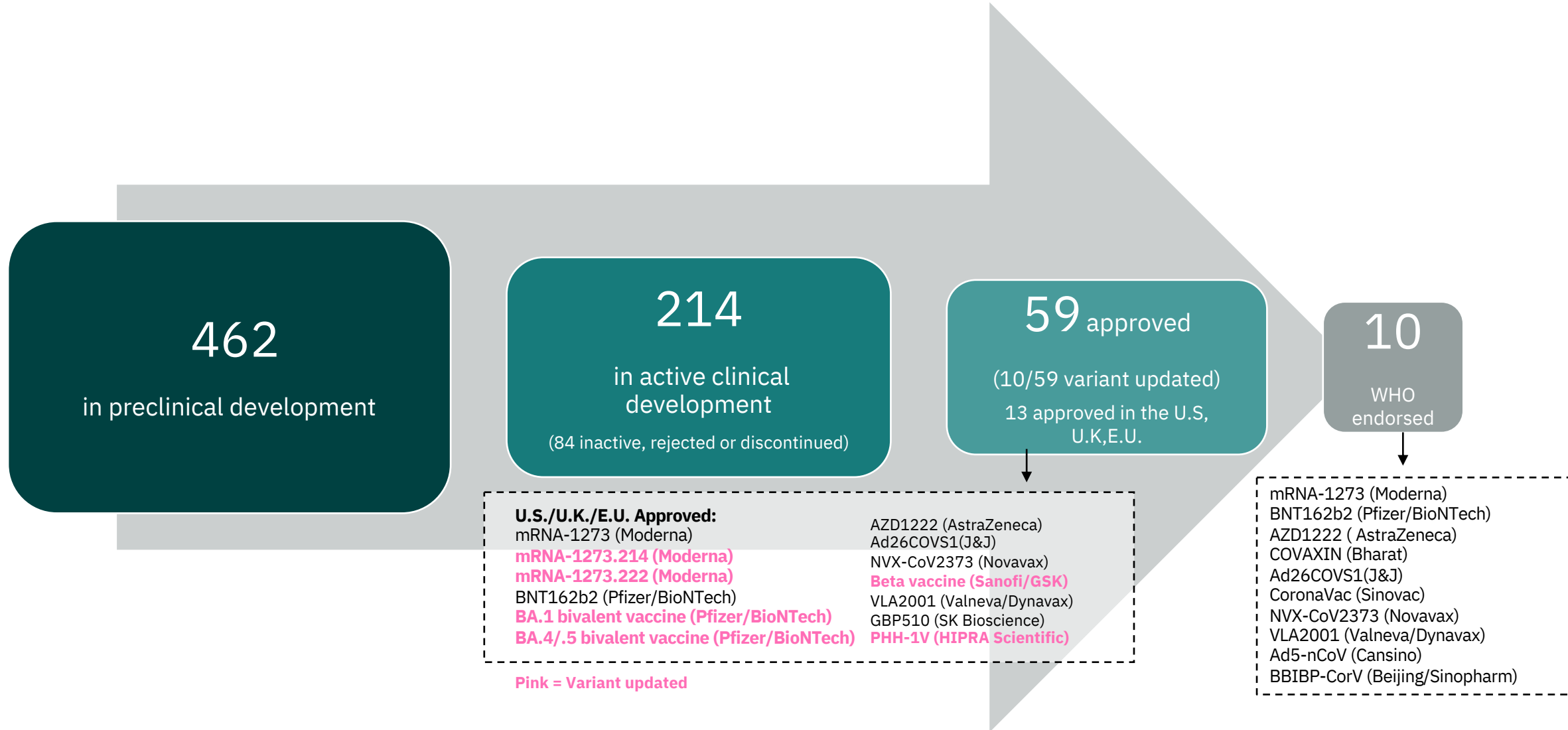
WHO recommended treatments have widespread regulatory authorisations, but low coverage in Africa

Regulatory decisions on the 7 WHO recommended COVID-19 treatments worldwide



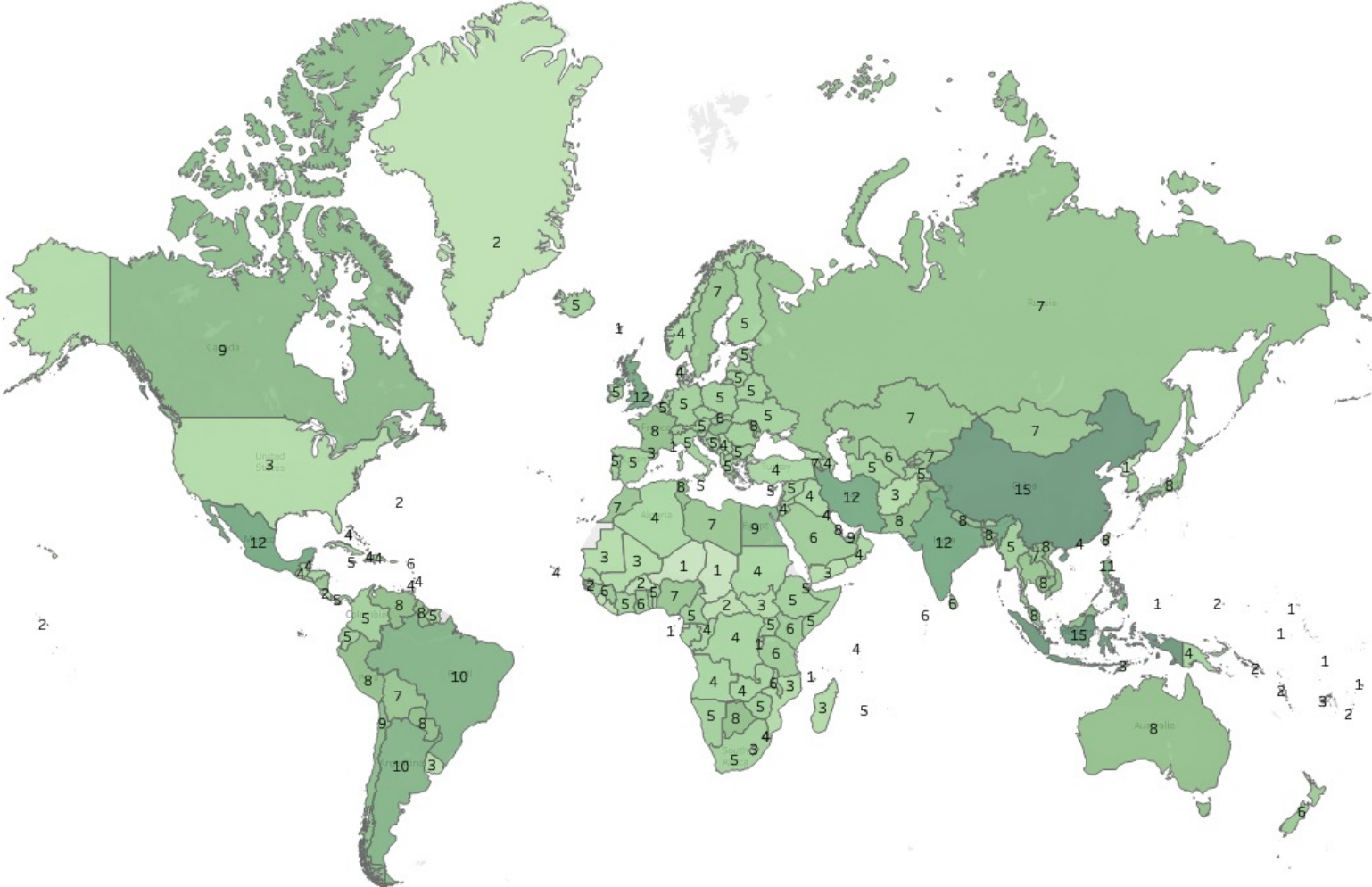
59 COVID-19 vaccines have been approved; ~1 in 5 vaccines in clinical trials reached market

COVID-19 vaccines pipeline



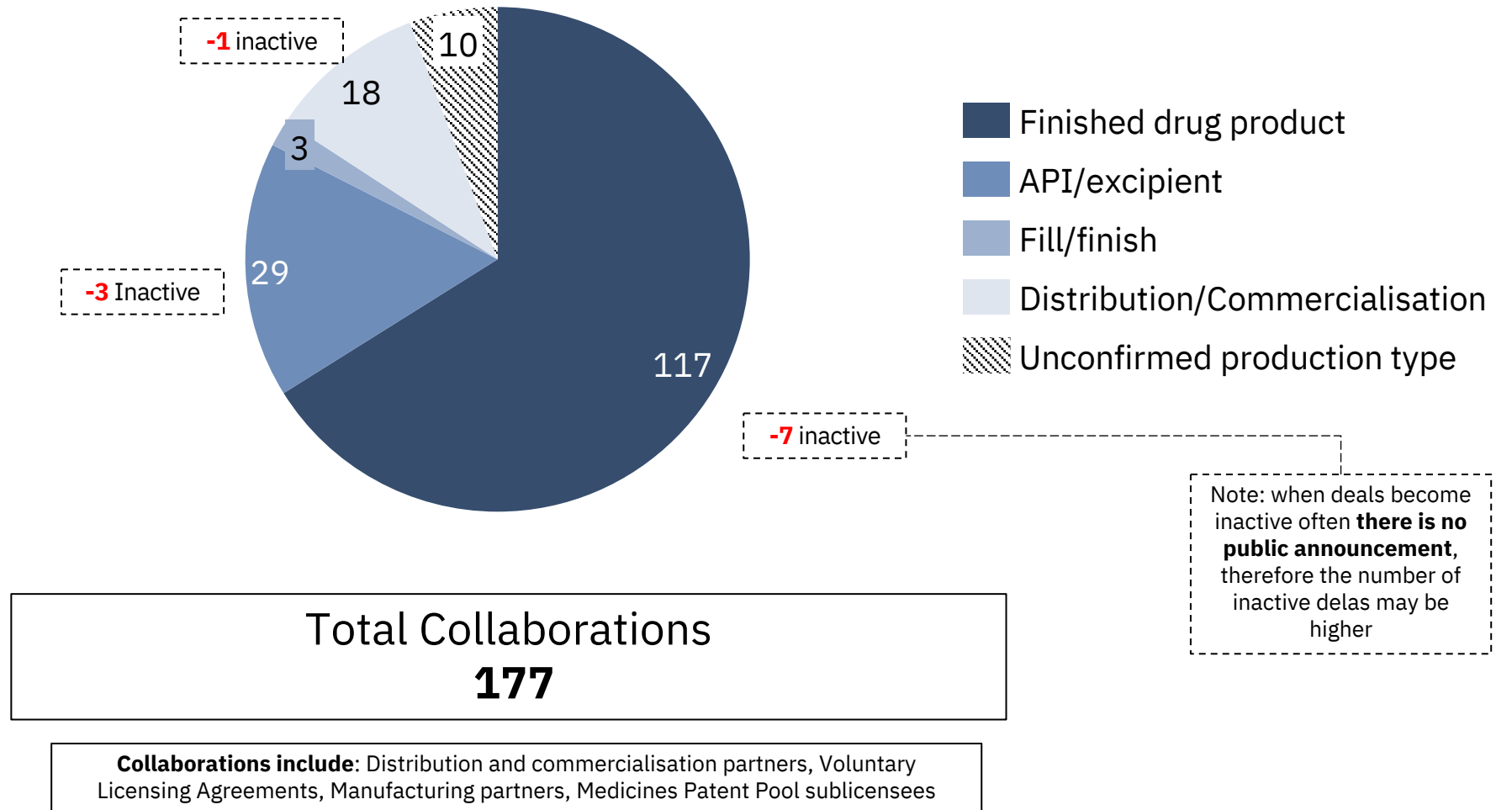
All countries have approved at least one COVID-19 vaccine

Overview of vaccines approved since the beginning of the pandemic



177 collaborations have been agreed for production and commercialisation of COVID-19 treatments

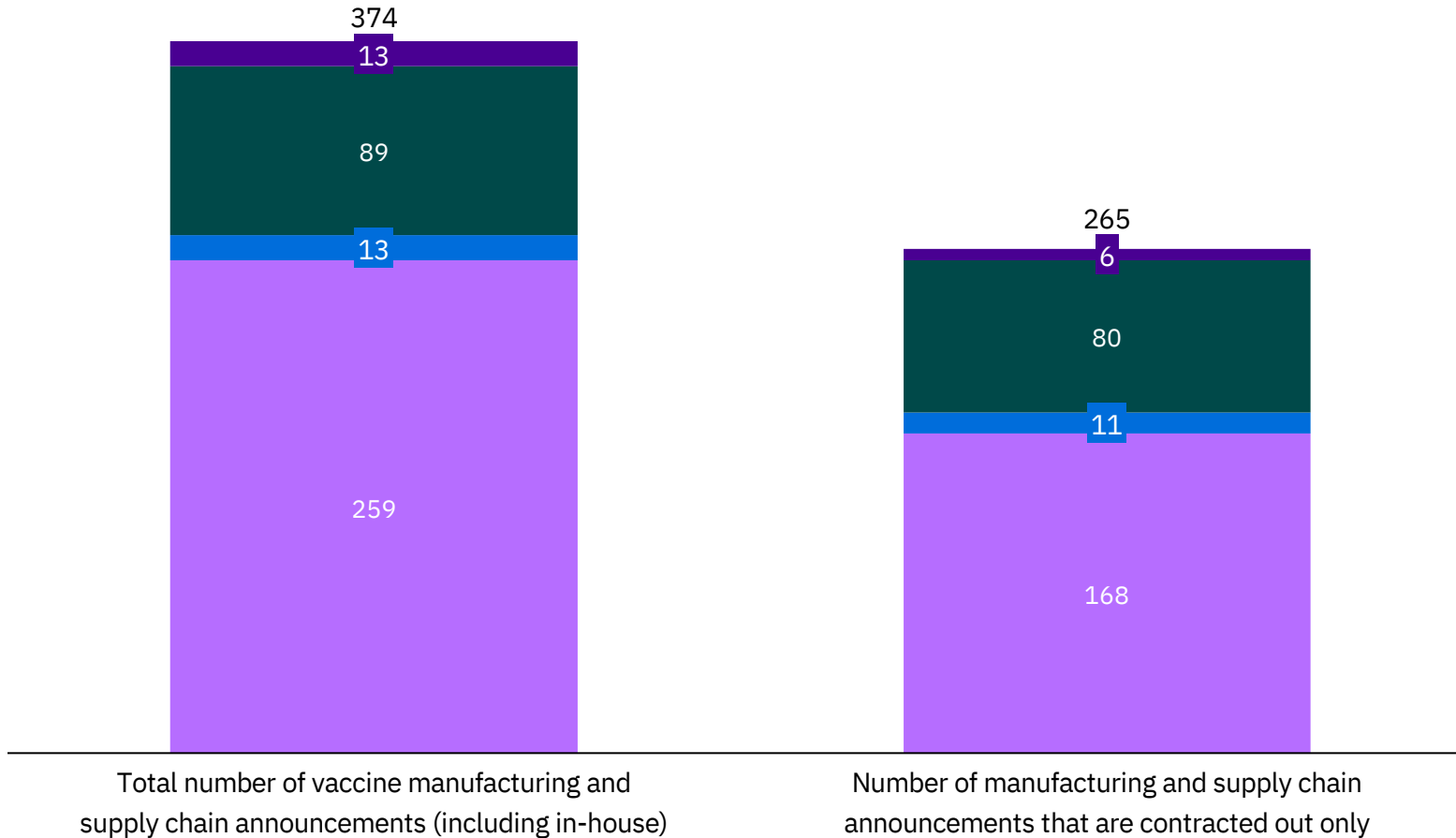
COVID-19 Therapeutic Collaboration Deals



Most of the vaccine manufacturing and supply chain announcements have involved a collaboration

An analysis of the number of collaborations confirmed for vaccine manufacturing

There have been 374 manufacturing announcements, 265 (71%) of which have involved a collaboration.



- Adjuvant
- Source of Materials
- Fill/Finish
- Tech

Definitions:

Adjuvant:
Public announcements to produce and supply adjuvant for vaccine formulations

Distribution and Storage:
Public announcements to distribute and/or store vaccines after production (separate from procurement deal)

Fill and finish:
Public announcements to fill and finish vaccines into vials and syringes

Source of materials:
Public announcements to supply raw materials for vaccine candidates

Tech:
Public announcements to produce active vaccines or vaccine components

84 out of 93 voluntary licensing agreements are active; 41 for Paxlovid, 34 for Molnupiravir and 9 for Remdesivir

Voluntary licensing agreements for Nirmatrelvir + Ritonavir (Paxlovid), Molnupiravir, Remdesivir

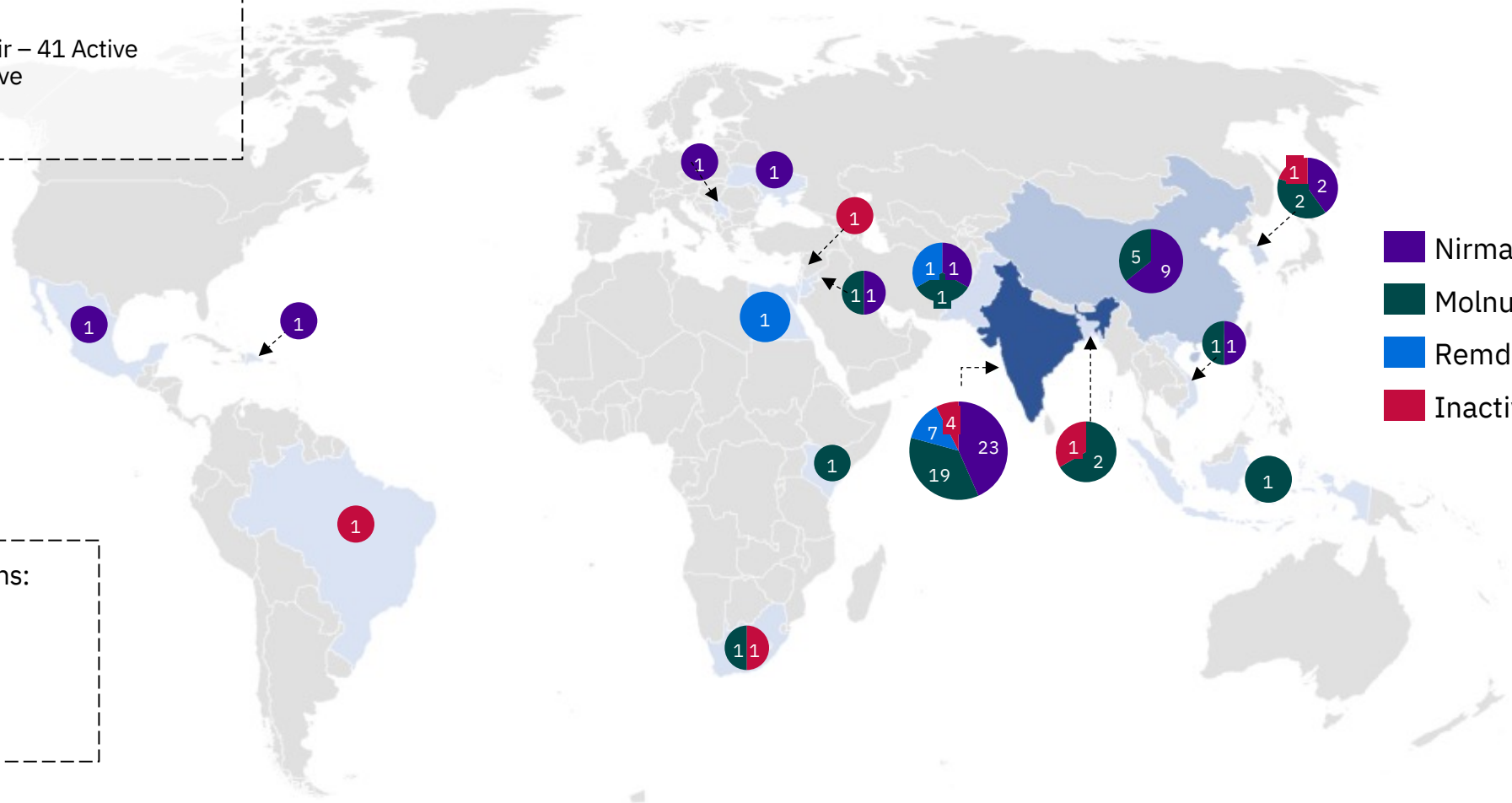
93 VLAs in total – 84 Active, 9 inactive (at least)

9 Remdesivir – all Active
 44 for Nirmatrelvir + Ritonavir – 41 Active
 40 for Molnupiravir – 34 Active

Outside of the originator

80 out of 84 active agreements are in developing countries*

- TOP 5 Licensee locations:
- India
 - China
 - South Korea
 - Bangladesh
 - Pakistan

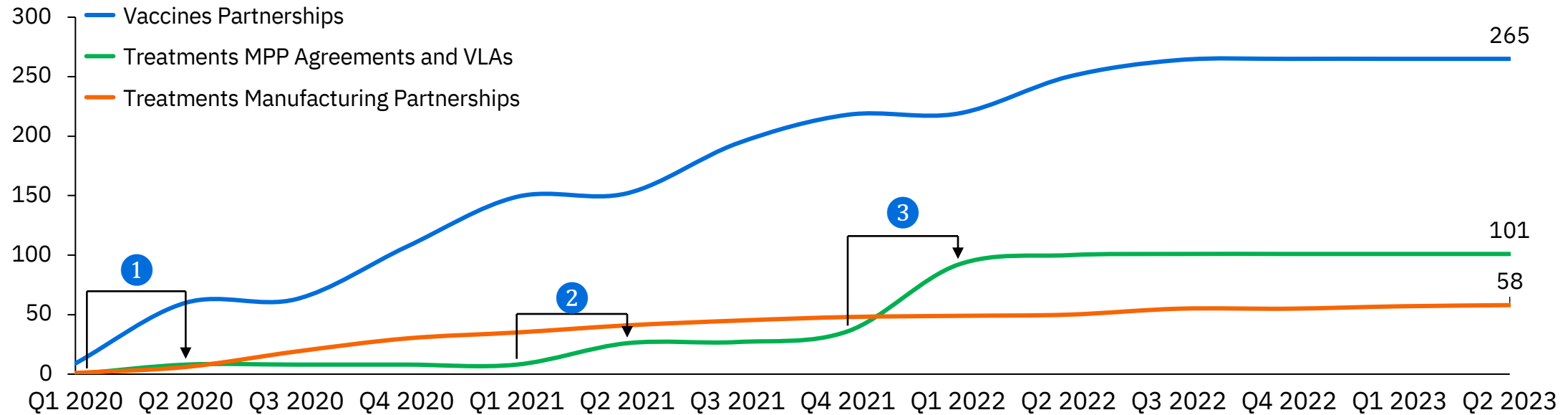


*Developing countries as listed by the OECD

Manufacturing partnerships for therapeutics and vaccines were signed in parallel

Treatments and vaccines production and agreements over time

COVID-19 Treatments and Vaccines Manufacturing Agreements



1 Gilead signs VLAs with 8 manufacturers for Remdesivir production.

2 MSD (Merck) signs VLAs with 9 manufacturers in India for Molnupiravir; Eli Lilly signs VLAs with 8 manufacturers for Baricitinib; 1 additional Remdesivir VLA signed.

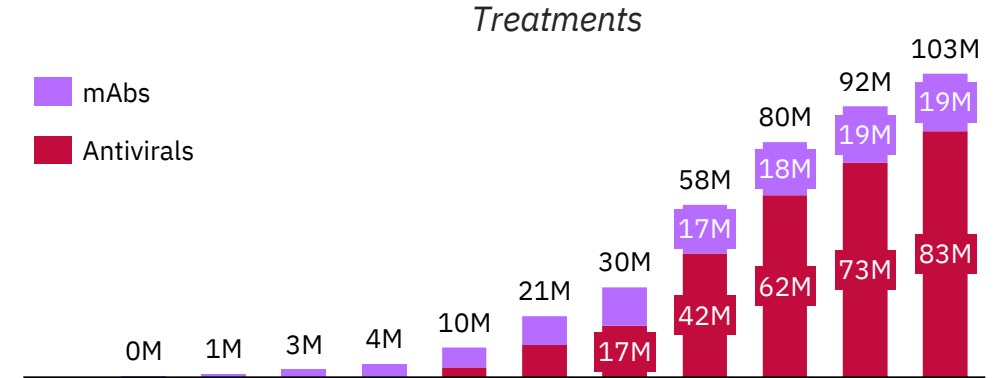
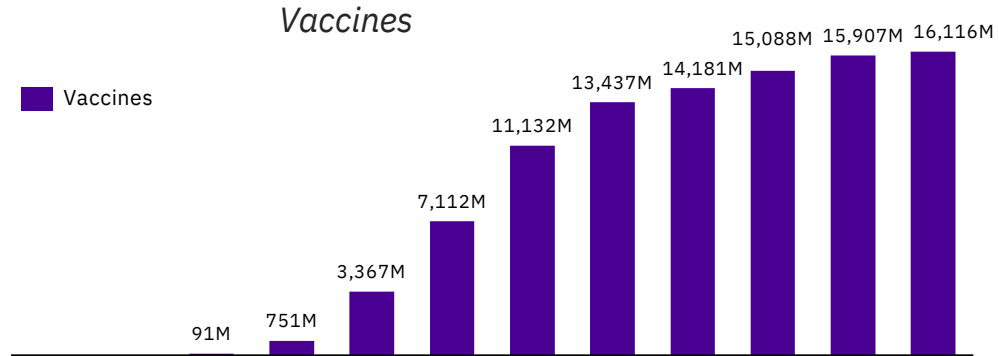
3 23 manufacturers sign up to manufacturer Molnupiravir through the MPP. 37 manufacturers sign up to manufacturer Nirmatrelvir + Ritonavir through the MPP.

COVID-19 therapeutics supply and production followed vaccines at the end of 2021

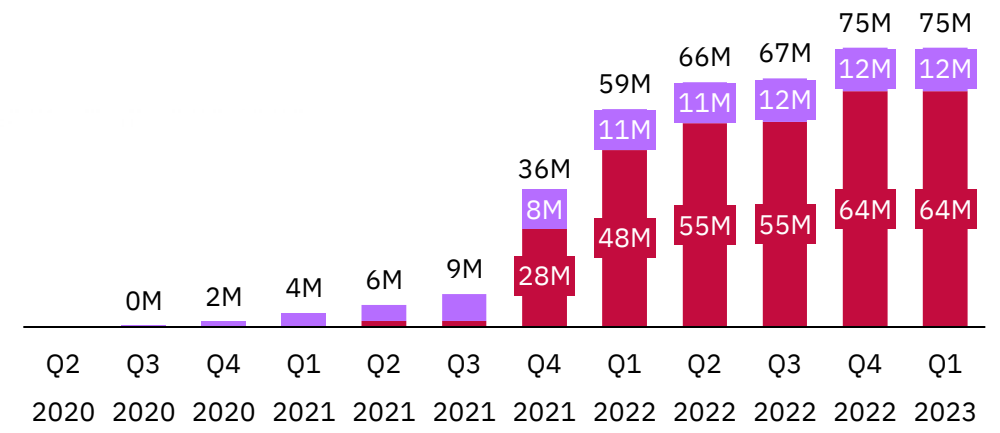
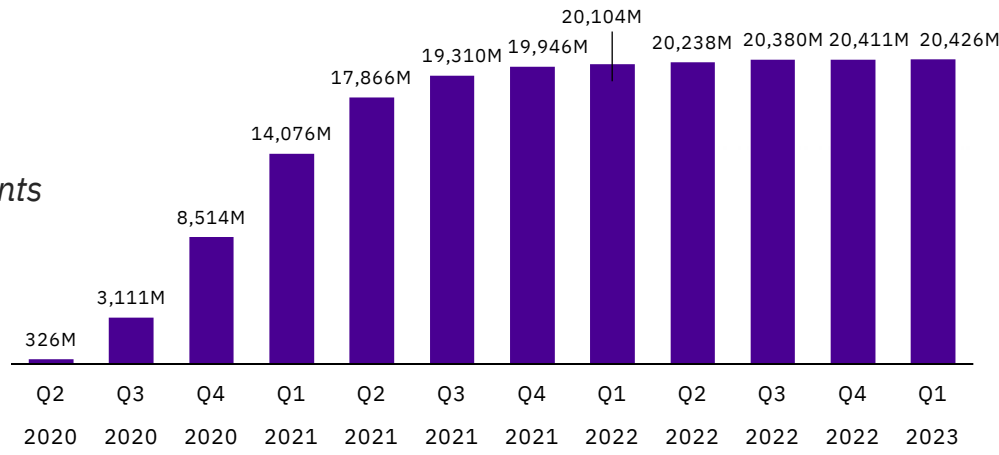
Overview of COVID-19 vaccines and treatments production and supply

Cumulative Production and Supply

Production



Supply Agreements



More info.

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Appendix: Abbreviations and Definitions

Abbreviations:

WTO: World Trade Organisation

LDC: Least-developed countries

MPP: Medicine Patent Pool

VLA: Voluntary Licensing Agreement

EUA: Emergency Use Authorisation

Definitions:

Repurposed: Candidates that have been repurposed from previously approved/discontinued indications to COVID-19

Novel: Candidates who's first approval was for the treatment of COVID-19

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