

WACKER

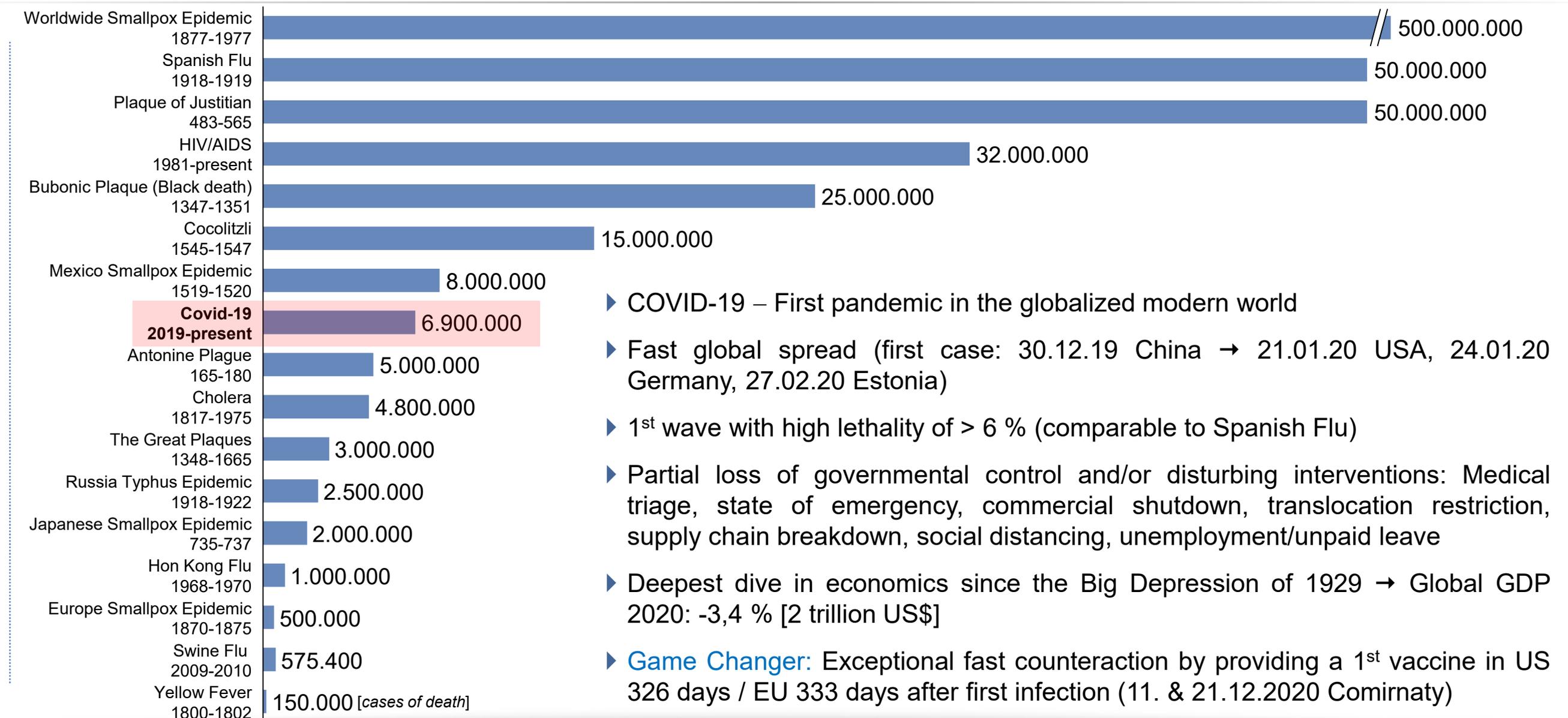
CREATING TOMORROW'S SOLUTIONS

Fast-Tracking an Estonian National Pandemic Preparedness Program - Be ready in 2025

Wacker Biotech - A Business Unit of Wacker Chemie AG

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PANDEMIC - A serious cross-border threat to national health, society and economy



- ▶ COVID-19 – First pandemic in the globalized modern world
- ▶ Fast global spread (first case: 30.12.19 China → 21.01.20 USA, 24.01.20 Germany, 27.02.20 Estonia)
- ▶ 1st wave with high lethality of > 6 % (comparable to Spanish Flu)
- ▶ Partial loss of governmental control and/or disturbing interventions: Medical triage, state of emergency, commercial shutdown, translocation restriction, supply chain breakdown, social distancing, unemployment/unpaid leave
- ▶ Deepest dive in economics since the Big Depression of 1929 → Global GDP 2020: -3,4 % [2 trillion US\$]
- ▶ **Game Changer:** Exceptional fast counteraction by providing a 1st vaccine in US 326 days / EU 333 days after first infection (11. & 21.12.2020 Comirnaty)

Strengthen resilience by preventive countermeasures - Pandemic Preparedness

Lessons learned: Speed does matter!

- ▶ Several national vaccination programs (e.g. Israel) enabled maximum speed in counteracting
- ▶ Providing a fast and proactive disease control by early availability of vaccines and launching one of the first nationwide immunization programs

Consequence: Be prepared!

- ▶ Ensure timely and adequate access to vaccines by reservation of manufacturing capacity
- ▶ Strengthen national independency from supply chain restrictions
- ▶ Prevent loss of governmental control over health, society and economy in case of a new pandemic
- ▶ Enable efficient vaccination of the Estonian population as early as possible.

Wacker Biotech offers:

- ▶ A strategy for immediate and fast vaccine production within 4 months (1.4 m doses)
- ▶ Validated by the German Pandemic Preparedness Program

Wacker Biotech ensures:

- ▶ Availability of manufacturing capacities
- ▶ Independence from supply chain restrictions
- ▶ Flexibility of vaccine to be produced (CDMO approach)

Wacker Biotech enables:

- ▶ Efficient protection of the Estonian population and economy
- ▶ Autonomous governance of pandemic event and self-determined action facing threats to health

Estonia's way to a National Pandemic Preparedness Program!

Wacker Biotech's capabilities:



Experienced manufacturer for mRNA vaccines [under pandemic conditions]



Certified by German Pandemic Preparedness Program



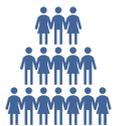
20+ years experience in early-stage projects and contract manufacturing



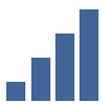
Adaptation of existing concept to national requirements within 2 months



Fast track stockpiling of material based on established contracts within 3 - 5 months



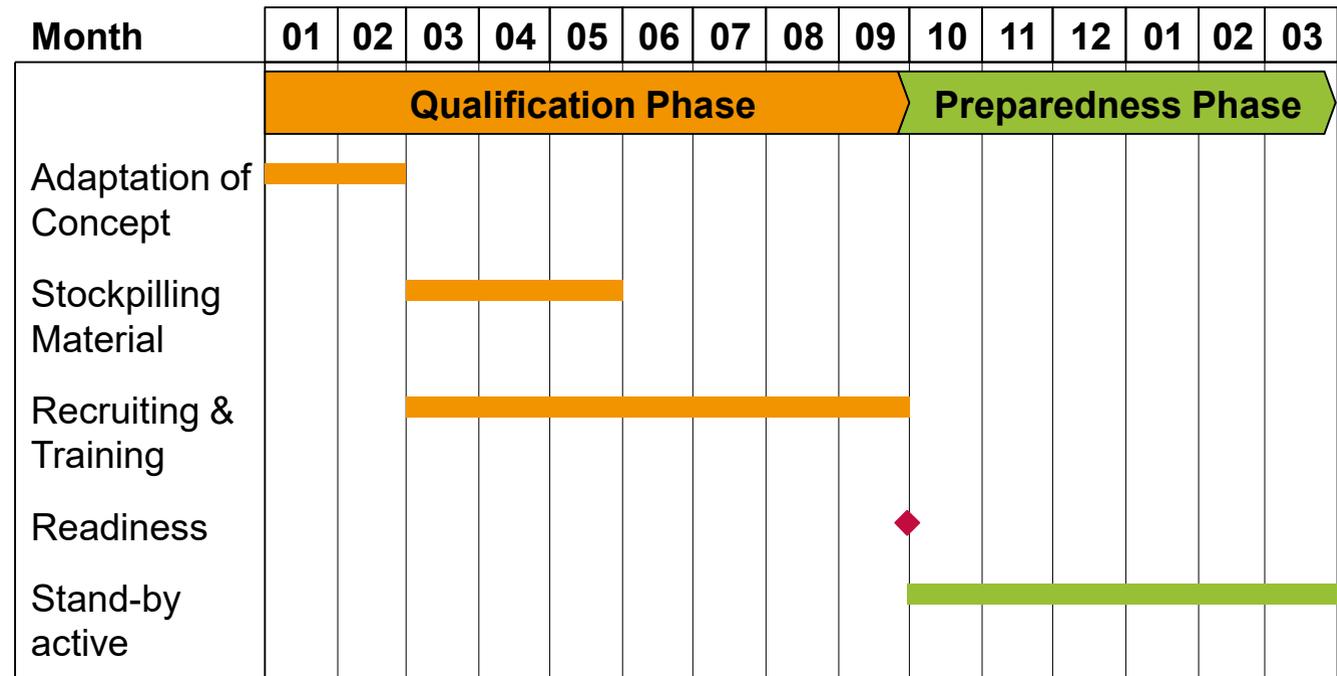
Staffing of additional personnel within 6 - 9 month possible



Reliable long-term partner backed by corporate structure (Wacker Chemie AG, DAX listed)

Overall concept:

- ▶ Capacity reservation contracts for flexible mRNA-manufacturing
- ▶ Including stockpiling of material, (human) resources and logistics management, regulatory affairs
- ▶ Active program management during stand-by phase



Cornerstones of a Pandemic Preparedness Program offered by Wacker Biotech



Facility: Multiple lines for *in vitro* transcription and LNP formulation up to 30 L start volume, permanent qualified state (“warm base”)



Manufacturing concept: Generic but flexible process approach enabling tailor-made manufacturing in a single-use setup (“ball room concept”)



Emergency change over: Process transfer and start of production within a 10-week period after call off



Logistics & Material Management: 1000 + palette places available to store and restock critical material up to 8 years



Supply chain: Contractual commitment of qualified suppliers for critical material



Staffing: 100 head count team dedicated to mRNA manufacturing with 200 nearby backup employees



Risk management: Multiple concepts to assure pandemic business continuity incl. contract templates



At a glance: Wacker Biotech's production site in Halle/Saale (Germany) - one of the most modern RNA-manufacturing facilities in the world



New facility (opening in 06/24)

- ▶ **Certified by the German Government for Pandemic Readiness** → provide 80 m doses vaccine p.a. in case of emergency
- ▶ **Multiple parallel programs possible**



Capex: By Wacker Chemie AG: triple digit million €



Cornerstones: Multipurpose facility

~ 3.000 m² on brown field

~ 8.000 m² facility space on 5 floors



Capacity: >200 batches and >>700 m doses mRNA vaccine p. a. on 4 manufacturing lines (0.5 - 30 L IVT)



Capabilities: Currently 100 highly educated staff (up to 200 possible)



Expertise: pDNA manufacturing, mRNA as well as LNP formulation, protein vaccines



Technology: Multiple application in infectious diseases as well as cancer or gene therapy/enzyme replacement

The next Pandemic may be just a footstep away...

CDC Avian Influenza (Bird Flu)
EXPLORE TOPICS Q_SEARCH

Current H5N1 Bird Flu Situation in Dairy Cows

WHAT TO KNOW
A multistate outbreak of HPAI A(H5N1) bird flu in dairy cows was first reported on March 25, 2024. This is the first time that these bird flu viruses had been found in cows. In the United States, since 2022, USDA APHIS has reported HPAI A(H5N1) virus detections in more than 200 mammals.



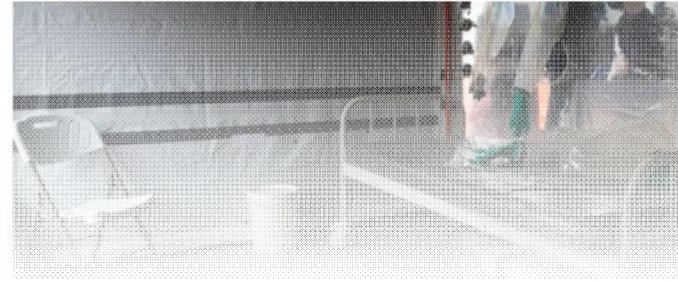
Jamaica's dengue fever outbreak shows the deadly effects of record heat

Georgiana Gordon-Strachan

The global failure to reduce fossil fuels is leaving small island states trapped in a constant cycle of fightback against disease and extreme weather
Read more: [Health of billions at risk from global heating, warns report](#)



Ebola Virus Outbreak



Mass outbreak of 'pink eye' closes 56,000 schools in Pakistan

Millions of children told to stay at home as 13,000 new cases of viral conjunctivitis are reported in just one day

3 October 2023 - 6:52pm



Tanzania announces outbreak of deadly Marburg virus disease

Five deaths and three further cases of the Ebola-like virus have been reported in the country's north-west



WHO expresses concern over monkeypox outbreak in DRC



...we are prepared and ready to support!

Contact

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**Wacker Biotech:
ENGAGE THE EXPERTS**

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