WVUMedicine™

ASV

A Common language for a large, progressive health system

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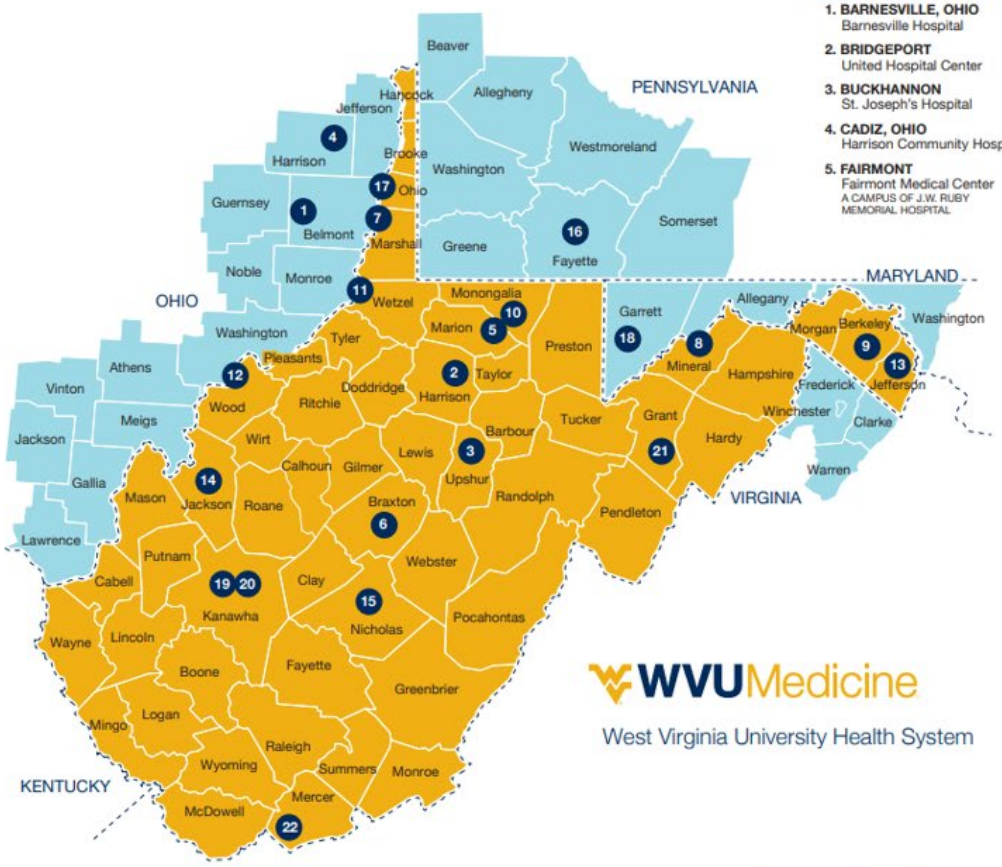
Objectives

- Explain how ASV was used to help standardize a hospital system of 23 hospitals.
- The value of standardizing across the system
- Share case studies of different practices for each size facility.

Implementation of a system wide approach to one ventilator platform

- In 2019, we were able to implement a standardized Hamilton ventilator platform across the healthcare system.



Member System Hospitals

1. **BARNESVILLE, OHIO**
   Barnesville Hospital
2. **BRIDGEPORT**
   United Hospital Center
3. **BUCKHANNON**
   St. Joseph's Hospital
4. **CADIZ, OHIO**
   Harrison Community Hospital
5. **FAIRMONT**
   Fairmont Medical Center
   A CAMPUS OF J.W. RUBY MEMORIAL HOSPITAL
6. **GASSAWAY**
   Braxton County Memorial Hospital
7. **GLEN DALE**
   Reynolds Memorial Hospital
8. **KEYSER**
   Potomac Valley Hospital
9. **MARTINSBURG**
   Berkeley Medical Center
10. **MORGANTOWN**
    — J.W. Ruby Memorial Hospital
    — Children's Hospital
    A CAMPUS OF J.W. RUBY MEMORIAL HOSPITAL
11. **NEW MARTINSVILLE**
    Wetzel County Hospital
12. **PARKERSBURG**
    Camden Clark Medical Center
13. **RANSON**
    Jefferson Medical Center
14. **RIPLEY**
    Jackson General Hospital
15. **SUMMERSVILLE**
    Summersville Regional Medical Center
16. **UNIONTOWN, PENNSYLVANIA**
    Uniontown Hospital
17. **WHEELING**
    Wheeling Hospital
18. **OAKLAND, MARYLAND**
    Garrett Regional Medical Center

Managed Hospitals

19. **CHARLESTON**
    Saint Francis Hospital
20. **CHARLESTON**
    Thomas Memorial Hospital
21. **PETERSBURG**
    Grant Memorial Hospital
22. **PRINCETON**
    Princeton Community Hospital

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West Virginia University Health System

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Standardized care

- Standardization – process of developing, agreeing upon and implementing uniform technical specifications, criteria, methods, processes, and practices that can increase compatibility, safety, repeatability and quality.

Standardized Care in Healthcare

- Healthcare's perception of standardization varies. While administrators see standardized care as a way to achieve efficiency and quality,
- Caregivers have historically viewed standardization as an administrative mandate that can sometimes go against their patients' best interests

Benefits of Standardized Care in Healthcare

- Improved quality of care
- Consistent outcomes
- Better documentation
- Improved efficiency
- Improved safety

System benefits of Standardizing

- Creating a common language
  - Same platform- the portfolio of ventilator fleet
  - Benefits during the pandemic
    - Education
    - Shared case studies
    - Lesson learned
    - Ability to share equipment
  - Virtual ICU- Our physicians in Morgantown were to remote into the rural facilities and manage and keep these patients at the rural hospitals

ASV adoption throughout the system

- As with most respiratory departments throughout we were challenged with high demand on our services with less staff.
- COVID management of care was all over the board.
- We needed to create a communication/education mechanism for the system to approach this pandemic in an effective manner.

ASV Adoption

- Flight team
  - Hamilton T1 –portable, battery, ASV
  - Inadequate lung history

  - Placing the patient on ASV via the Hamilton T1, given the little knowledge of adequate lung history. The ASV closed loop method provides the patient's targeted minute ventilation(based on IBW and % minute volume settings. ASV automatically adjusted both the ventilation and oxygenation parameters.

Use of Hamilton Platform

- Decrease admissions
- Transition of care
- Diagnostic tool
  - ASV as a checking guide – how does the ventilator indicate the patient needs vs how the ventilator may have been set up on a different mode.

Case studies

- Summersville Hospital (small hospital) – 25 bed hospital with a 4 Bed ICU, utilize Hamilton C3 and Hamilton T1 Ventilators
- Princeton Community Hospital (medium hospital) – 203 acute care beds - 10 Hamilton C1 – bought to help move patients around during COVID and NPPV, HFNC, and these quickly became their main ventilator.
- Large Academic Medical Center- 675 adult beds and 155 Children's Hospital.

Use of Hamilton Platform

- Understanding how COPD vs ARDS needed to be ventilated vs all patients being initially set up the same.
  - Potentially able to ventilate with less pressure, volume and FiO2, while producing the same results in terms of oxygenation.
  - *(Really important when smaller hospitals were not as skilled at taking care of these acutely ill patients)*
  - *1. COPD – emptying strategy*
  - *2. ARDS- recruitment/lung protective strategy*
  - *Example a patient comes in hypoxic, COVID, 66 female on vent for 12 hours on 80%, PEEP 8, compliance 50, she is on a rate of 26, because her CO2 was in the 80's (not ventilating, not oxgentaing, big shunt. Put her on ASV, drops her rate to 9 with exoiratory time constraints over 2 seconds. Her Tidal volumes increase, to about 9ml/kg and start her on sterodis and treatments and extubate her in 14 hours. Her underlying lung disease was COPD but being managed as an ARDS patient.*

Patient at Princeton

- 66 y/o hypoxic patient arrives in the Emergency room.
- On a ventilator for 12 hours at 80% FIO_2 , PEEP 8, compliance 50, rate of 26 (CO_2 in the 80's)
- Classic case- not ventilating, not oxygenating, big shunt).
- The RT placed her on ASV, drops her rate to 9 with expiratory time constraints over 2 seconds.
- Her V_t increases, to around 9ml/kg, she is started on steroids and treatments.
- Extubated her in 14 hours. Determined that her underlying disease was COPD but not as ARDS as they were treating.


ANY
Questions?