MOBILIZING YOUR DNA LABORATORY:
developing a Rapid DNA response for mass identification events

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It's not a matter of if, it's a matter of when.
OVERVIEW

- Planning Ahead
- Rapid Program Goals
- Deployment Design
- Training
- Exercise Execution
- Post-Deployment
- Available Resources

Plans are nothing; planning is everything.
PBSO RAPID DNA PROGRAM GOALS

1. Incorporate Rapid DNA analysis into regular casework
   - On-line August 2020 (RHID), November 2021 (ANDE)
     - Modified Rapid DNA analysis and CODIS upload
     - Buccal swabs – standard-only cases, paternity/identity cases, CODIS confirmations, Ol alleles
     - Bone & Tissue – identity cases only (no CODIS upload)

2. Establish a Rapid DNA Infrastructure within our county
   - Be an informed resource to:
     - Local agencies regarding use and implementation
     - Currently two local agencies pursuing Rapid technology
     - Working with DNA International on DNA Connect for interagency Rapid profile searching
     - Parent agency with regard to booking station implementation
     - TBD

3. Develop a plan to mobilize Rapid technology
HOW DO YOU EAT AN ELEPHANT?

...one bite at a time.
-Desmond Tutu, adapted

FOCUS ON WHAT WE CAN CONTROL

Running DNA samples outside of the laboratory.

Out of project scope:
- sample collection
- family assistance center collections
- match notifications
- sample return

VALIDATE DNA OPERATIONS EXTERNAL TO THE LAB ENVIRONMENT
COLLABORATION AND FACT FINDING

- In April 2021 FBU reached out to MUFC
- ANDE
- Students & Technical Assistance Program (TAP) Interns
- Established primary objectives
  - Rapid deployment protocol with potential for CODIS entry
- Standards considerations: ANAB & QAS
- Existing resources:
  - ANDE – Response experience
  - NYOCME – Continuity of Operation Plan for Forensic Biology
  - DNA International – DVI events
  - ASCED – Rapid DNA DVI Committee

TAP INTERN: initial materials created/adapted

- Role List
- Role Task Checklist
- Instrumentation Training Checklist
- Supply List
- Master
- Station-specific
- Sample Triage List
- Debrief Sheet
- Unidentified Human Remains Collection Form
- Family Reference Collection Form

ROLES

- Logistics Coordinator
- Supply Coordinator
- Deployment Supervisor
- Site Coordinator
- Sample & Supply Coordinator
- Medical & Training Coordinator
- Health & Safety Coordinator
- Photographer & Documenter
LOGISTICS – what do we need to bring a lab outside?

Considerations: transportation, location, temperature, humidity, power, internet

ACTION ITEM CHECKLISTS

SUPPLY LISTS
PRE-DEPLOYMENT BRIEFING AND “TRAINING”

- Expectations vs. reality
- Roles assigned

**ANDE**
- 2 i-Chips
  - Chip 1:
    - 4 Swab-to-swab buccal samples for QA/QC
  - Chip 2:
    - Fresh Tissue 1 (fresh protocol)
    - Male Bone 1 (fresh protocol)
    - Fresh Tissue 2 (fresh protocol)
    - Male Bone 2 (fresh protocol)
    - Simulated protocol – time constraints
    - Phantom aged bone
    - Phantom degraded bone, e.g. burned
    - Anticipate possible unidentified human remains samples that may come from the site

**RHID**
- 2 ACE Cartridges
  - 1 QA/QC sample
  - 1 simulated family reference buccal sample
- RHID needed to be the last thing packed at the lab and the first thing unpacked on-site - required power for refrigeration

SAMPLES

**JUNE 28 –29, 2022**
SITE SET-UP FOR FBU MASS IDENTIFICATION EVENT

* June 29, 2022

Western Shelter GateKeeper 20 (286 ft²), Two portable 5-ton AC units
STATIONS FOR FBU PROCESSING TENT
Bone and Swab-the-Swab Stations
Tissue Station
Portable refrigerator

ON-SITE TRAINING FOR NON-TECHNICAL PERSONNEL
• Sample loading and operation of ANDE and RHID.
• Forensic biologist expertise needed for profile interpretation

ON-SITE TECHNICAL SUPPORT
Rahul Patel (ANDE)
• Unaware that ANDE travel case doubled as a workstation; assisted with conversion
Scott Reierstad, Jodi Bailey & Pete Deloume (ThermoFisher)
• Assisted with reconfiguring data transfer from instrument to RapidLINK software on the travel laptop
  (standard configuration was for our internal network)
POST-DEPLOYMENT PROCEEDINGS

- Performance checks of instrumentation for casework use
- Organization and restock of supplies
- Debrief to identify the strengths and weaknesses of the event
- Update materials
- Monthly presentations from each team

CONTINUOUS IMPROVEMENT

- Continue to refine response plan and materials
- Order additional supplies
- FAIRS Software validation (paternity/kinship)
- On-going Mass ID exercises
  - Tableau
  - Agency organized
- Retrofit “Forensic Response Unit” vehicle
- Keep the conversation going!
  - A seat at the table – PBSO Mass Casualty/Mass Fatality Working Group

RESOURCES FOR ALL

- www.pbso.org/inside-pbso/crime-lab
- Forensic Manuals
- Forensic Biology (manuals, forms, validation summaries)
- Mass ID Resources Folder – living documents, MSWord format
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