Pivoting the Covid-19 Prevention Paradigm: From Anxiety to Self-efficacy

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I do not have a conflict of interest to report
How it began: Origins of SARS-CoV-2

- Bats original host
- ? Pangolins in Wuhan market - intermediate host
- Spike protein with high affinity for the ACE2 receptor

The Covid-19 pandemic

30 Dec 2019

ProMED
INTERNATIONAL SOCIETY FOR INFECTIOUS DISEASES

Published Date: 2019-12-30 23:59:00
Subject: PRO/AH/EDR> Undiagnosed pneumonia - China (HU): RFI
Archive Number: 20191230.6864153

Possible first infected person: a Hubei resident aged 55 on 17 Nov 2019

Countries reporting cases: 188
Total confirmed cases: >10 million
Deaths: >500,000
1. Person-to-person contact and droplets

Virus from the respiratory tract goes into the air and onto nearby people when an infected person talks, coughs, sneezes or simply exhales

South Korean call centre - 13 workstations per table
9/13 employees tested positive on one desk
79/137 employees (58%) tested positive. Prolonged close contact played a crucial role

Source: Polo B, *An analysis of three Covid-19 outbreaks: how they happened and how they can be avoided*
2. Infected droplets contaminating surfaces

<table>
<thead>
<tr>
<th>Sites</th>
<th>+ve samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed rail</td>
<td>1/1</td>
</tr>
<tr>
<td>Chair</td>
<td>1/1</td>
</tr>
<tr>
<td>Light switches behind bed</td>
<td>1/1</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>1/1</td>
</tr>
<tr>
<td>Air outlet fan</td>
<td>2/3</td>
</tr>
<tr>
<td>Door handle</td>
<td>1/1</td>
</tr>
<tr>
<td>Toilet bowl surface</td>
<td>1/1</td>
</tr>
</tbody>
</table>
3a. Airborne transmission

Particles < 5μm may remain in the air for long periods. Role of airborne transmission not settled.
3b. Airborne transmission

Person at table A arrived from Wuhan the day before

9 people tested positive, some were >1m away from patient 0

Air conditioning seems to have played a crucial role, as air was recirculated continuously between the 3 tables

Source: Polo B, *An analysis of three Covid-19 outbreaks: how they happened and how they can be avoided*
We are still learning how the virus spreads or doesn’t spread…

Black Lives Matter protests did not cause an uptick in covid-19 cases

Black Lives Matter Protests, Social Distancing, and COVID-19
Dhaval M. Dave, Andrew I. Friedson, Kyutaro Matsuzawa, Joseph J. Sabia, Samuel Safford

NBER Working Paper No. 27408
Issued in June 2020
The coronavirus prevention toolbox…

- Social distancing
- Hand hygiene practices - hand washing / sanitizing
- Cloth masks & cough etiquette
- Frequent environmental cleaning & fresh air ventilation
- Testing, isolation, quarantine & contact tracing
- Appropriate use of PPE
- Lockdown (extreme form of social distancing)
- Symptom screening
How our world changed….

Stay-at-home restrictions during Covid-19 pandemic

1 April

How our world changed….

86 countries on national or sub national lockdown

Stay-at-home restrictions during Covid-19 pandemic

1 April

How our world changed....

Stay-at-home restrictions during Covid-19 pandemic

1 May

Stay-at-home restrictions during Covid-19 pandemic

How our world changed….

Stay-at-home restrictions during Covid-19 pandemic

Note: There may be sub-national or regional differences in restrictions. The policy categories shown may not apply at all sub-national levels. A country is coded as having these restrictions if at least some sub-national regions have implemented them.
Limitation: Cases identified are underestimates. Almost all metrics to measure the epidemic growth, e.g., $R_0$, $R_t$, doubling time, depend on case identification and therefore on testing.
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Transitioning from anxiety to self-efficacy

Stay-at-home orders / Lockdown \rightarrow Living with the virus

Anxiety \rightarrow Agency \rightarrow Action \rightarrow Collective Action

Institutional power over all \rightarrow Individuals power within \rightarrow Motivated individuals power for preventive action \rightarrow Motivated communities power for collective action

Ubuntu

“I am, because you are”
Conclusion

• Effective prevention - address all three modes of transmission

• Prevention toolbox is well-stocked, but it needs a vaccine - we are learning more about this coronavirus each day

• Lockdowns can slow viral transmission and even achieve temporary containment – but are not sustainable for long periods

• As we shift from restrictions to living with the virus, we need to pivot our prevention paradigm from anxiety to self-efficacy

• Societies embracing community and individual interdependence are well placed to successfully pivot with the concept of “Ubuntu”