**History of Pandemics**

**Throughout history**, as humans spread across the world, infectious diseases have been a constant companion. Even in this modern era, outbreaks are nearly constant.

Here are some of history’s most deadly pandemics, from the Antonine Plague to COVID-19.

- **Black Death (Bubonic Plague)**: 1347–1351
- **Smallpox**: 1520
- **Spanish Flu**: 1918–1919
- **Russian Flu**: 1889–1950
- **HIV/AIDS**: 1981–present
- **SARS**: 2002–2003
- **Ebola**: 2014–2016
- **Swine Flu**: 2009–2010
- **COVID-19**: 2019–present

**Death Toll (Highest to Lowest)**

- **Smallpox**: killed an estimated 90% of Native Americans. In Europe during the 1800s, an estimated 400,000 people were killed by smallpox annually. The firstever vaccine was created to ward off smallpox.
- **Spanish Flu**: The death toll of this plague is still under debate as new evidence is uncovered, but many think it may have helped fiction the fall of the Roman Empire.
- **Russian Flu**: A series of Cholera outbreaks spread around the world in the 1800s, killing millions of people. There is no solid consensus on death tolls.
- **Asian Flu**: 1957–1958
- **HIV/AIDS**: 1981–present
- **Antonine Plague**: 165–170
- **Bubonic Plague**: 1347–1351
- **Spanish Flu**: 1918–1919
- **Russian Flu**: 1889–1950

**Visual Capitalist**

Sources: CDC, WHO, KHIC, Healthcare Insights, Encyclopedia Britannica, Johns Hopkins University

*Johns Hopkins University estimates*

The COVID-19 pandemic is what planning experts call a “wicked problem”—one that is difficult to solve because of radically incomplete information, rapidly changing requirements and multiple, sometimes contradictory objectives coupled with interdependent social complexities.

No one wants to contract COVID-19, but many want to get back to work and resume a more normal existence. Still, most people understand that the new normal will be different, and our leaders should not pretend otherwise.

Leadership requires leveling with the people about the uncertainties and trade-offs we face.

With breathtaking speed, the COVID-19 pandemic has triggered a national emergency on a scale that dwarfs 9/11 and the financial crisis of 2008–09. The rise in unemployment during the month of April wiped out a decade of job growth, and the death toll from the disease has surged toward 100,000 with no end in sight. The need for effective leadership at every level has never been greater, and the margin for error has rarely been lower.
Pandemic Control Actions

Prevent
- Safe Practices
  - “Stay at Home”
  - “Safer at Home”
  - “Act with Care”
- Traveler Quarantine
- Vaccines

Detect
- Disease Surveillance (high risk venues)
- Testing
- Disease Trends
- Infection Sources

Contain
- Cases
  - Investigate
  - Isolate
  - Monitor
- Close Contacts
  - Trace
  - Quarantine
  - Monitor
  - Test

Treat
- Outpatient and/or Hospital
- Symptom Management
- Life Support
- Treatment drugs
- Convalescence and Rehabilitation

Total Cases: 2,425

Disease* Onset Date

* When symptom onset date is not available, test date is used
* Illnesses that began in the past 10 days may not yet have been reported

State Epi Curve
August 3, 2020
Confirmed COVID-19 Cases by Exposure, Kauai 2020 (N=47)

Data as of August 3rd, 2020. All cases to date may not be included because of missing or pending data.

Exposure
- Community
- Travel-associated contact

Exposure Type: Filter
- (All)
- Community
- Travel
- Travel-associated contact

Kauai Epi Curve
August 3, 2020
The exact moment Douglas got word of Kauai's quarantine rules
Safe Practices

State Department of Health Reopening Hawai‘i: Safe Practices

- **Hand hygiene**: Hand washing and/or 60% hand sanitizer facilities available in work and public settings for use by employees and the public.
- **Home if ill**: Stay home if ill (except to seek care—call first).
- **Face covering**: Cloth face coverings to be worn at all times by employees and the public when outside the home and around others who are not members of the same household.
- **Surface cleaning**: Regular cleaning/disinfection of surfaces and objects touched by the public and employees.
- **Physical distance**: Maintain 6 feet distance between ALL individuals to the fullest extent possible.
- **Protect high risk**: Limited in-person visits to nursing homes, hospitals, congregate facilities. Those at higher risk for severe illness advised to minimize time and activities outside the household.
- **Isolation**: Isolation of cases either in home or in facility, under DOH monitoring & direction.
- **Quarantine**: Quarantine of contacts of cases either in home or facility, under DOH monitoring & direction.

The following guidelines serve as a baseline for safe practices. Industry-specific higher standards of safety and protection, such as those issued by OSHA, NIOSH, CDC, and industry organizations, shall be observed as well. These guidelines apply to public-facing workplaces as well as to break rooms, meal times, and employee locker rooms.
Practical Metrics to Support...

- Data driven decision-making
- Evaluating & monitoring policy impacts
- Public confidence/understanding
- Effective leadership and action
- “Common Operating Picture”
- Efficient use of resources—collect what’s useful and use what is collected
Decision-Making Metrics

**Prevent**
- National Picture
- Mask Compliance
- Food Service Compliance

**Detect**
- Disease Epi Curves
- Testing
- Sources of Exposure

**Contain**
- Timely Case Investigation & Contact Tracing
- Isolation & Quarantine
- Testing Time

**Treat**
- Hospital Beds
- ICU Beds
- Ventilators
Putting Data into Practice

Decision Making

Impact assessment

A “Wicked Problem”
Mahalo...Questions?

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