Ebola: Education Challenge for Patient and Staff Safety

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What is Ebola?
- Severe, often fatal viral disease in humans and nonhuman primates
- Transmitted by direct contact with body fluids of infected persons or animals (or contact with objects contaminated by these fluids)

Current outbreak (as of March 2015):
- Over 23,900 reported cases of Ebola Virus Disease (EVD) in West Africa, with over 9,800 reported deaths
- Mortality rate was 40% in 2014 and today is approximately 41%
- United States: 4 cases diagnosed, 1 death

Mayo Clinic in Arizona preparedness for EVD:
- Major gaps in organizational readiness were identified:
  - Specific workflows
  - Supplies
  - Policies
  - Specific workarounds
  - Education and training

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Define
- Enormous education effort at Mayo Clinic in Arizona
  - Hundreds of hours spent developing workflows, competencies, education plans
  - Additionally, over 1,700 staff hours spent on education
  - No PPE specifically designated for this effort; more sustainable plan developed going forward
  - Mayo Clinic in Arizona defined core group of 57 employees:
    - Core group will receive bi-monthly education through 2015:
      - Continue practice with PPE
      - Additional workflows and policy education
  - Nursing education specialist will be hired for one year limited designation for this effort
  - It is planned to identify remaining gaps and improvement opportunities

Control
- Enormous education effort at Mayo Clinic in Arizona
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Analyze
- Workforce:
  - Specific to entry points, patient care areas, and personnel
  - Developed and updated according to staff feedback

PPE equipment and supplies:
- Several revisions at Mayo Clinic in Arizona:
  - Initial CDC guidelines: isolation gown, gloves, face mask with eye shield
  - Staff did not feel this provided adequate protection
  - Workgroup formed to increase the level of staff safety
  - Experienced with PPE application and removal using OSHA’s guidelines
  - 2. Enhanced PPE: two pairs of gloves, head covering, N95 mask, protective eyewear, apron, gown, boots, boot covers, shoe covers
  - 3. Incorporation of Stryker FlyteTM Suit
  - Whole body coverage and climate control
  - Cheetah was powered air purifying respirator (PAPR) in use
  - Final experience head covers, elimination of N95 mask

Timeline
- Updated CDC guidelines later validated these enhanced precautions

Ebola policies:
- Enterprise-level policies developed for screening, identification, and care for patients with suspected or confirmed EVD
- Staff also address customs, cleaning and decontamination of patient care areas, and support for involved staff

Measure
Mayo Clinic in Arizona preparedness measurements – Baseline (October 5, 2014):
- EVD workflows = 1
- Personal protective equipment (PPE) competencies = 0
- Staff competent in Ebola PPE = 0
- Ebola PPE policies = 0
- Supplies = 1 EVD modified droplet precaution cart

Improvement
Mayo Clinic in Arizona preparedness measurements (March, 2015):
- EVD workflows = 23
- Personal protective equipment (PPE) competencies = 14
- Staff competent in Ebola PPE = 185
- Ebola PPE policies = 11
- Supplies = 2 fully equipped EVD carts in hospital, PPE kits in all anteroom areas
- The Department of Nursing led planning and education, departing from traditional hierarchical patterns
- Strong collaborative interdisciplinary relationships developed

References

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