WHO-China Joint Mission on COVID-19

Key Findings at 3 March 2020
The Team & the Mission
The Mission – 4 provinces, China
China proves it can change the course of COVID-19 outbreaks
China’s differentiated approach averted 100,000s of cases
China is using fundamental public health measures...

- Universal population measures
- Case isolation & management
- Close contact quarantine
- Suspension of public gatherings
- Movement restrictions
Case Finding & Contract Tracing, China

Contact Monitoring & Support

Case Finding
Case Management, China

Mild cases

Severe cases
Wuhan
...with 5 key approaches to optimize for sustainability

- differentiating to each context
- mobilizing collective action
- repurposing the machinery of Government
- ‘turbo-charging’ with technology
- agile driving with the latest science
What China’s approach looks like in practice

A novel coronavirus was isolated by China CDC
Emergency monitoring, case investigation, close contact management and market investigation initiated, technical protocols for Wuhan released
NHC notified WHO and relevant countries and regions
Gene sequencing completed by China CDC

Huanan seafood wholesale market closed
Outbreak announced by WHC. NHC and China CDC involved in investigation and response

China CDC publicly shared the gene sequence of the novel coronavirus
NHC issued diagnosis and control technical protocols
NCIP incorporated as a notifiable disease in the Infectious Disease Law and Health and Quaranine Law in China
NHC started officially daily disease information release
State council initiated joint multisectoral mechanism
Wuhan implemented strict traffic restrictions
WHO announced PHEIC
Two new hospitals were established in Wuhan
Enhanced admission and isolated treatment of cases in Hubei
Resumption of labor and rehabilitation
Strategy and response adjustment

0 500 1000 1500 2000 2500 3000 3500 4000
Number of cases

Date of onset

First Stage
(before Jan. 19, 2020)
Second Stage
(Jan. 20-Feb. 7, 2020)
Third Stage
(after Feb. 8, 2020)
Why China’s approach seems to work

• **COVID-19 is not SARS & its not influenza**

• longer serial interval than flu (1-2 vs. 4-5 days)

• 2° attack rate of 3-10% (15%?)

• low prevalence in community samples

• vast majority of cases in close contacts

• potentially smaller role of children
China rapidly adapts strategy to its understanding of COVID-19

Onset → Lab diagnostic → Isolation/hospitalization → Moderate → Recovery

- Mild
- Moderate
- Severe
- Critical

Isolation/hospitalization → ICU → Death
In China, COVID-19 readiness goes beyond pandemic flu preparedness

• the ‘readiness mindset’

• immediate capacity (beds, oxygen, lab, CTs, PPE)

• massive workforces for case finding/contact tracing

• a fully aware & engaged population

• access to the best expertise
The big takeaway:

*COVID-19 can & should be contained*
Some Epidemiologic & Technical Insights, China
Some key epi/technical insights from China (1 of 3)

_Transmission dynamics:_

- there does not appear to be substantial virus circulation in the community (e.g. only 0.14% of 320,000 samples in Guangdong from Jan-Feb)

- the vast majority of cases arise from close contacts of symptomatic cases; 1-5% of 38,000 close contacts develop COVID-19 (based on carefully followed contacts in 3 areas)

- transmission in most settings is driven by family-clusters (i.e. 75-85% of clusters); we found no examples of children transmitting to adults

- the most careful studies of $2^0$ household attack rates suggest it was 10% early in the outbreak and fell to 3% with faster isolation

- transmission in other closed settings is happening but is not the major driver in China (e.g. nosocomial infections, nursing homes, prisons, restaurants)

- school outbreaks have not been a feature of this outbreak – this may simply be because of the closure of schools during most of this outbreak
Natural history:

- **at diagnosis**: approx. 80% are mild/moderate; 15% severe; 5% critical
- **progression**: approx. 10-15% of mild/moderate cases become severe, and approximately 15-20% of severe become critical
- **average times**:
  - from exposure to symptom onset is 5-6 days after infection;
  - from symptoms to recovery for mild cases is 2 weeks;
  - from symptoms to recovery for severe cases is 3-6 weeks;
  - from symptoms onset to death is from 1 week (critical) to 2-8 weeks.
- truly **asymptomatic** infection appears to be rare (e.g. 1-3%)
- an estimated 75% of ‘asymptomatic’ cases soon progress to disease
- **children** tend to have milder disease than adults; although COVID was less frequent in children & we did not see onward transmission from children, this may be an artifact due to school closures & other factors
Some key epi/technical insights from China (3 of 3)

**Virology**

- virus shedding is highest early in the course of disease (vs. SARS shedding which peaks at least 5 days post onset)
- virus shedding can be detected in the 24-48 hours prior to disease onset
- virus can be isolated from stool but there is not epidemiologic evidence of fecal-oral transmission
- virus shedding usually continues for 7-12 days in mild/moderate cases, and for >2 weeks in severe cases