

Getting Science Back to Sea

Preparing for Cruises & Questions to Ask 29 MAY 2020

Meeting Agenda

Risk Assessment Methodology

□ Risk Categories

□ Risk Analysis

Cruise Planning Considerations
 Mobilization/De-mobilization
 Science Party & Equipment Preparation
 At-Sea Safety and Vessel Operations Mgt Plans
 Case Studies
 Scheduling in 2020 and 2021

Risk Assessment Methodology

Clearly identify the risk to be assessed

Science Cruise, Departing vessel, etc.

Form a knowledgeable working group to discuss risks

 Ensure good mix of people from various facets of Sci Mission and Vessel Ops

Discuss all potential risks and identify resources:

- Local, State, Federal, & Country Guidelines
- Regulatory Guidance: USCG, ABS
- Port Authorities: Domestic & Foreign
- Institutional Policies
- UNOLS COVID-19 Considerations, Updated 15 April 20
- UNOLS GW Medical Guidance

Finalize risks and develop mitigation steps

Present final determination



Risk Analysis Process & Categories

Risk Analysis

Risk Probability (%) = Likelihood * Consequence

- Low = Mitigation steps not needed
- Medium = Mitigation steps may be needed
- High = Mitigation steps required

Risk Rank	Min	Max		
Low	1%	16%		
Medium	16%	48%		
High	60%	100%		

		Likelihood				
		1: Unlikely	2: Possible	3: Quite Possible	4: Likely	5: Very Likely
Consequence	1: Negligible	Low Risk	Low Risk	Low Risk	Medium Risk	Medium Risk
	2: Slight	Low Risk	Low Risk	Medium Risk	Medium Risk	Medium Risk
	3: Moderate	Low Risk	Medium Risk	Medium Risk	Medium Risk	High Risk
	4: High	Medium Risk	Medium Risk	Medium Risk	High Risk	High Risk
	5: Very High	Medium Risk	Medium Risk	High Risk	High Risk	High Risk

Risk Categories

- Medical Policy
 - **Testing**, temperature, isolation, med evac
 - Shore v. Ship

Cruise Logistics

- Travel, Pandemic status
- Science Party
 - # of Scientists, Equipment prep/delivery

Vessel Operations

- Policies: COVID-19 mgt plan, cleaning, social distancing
- Crew Safety

Risk Analysis and Determination

Suggested Determination Documents

- Risk Analysis Summary
- Science Mobilization & Mission Plan
- Vessel Cruise Summary
- Port Agents and Ports Information Summary
- Shipboard communications plan
- Shipboard COVID-19 plan
- Presentation to explain determination
- Funding Agency Concurrence (ONR, NSF, etc.)



Considerations for Cruise Planning

Understanding host vessel protocols

Prescreening

Who is your science team? What are their health risks? What is their comfort level? Who are your alternates?

Testing & Self-isolation

- Is testing available? On what timeline?
- Can your team self-isolate? Does this require travel ahead of time to isolate in origin port? What is the duration of isolation required?

Monitoring

Self-monitoring and reporting before boarding

Mitigation

• What steps can be taken if a key person can not sail?

Implications for Science Mission Planning

- □ Are ports changed?
- □ Is cruise length altered?
- Do you scale back/merge science mission?
- What about ancillary science objectives?
- □ Will your equipment and instruments be ready?
- □ Is telepresence an option? On what scale?
- Can all critical team members sail? Do you have alternates?
- Lay out a plan that lists your priorities, expected schedule, operational recommendations and safety requirements
 - WHOI personnel joining an outside vessel can do this to ensure WHOI requirements are discussed
 - Outside scientists can do this for setting expectations with WHOI as an operator
 - Make it a living document to share with your whole team to communicate updates

Considerations for Mob/Demob & Travel

□ Institution & Operator policies related to the cruise

- Home v Host Policies
- Vessel Specific & Facilities Access

Travel challenges & logistics

- Foreign v Domestic
- Routing
- Current guidelines (federal, state, local) for sheltering in place

Supplemental Funding Opportunities

Program Managers

Integration of science with ship

Shipping & Loading logistics to minimize contamination

Considerations for being at Sea

Does the ship have a standard safety/medical response plan?

- How many trained medical officers onboard?
- Is there a shore-side medical provider?
- □ Is there a COVID-19 response plan?
- □ Is there a social isolation plan onboard the ship?
- What are the shipboard cleaning policies?
- What are the meal preparation and galley procedures?
- What are the workspace & common space distancing plans?

Outside Institution Approaches



- □ July Start Date
- US Ports
- Self Prescreening
- Testing>Self Quarantine>Testing
- □ Reduced science party/ PPE



- R/V Polarstern MOSAiC Arctic Expedition
- International Participants
- □ Testing>Self Quarantine>Testing
- International flight/ PPE
- Testing>Quarantine>Testing
- □ Sign on vessel/ PPE



- July Start Date
- US Ports
- Self-Prescreening
- Testing>Self Quarantine>Testing
- □ Full science party (ROV)/ PPE



R/V Healy Hab Cruise
No testing
Quarantine off shore- not popular
July Cruise cancelled



- ☐ 01 July Start
- 14+ days prep for ships (exceptions for emergency/hurricane response)
- Prescreening
- TBD Ports, Tests, PPE



- May Start Date
- US Ports
- □ Prescreening
- □ Testing>Self Quarantine>Testing
- □ Reduced science party/ PPE

Vessel & Vehicle Scheduling 2020 & 2021

2020 Programs have been deferred or reduced schedules **US ports only** for remainder of the year

- Equipment & data recovery for long running programs are a priority
- Cruises close to port are preferred

- Institutions have different approaches to managing **COVID** risks
- Reduced science operations & party
- Self-isolation 2 weeks prior to cruises
- Time is being added in-between cruises for cleaning
- Risk assessments to be approved by all parties (Science, operator, ONR & NSF etc.)
- 2020 schedules to be RE-published

Woods Hole Oceanographic Institution

2021

- Funding agencies now shifting attention to 2021
- Program priorities have not been vetted yet by funding agencies
- Foreign port calls have not yet been approved

Case Study: ATLANTIS MLR Transit Early Departure

Goal: Obtain approval for the R/V *Atlantis* to sail early to MLR Shipyard

- ~30 Day transit, 21 Shipboard Crew, 2 SSSG Techs
- 25 Risks Identified: 1 High, 14 Medium, 10 Low
- Developed transit plan to mitigate High and Medium Risks
 - Transit to stay close to shore, Identified Refuge Ports, Closely monitor Panama Canal status
- Obtained ONR, WHOI Sr. Admin and NSF Approval
- R/V Atlantis successfully transited from WHOI to Anacortes, WA: 16 April – 13 May 2020



Case Studies – OOI Pioneer on Neil Armstrong

INITIAL SITUATION

Goal

 Gain consensus that an OOI Pioneer mooring turn can be conducted at sufficiently low risk

Initial Scope

 WHOI-WHOI, 21-day mission, two legs, up to 42 on board (24 crew, 16 science, 2 SSSG), multiple non-local participants

Initial Risk

36 risks identified, 20 High, 16 Med, 0 Low

OUTCOME AFTER MITIGATION

Mitigation

 Extensive effort among stakeholders to develop a risk mitigation plan spanning pre-cruise preparation to onboard procedures.

Reduced Scope

11-day mission, one leg only, 35 on board (24 crew, 9 science, 2 SSSG), 2 non-local participants

Mitigated Risk

- **3**5 risks remaining, 0 High, 14 Med, 21 Low
- Cruise to take place 7-17 June

Tioga Returning to Sea

- Have been conducting AUV, Glider ops and CTD sampling since late March
- 3 Science Personnel Max on board
- Science to provide own PPE's (masks, vests, hard hats and boots)
- Science to provide own lunches and drinks
- Science to social distance as much as possible while on board
- Vessel is fully sanitized after each mission
- Wheelhouse off limits
- Daily Self Assessments required
- https://whoiforms.whoi.edu/tioga-shiptime-request/
- Contact Eric Benway and Peter Collins for questions

Visiting Vessels at WHOI

SCHEDULE

- Supervisor's Permission
- Link to WHOI chartering website
- Email <u>charters@whoi.edu</u>
- Vessel Documentation
- Mob/ Demob dates
- List: Science Party & Mob Team
- Load Plan* (Dock Maintenance 6/8)
- Deliveries
- On/Off Signers

REPORT

- Submit Charterer's Covid19
 Policy & Safety Plan
- Covid19 Self Assessment:
 - whoiforms.whoi.edu/dailycheck-in/
 - Start reporting prior to departure from last port
- Daily reporting for dock access. List your "Supervisor" as the contact
- Notify <u>SSPI@whoi.edu</u> to receive access to the WHOI dock
- Have your clearance with you (digital or printed)

SAFETY

- Check in at security
- Wear gloves
- Wear mask over nose & mouth
- Eye protection
- Social distancing on dock
- When onboard, follow vessel's safety guidelines
- Emergency contacts for operator & family

* Red indicates new procedures

END

- Panelists include:
 - **Rob Munier** VP for Marine Facilities & Operations
 - **Kathi Benjamin** Chief HR Officer
 - Al Plueddemann PO Senior Scientist & OOI Pioneer Chief Scientist
 - **Tim Twomey** Director of Ship Operations
 - **Eric Benway** Port Captain
 - **Pam Clark** Marine Ops Project Manager
 - **Derek Bergeron** Captain
 - Kent Sheasley Captain
 - **Kerry Strom** Marine Operations Coordinator
 - **Kim Malkoski** Charter Vessel Coordinator
 - **Sarah Fuller** Research Vessel Science Coordinator

Preparation Team – Risk Identifications

- What is the risk of mobilization team being infected during cruise preparation, if diagnostic testing IS available?
- What is the risk of mobilization team being infected during cruise preparation, if diagnostic testing is NOT available?
- What is the risk of mobilization team being infected during cruise preparation, if diagnostic testing NOT available and temperature screening not allowed?
- Will science equipment be ready for the cruise given supply chain problems, shipping delays and restrictions to on-site work?
- Will science team be available for equipment prep given restrictions to on-site work? Will they be able to conduct the necessary work?
- Will the prep and dock mobilization team be isolated from the science party and crew? Will the prep and dock mobilization team be isolated from the science party and crew?

Cruise Logistics – Risk Identifications

- □ Is effective COVID-19 testing available and in place?
- What are the virus infection rates for the ports of origin and return, where are they on the "epidemic curve"?
- What are current rules (federal, state, local) for sheltering in place, have those rules been lifted for the start/end ports?
- □ What are institutional policies relating to the cruise?
- Domestic or foreign port, air travel necessary?
- Distance from port?
- □ Length of cruise?
- Are personnel originating from or transiting through regions of significant infection?
- Can telepresence be used to reduce onboard crew needs?

Science Party – Risk Identifications

- □ Can the cruise operate with fewer personnel?
- □ Are there sufficient science personnel to complete the science mission?
- Science party with pre-existing conditions leading to increased health risk if infected, screening questions not allowed?
- Science party with pre-existing conditions leading to increased health risk if infected, screening allowed and conducted?
- □ Science party personal or family health/safety concerns?
- □ Will the science party change between cruise legs for a multi-leg cruise?

Shipboard Policy – Risk Identifications

- □ Will there be a medical professional onboard?
- □ Is there an outbreak management plan?
- □ Is there a social isolation plan onboard the ship?
- □ What are the shipboard cleaning policies?
- □ What are the meal preparation and galley procedures?

Medical Policy – Risk Identifications

- □ Will there be a pre-cruise questionnaire for screening of participants (3 weeks prior to cruise)?
- □ Will there be a follow-up questionnaire for screening of participants (immediately prior to departure)?
- □ Will there be diagnostic testing (COVID-19 test) of the crew before the cruise?
- □ Will there be diagnostic testing (COVID-19 test) of the science party before the cruise?
- □ What is the reliability of COVID-19 test kits?
- What if self-isloation is not effective? Isolation is on the honor system, and unforeseen circumstances may arise.
- □ What if self-isolation is not possible? UNOLS guidelines are for all family members to isolate for 14 days.
- What if individuals with COVID-19 are asymptomatic, and pre-departure diagnostic testing is not implemented?
- Box Will health of those onboard be monitored after departure?
- Do we also isolate the medical care provider if they have to treat someone that tests positive for COVID-19?