

# Continuity of Accelerator Operations for Jefferson Lab

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# **This talk to cover the following:**

- **Acute and chronic pandemic conditions**
- **Operational challenges during a chronic pandemic or period of high or prolonged absenteeism.**
- **Laboratory versus Operation's continuity of operations plan**
- **Minimizing the spread of illness in the control room.**

# Acute versus Chronic Pandemic Conditions

## Acute pandemic

- Very fast spread of illness
- Declared medical emergency
- Laboratory closure
- Government restrictions on travel
- Emphasis is on “social isolation”

## Chronic pandemic

- Gradual increase in absenteeism
- No declared medical emergency or government restrictions on travel
- Laboratory doesn't close but absenteeism continues to increase to a level that impacts minimum control room staffing requirements

# Reunion Island

- Reunion Island experienced a prolonged period of growing absenteeism that eventually brought the island to a virtual standstill in 2005.
- The chikungunya virus was gradually spread by mosquito to ~255,000 of its ~774,000 population over a period few weeks.
- No pandemic was initially declared and healthy people continued to work.
- Eventually the island infrastructure came to a virtual standstill when up to 30% of the work force was out sick.

# Operations Needed a Continuity of Operations plan

- With the potential for an H1N1 outbreak in 2009 a plan was needed to address continued accelerator operations during periods of high absenteeism.
- The Jefferson Lab institutional pandemic plan did not address operational issues such as minimum staffing requirements, operational safety, and continued accelerator operation.

# Jefferson Lab pandemic plan

Addressed the typical work place environment and was not very applicable to control room operations.

- “Liberal leave” for employees
- Meetings limited to 6 people
- Work from Home or “social isolation”
- Telecommuting
- Sick staff wear masks
- Disinfect facility before return from a lab closure

# Operation's plan

- Extend working hours
- Extend number of days on shift
- Limit vacation
- Stop accelerator operation for specific shifts and place the machine in “Hot Standby”
- Stop beam delivery to one or more active experiments
- Crew Chief “field promotion” for a Senior Operator that is advanced in their Crew Chief training.
- On a limited basis control room staffing can be reduced to one Crew Chief and one Operator augmenting the shift with:
  - Previously qualified Crew Chiefs or Operators
  - Accelerator physicist
  - Injector System Owners or Subject Matter Expert
  - RF System Owner or Subject Matter Expert
  - Magnet System Owner or Subject Matter Expert
  - Safety System Owner or Subject Matter Expert
  - Staff that have Radiation Monitor training

# The Continuity of Operations Plan can also be implemented for other scenarios.

- Inclement weather
  - Snow storms
  - Ice storms
- Civil Unrest
- Localized Natural Disasters such as:
  - Tornado
  - Coastal flooding
- Limited budget or hiring freeze
- Multiple resignations or retirements
- **Operators lottery pool hits the big one!**



# Minimizing the spread of illness in the control room environment

## Administrative

- “Social distancing” versus “social isolation”
- Maintain 2 meters between coworkers when possible.
- Dedicated workstations separated by 3 meters.
- No sharing phones or chairs
- Limit control room access to essential personnel
- Minimize contact with sick people, strongly encouraging sick staff to go home
- Ops staff to receive first batch of vaccine
- Assign common tasks such as Safety System Operator to just one person.
- Limit common food sharing, cooking and storage
- Provide tissues, hand sanitizer and disinfecting wipes

## Hygiene practices

- Sanitize work station, phones and control knobs at the beginning and end of each shift.
- Issue Operators their own keyboard and mouse for common workstations.
- Encourage the frequent use hand sanitizer during the workday.
- Discourage handshaking or other physical contact between employees
- Control sneezing and coughing



Center for Disease Control photo Credit: CDC/James Gathany

Sneezing can produce particles traveling up to 80 km/hr  
Most heavy water particles drop to the ground within 2  
meters.

# Summary

- The typical accelerator control room is a unique environment with closely interacting people using common workstations, controls and telecommunications that can quickly transmit common illnesses. In the event of chronic pandemic conditions additional administrative protocol may need to be implemented to satisfy staffing shortages and minimize the potential for spreading illnesses in the control room.
- Develop a plan in advance that is tailored to your control room environment and minimum staffing requirements.
- Proactively encourage control room staff to develop good hygiene practices in advance of a pandemic
- Provide tissues, masks and sanitizing supplies for control room staff.
- Train staff on your plan.