Pandemic Root Cause Analysis & Process Improvement Tool™

down2BAskills inc.

What a Pandemic Is

An Epidemic vs. a Pandemic

- A **pandemic** is the **global outbreak** of a disease. There are many examples in history, the most recent being the **COVID-19** pandemic. It is generally classified as an **epidemic** first, which is the **rapid spread** of a disease across a particular region or **regions**. *Source: www.livescience.com*
- **Occurs randomly**, but usually **decades apart**
- Most animals or humans **lack pre-existing immunity** to a pandemic virus
- Causes **severe** or **fatal infection,** (*e.g. in lungs) but* **efficiently transmits** first

Examples of Data to Monitor for Root Cause *(Not exhaustive)*

- **Pandemic** -> Virus Type, Target Geog, Symptoms, Outcomes, Typical Hosts
- **Environmental** -> Location -> Geology -> Proximity (e.g. to open water)
- **Principles** -> Trust -> Level of Trust in. a). Govt b). Biz c). Apps (e.g. Finance)
- **People & Culture** -> Age & Background -> Health Status -> Lifestyle & Diets
- **Politics** -> Political Climate -> Intl -> Fed -> Prov -> Municipal -> Org -> Team
- **Legal** -> Rules -> Intl -> Fed -> Prov -> Municipal -> Org -> Biz Rules
- **Business & Econ** -> GDP -> Financial Infra -> Pymt Processes (e.g. cash/less)
- **Processes & Procedures** -> Time & Manner -> Behavioural / Structural Rules
- **STEAM* Factors I** -> Healthcare Infra -> Quality of HC -> Healthcare Access
- **STEAM Factors II** -> Tech Infra -> Net Access -> Mobile Access (e.g. Type)

****STEAM** = **S**cience Technology **E**ngineering **A**rts **M**athematics*

Why Finding Root Cause Is Vital

Left unchecked, Pandemics Will Have an Exponential Impact:

- Spread rapidly across **international borders**
- Drive **high death rate / mortality**
- Disproportionately impact the **very old**, **very young** and/or **very sick**
- Overburden **medical staff** & **medical systems** *within weeks or days*
- Create global-scale **social disruption** (e.g. curfews, schools, mental health)
- Create global-scale **economic disruption** (e.g. transport, leisure, tourism)
- Create **cascading effect** on **global supply chains** (e.g. food, finance)

Explaining The Danger of Exponential Growth

A **chessboard** has **64 squares**. If **one grain of rice** were placed on the **first square**, then double the number was placed on the subsequent 64 squares, then the **total number of rice grains** on the board would equal **18,446,744,073,709,551,615**. *Much higher than most expect*.

Working Towards A Cure

- By definition, a pandemic has **no vaccine** at the outset.
- A ***proven*** **vaccine** will require at least **6 - 18 months to develop**
- **Producing, shipping** & **injecting** a vaccine will take ***even longer***
- Some **anti-virals** *may* be effective against a **pandemic strain**, but ***supplies will be limited***

Who Must Be Involved

- Engage multiple **STEAM Teams** skilled in **Advanced Pattern Recognition** including *(in alphabetical order)*:
  > **Astronauts & Engineers** (experts in Zero Margin of Error & Root Cause)
  > **Artists & Influencers** (creative thinking & social ntwk to get to root cause)
  > **Business Consultants** (process improvement)
  > **Developers / Engineers** (experts in software and hardware needs)
  > **Entrepreneurs** (experts in raising capital and getting products to market)
  > **Executive Sponsors** (fund and champion projects)
  > **Lean Agile Leaders** (provides agile direction, resources and goals)
  > **Locals Most Likely / Least Likely** to be Impacted by future outbreaks
  > **Medical Professionals** (all levels, both research and in-the-field)
  > **Pandemic Survivors** (clues to how and why they survived would be key)
  > **Public Relations Team** (orchestrate effective communication)
  > **Politicians & Civil Servants** (financial network & policy changes)
  > **Philanthropists** (experts in raising capital and getting products to market)
  > **Product Managers / Owners** (product improvements to prevent)
  > **Project Managers** & **Agile Scrum Masters** (responsible for projects)

How to Prevent a Pandemic

Review & Act On Latest World Health Organization Checklist

- Recommend that **global leaders** immediately **collaborate** & **calibrate** efforts outlined in the latest version of the **WHO's Checklist for Pandemic Influenza Risk and Impact Management**. See 2018 English version below: **https://www.who.int/influenza/preparedness/pandemic/en/**

Apply Proven World-Class Approaches to Problem-Solving

- Engage multiple **STEAM Teams** skilled in **Advanced Pattern Recognition**
- Explore **Human Needs** via **Maslow's Hierarchy of Needs** (+ Wi-Fi & battery)
- **Stephen Covey's 7 Habits of Highly Effective People©**
- **5 Whys** & **Ishikawa (Fishbone) Analysis** for **rapid troubleshooting**
- **(KT) Kepner-Tregoe Resolve** to find ***true*** **root cause;** *"Question to the void"*
- **Socratic Questioning Approach;** disciplined, rigorous, thoughtful questions
- **Agile Hybrid principles & practices** to drive out **valuable solutions** faster
- **Artificial Intelligence** & **Quantum Computing** solutions to **crunch numbers**
- **Lean Mobile Research Approach™** to generate **innovative solutions:** slideshare.net/SteveDowner/lean-mobile-research-approach-v45

Need Ability to Prepare to Overcome Massive Challenges

- Emphasis on **collective ownership of a common threat => greater buy-in**
- **Tackle simultaneous global outbreaks** (see checklist above)
- **Manage successive waves** of pandemic over **long-term**
- **Run essential services** with as much as **1/3 workforce absent / unavailable**
- **Think globally; act locally** (e.g. local hospitals must be ready to cope)
- This tool **expedites a solution** by **reducing re-work** (still validate & verify!)

Where to Find Supporting Answers

- **History offers many insights into** future events and human reactions to them. Research causes and outcomes of previous pandemics including:
  > **The Spanish Flu** (1918 – 1920)
  > **HIV/AIDS** (Circa 1972 to Present)
  > **SARS** (2002 – 2003)
  > **MERS** (2012 – Present)
  > **Coronavirus COVID-19** (2019 to Present)

- Examples of **Trusted Institutions** to **leverage, inspect** & **adapt**:
  > **Health Canada** (canada.ca/en/health-canada.html)
  > **International Institute of Business Analysis** (iiba.org)
  > **Kepner-Tregoe Problem Solving & Decision-Making** (kepner-tregoe.com)
  > **Scrum Alliance** (Agile, Hybrid & Product Mgmt Skills) (scrumalliance.org)
  > **United Nations Children's Fund** a.k.a. UNICEF (unicef.org)
  > **World Health Organization** a.k.a. The WHO (who.int)
  > **Top Global or Ntl Tech Companies** willing to share / donate resources

When to Prevent a Pandemic

When to Engage Preparedness Plans

- As soon as sustained **human-to-human transmission** has been confirmed anywhere in the world
- **Ongoing inspection** and **adaption** beyond the pandemic to ensure **more effective response** next time one occurs

Sources: www.merriam-webster.com, www.iiba.org, www.wikipedia.org, www.who.int, Indiana State Department of Health, www.thenounproject.com