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Utilization of Electronic Documentation to Assess Patient Outcomes

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Published In/Presented At

Leshko, R., Horoski, D., Miller, K., Lutz, A., McCambridge, M., & Weiss, M. J. (2010). Utilization of Electronic Documentation to Assess Patient Outcomes. *LVHN Scholarly Works*. Retrieved from http://scholarlyworks.lvhn.org/patient-care-services-nursing/108

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Utilization of Electronic Documentation to Assess Patient Outcomes

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INTRODUCTION

- Health information technology is increasingly being used in many intensive care units.
- The goal of this technology is to record patient data, improve outcomes and monitor staff performance.

METHODS

- Implementation of an Intensive Care Unit Electronic Medical Record (ICU EMR) to serve as a beside medical record and database.
- Data can be self populated from a ventilator or manually entered by the bedside Respiratory Therapist.
- Data can be queried in real time and on an ongoing basis.
- A Clinical Information System Specialist (CISS) position was developed to be a combination of a Respiratory Therapist with extensive clinical background, coupled with experience in information services technology.
- The CISS supervised implementation and data entry.

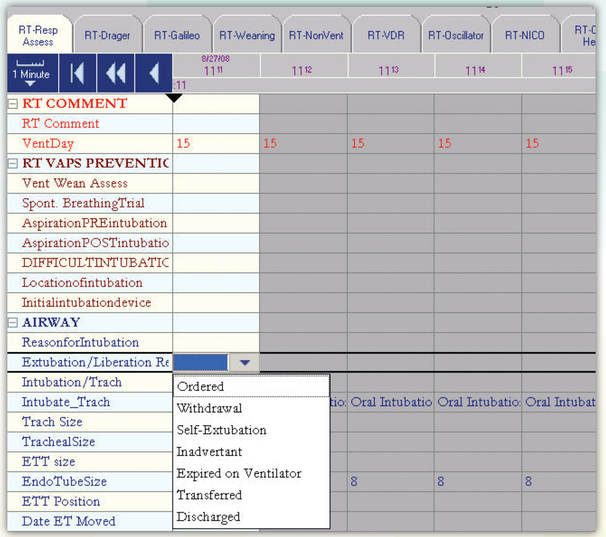
RESULTS

- Patients were enrolled over an 18 month period from Jan. 1, 2008 to June 30, 2009.
- There was a total of 4,569 episodes in which patients required mechanical ventilation.
- Out of the 4,569 episodes, 4,020 (88.0%) had outcome data entered by the Respiratory Therapist; 549 (12.0%) episodes had no outcome data entered.
- 3,296 episodes (82.0%) were successfully extubated without the need for re-intubation.
- 392 episodes (9.8%) mechanical ventilation was withdrawn for the reason of palliative care.
- 129 episodes (3.2%) resulted in death.
- 88 episodes (2.2%) patients were transferred to long-term care facilities.
- 12 episodes (0.3%) were discharged to home on the ventilator.
- There were 102 episodes (2.5%) of self extubation: **18 (17.6%) required re-intubation.**
- Of the 4,020 episodes of mechanical ventilation, 162 (4.0%) required re-intubation within 24 hours, and 146 (3.6%) required re-intubation after 24 hours.

CONCLUSION

- ICU EMR accepts data both electronically and manually.
- ICU EMR serves as both a bedside medical record and database.
- The ICU EMR allows us to easily monitor our mechanical ventilatory outcomes and make appropriate interventions to optimize patient care.
- The ICU EMR allows monitoring of staff's clinical documentation and compliance.

META VISION ELECTRONIC RECORD



INTUBATION/EXTUBATION DATA SHEET

Intubations	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	YEAR
Initial	178	284	307	175	303	304	283	248	310	326	275	277	3270
Re-Intubation < 24H	9	10	7	15	15	14	12	5	16	11	10	20	144
Re-Intubation > 24H	3	8	11	12	13	9	7	6	8	12	20	8	117
Extubation													
Ordered	118	226	227	129	250	204	237	187	261	231	217	228	2519
Expired	3	9	13	3	8	14	7	12	15	8	9	12	113
Self Extubation	3	12	3	5	12	12	4	4	5	8	14	9	91
Withdrawl	7	18	9	5	24	26	26	24	23	33	37	36	268
Transferred	2	10	9	3	11	6	9	6	5	7	9	9	86
Discharged	0	0	0	1	0	1	0	0	1	0	1	3	7
In-advertent	0	1	0	0	0	0	0	0	0	1	1	1	4
RATES													
Re-Intubation < 24H	7.4%	4.4%	3.0%	11.2%	5.7%	6.4%	5.0%	2.6%	6.0%	4.6%	4.3%	8.4%	5.5%
Re-Intubation > 24H	2.5%	3.5%	4.8%	9.0%	4.9%	4.2%	2.9%	3.1%	3.0%	5.0%	8.7%	3.4%	4.5%
% of Extubation													
Ordered	88.7%	81.8%	86.9%	88.4%	81.9%	77.5%	83.7%	80.2%	85.8%	80.2%	75.6%	76.5%	81.5%
Expired	2.3%	3.2%	4.9%	2.0%	2.6%	5.3%	2.5%	5.1%	5.6%	2.7%	3.1%	4.0%	3.7%
Self Extubation	2.3%	4.3%	1.1%	3.4%	3.9%	4.5%	1.4%	1.7%	1.9%	2.7%	4.5%	3.0%	3.0%
Withdrawl	5.3%	6.5%	3.4%	3.4%	7.8%	9.8%	9.1%	10.3%	8.6%	11.5%	12.9%	12.1%	8.7%
Transferred	1.5%	3.6%	3.4%	2.0%	3.6%	2.30%	3.2%	2.6%	1.9%	2.4%	3.1%	3.0%	2.8%
Discharged	0.0%	0.0%	0.0%	0.6%	0.0%	0.4%	0.0%	0.0%	0.4%	0.0%	0.001%	0.010%	0.002%
In-Advertent	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.01%	0.001%	0.003%	0.001%
Self Extub/Re-Intub	0	3	1	1	0	3	1	1	1	1	4	2	18
Percent Re-Intub	0%	25%	33%	20%	0%	25%	25%	20%	20%	12.5%	28.5%	22%	19.7%

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