

Merging Informatics and Respiratory to Improve Research and Patient Care Outcomes

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Merging Informatics and Respiratory to Improve Research and Patient Care Outcomes

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LEHIGH VALLEY HEALTH NETWORK, ALLENTOWN, PENNSYLVANIA



WHO WE ARE

- Largest academic community hospital in PA
- Largest Level 1 Trauma Center in PA
- Certified Stroke Center
- Employees – 9,656
- Medical Staff – 1,100+
- Nurses – 2,334
- Respiratory Therapists – 110
- Magnet Hospital
- 154,792 ED visits / 63,743 admissions
- 988 acute care beds
- 3 hospital campuses
- Revenues over \$1 Billion

INTRODUCTION

- Our hospital had a major change involving the electronic medical documentation system.
- This change impacted the Respiratory Care Department given that the new system collects data from medical devices, including mechanical ventilators.
- Our department's goal was to have a designated departmental individual, an Application Analyst (AA), who would have the ability to transform the information into usable reports.
- The Clinical Information System Specialist (CISS) would assess which parameters have the greatest impact in our clinical practice and optimizes patient outcomes.

METHODS

- Initially, the AA was a part time position. Inevitably, the AA became full time due to: number of sites, the reports desired, QA/PI requirements, development of a departmental website, monthly reporting needs, etc.
- The AA has an Information Technology (IT) background.
- The CISS is a full time position that works with our IT Department on the continuous development of the electronic medical documentation system. They are also responsible for respiratory order entry and charges.
- The CISS has a RRT background.

RESULTS

- Since the creation of the AA and CISS, the Respiratory Care Department has become an integral member of the hospital's Critical Care Research Team.
- Reports are now created and results (that took a considerable amount of time in the past) can be assessed in minutes. (See table below.)

PROCESS	PRE	POST
Ventilator Rounds Report	2 hrs	10 minutes
Q/A Data Collection/Compiling	1-2 weeks	3 hours
Reintubation/Self Extubation Data	2-3 weeks	1.5 hours
VAPS Compliance/Month	1-2 hours/day	2 hours/Month

EXAMPLE: Ventilator Rounds Report

- Generated on a daily basis.
- Critical to optimizing patient outcomes and reduce ventilatory duration.
- Allows for the development of databases to track trends and outcomes.
- Promotes research ideas and streamlines data collection during research projects.
- Insures therapist compliance to policy and procedures.

PROGRESSION OF VENTILATOR ROUNDS REPORT

Year	Pl. Name	Service	Diagnosis-Reason Vent	Current VDs
2001	Book, J 1111111	STS	CHI	10 PSV 10 Tract
2002				
2003	Paper, A 2222222	STS	Resp F	8 PSV 16 CPAP
2004	Pencil, M 3333333	STS	CHI	11 APRV 32d
2005				
2006	Eraser, J 4444444	STS	CHI	4 Rate
2007				
2008	Pans, J 5555555	STS	Chest/abd	6 PSV 10 Tract
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016	Markers, R 6666666	SCC	bowel resection	13 PSV 20 +10 F
2017	Staplers, R 7777777	SCC	exp lap	10 Rate auto-per
2018	Staples, F 8888888	STS	left lower amput.	25 PSV 12
2019	Clips, M 9999999	STS	clavicle	7 VDR 422d

▲ MS Word Document

▲ MS Access Form

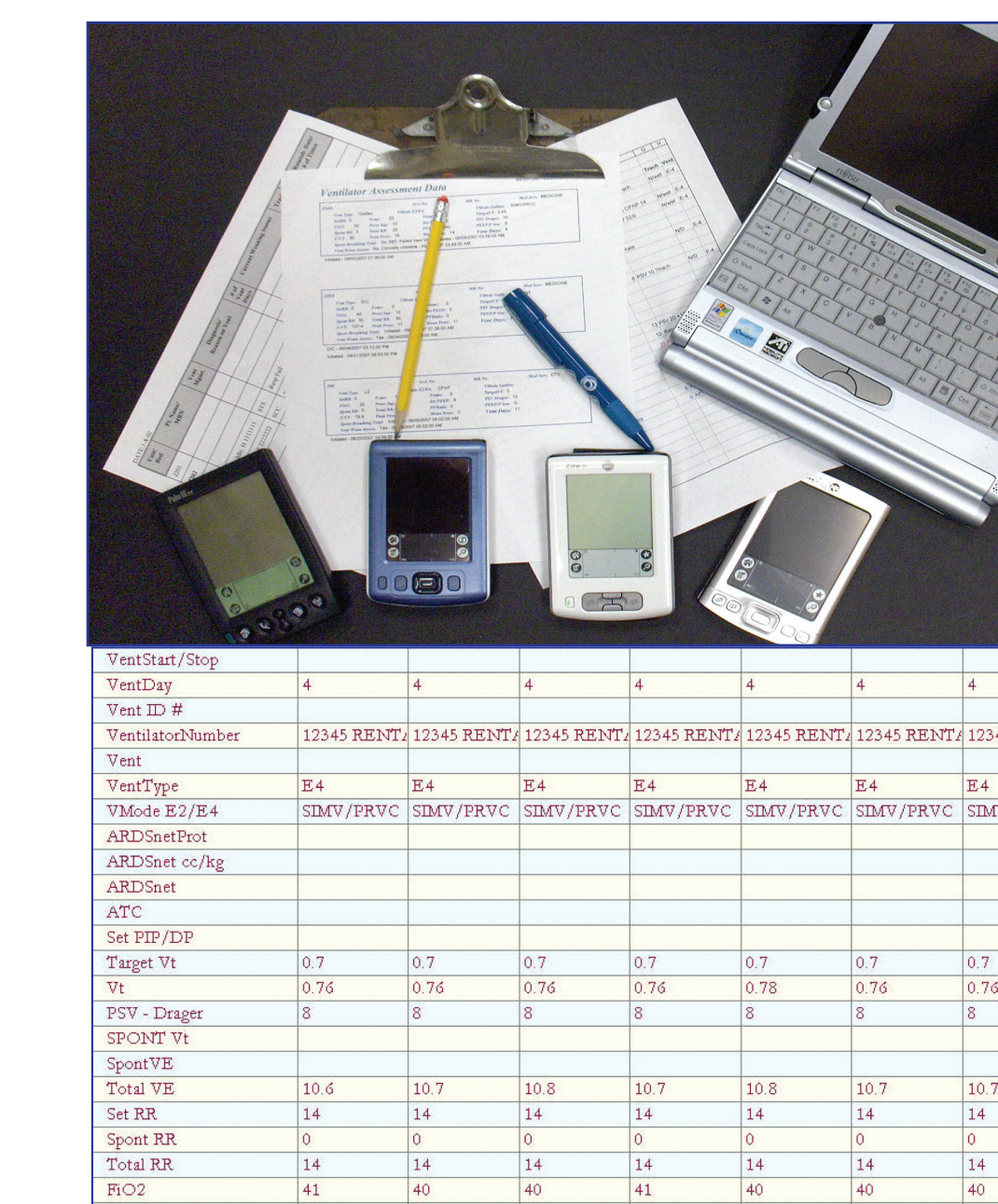
▲ MS Excel Spreadsheet

View Type	Galileo	VDR-EZE 4	VDR-Galileo	SMV/PRP
SpRR	0	Form: 22	Form: 22	EmpireTT: 0.55
PiO2	50	Pres Day: 10	Se PEEP: 0	PiO2 Degree: 10
Spont RR	3	Total RR: 25	FFRatio: 240	FEF/P low: 5
PVT	30	Peak Press: 18	Mean Press: 14	Vent Days: 4
Spont Breathing Trial	No SBT, Failed Vent Wean Assess - 09/05/2007 03:59:00 AM			
View Wean Assess	No, Clinically Undata - 09/05/2007 03:59:00 AM			
Initiated - 09/02/2007 07:36:00 AM				

▲ MetaVision Info/Access Report

COLLECTION TOOLS

- Paper/pencil
- Microsoft Excel
- Spreadsheet
- Lifebook
- Laptop
- Metavision iMDSoft Documentation System



BENEFITS OF THE VENTILATOR ROUNDS REPORT

- Reduction in ventilatory duration.
- Improvement in QA/PI.
- Increased bedside education and discussion.
- Development of research projects and abstract presentations.
- Enhanced customer relationships.

CONCLUSION

- The AA and CISS have allowed our department to offer invaluable information on how clinical interventions affect outcomes and how to improve those outcomes, with increased efficiency.
- These positions may not be feasible for every Respiratory Care Department, but they may be something that needs further investigation by some Directors.
- Creative thinking and the ability to obtain additional clinical positions may allow departments to offer more factual data to their Administration and allow re-evaluation of their clinical practices.

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