

State Expert Panel on Ventilator Surge Capacity

Summary Report

At-table Exercise for the Wisconsin Surge Capacity Plan

Historical overview

The State Expert Panel on Ventilator Surge Capacity was formed in 2006 to develop a plan for a response to a surge in the need for ventilators due to surge or catastrophic incidents. The Panel produced the Surge Capacity Plan for Ventilation of Critically Ill Patients. The Plan included the purchase of as many as 317 ventilators to be pre-positioned in hospitals throughout the state, the development of a training program for respiratory therapists, the development of a training program for non-respiratory personnel and the development of oxygen conservation strategies. The Statewide Ventilator Surge Capacity Exercise was developed by the Expert Panel to assess the results of the planning to date.

Goals of the Exercise

Objective 1: To identify the number of hospitals that have completed key components of their hospital’s ventilator surge capacity plan.

Objective 2: To assess staff knowledge of the hospital’s surge capacity plan.

Objective 3: To assess staff knowledge of ventilator triage protocols.

Objective 4: To assess staff knowledge of conservation protocols in surge incidents.

Objective 5: To assess staff knowledge of WI Trac and resource sharing.

Objective 6: To assess staff willingness to provide care in surge situations.

Objective 7: To assess the Mass Casualty Ventilation Training Program

Table-top Exercise Results

Participants - 152 total hospitals were eligible to participate in the exercise, 78 hospitals registered for the exercise and 48 hospitals completed all segments of the exercise.

Ventilator Test Results (Appendix 1)

Mass Casualty Ventilator (MCV) test scores of the 2008 table top exercise decreased when compared to the test of the initial MCV training completed between 2006 and the date of the exercise. Ongoing usage of MCV ventilators and initial training of new employees is recommended. Note: 2008 test was not an open book test.

	MCV Training score (median)	Exercise score (median)
<i>ivent</i>	86.7%	63.6%
<i>LTV 1200</i>	86.7%	60.0%

Duty to Serve (confidential questionnaire (Appendix 2)

How many of your staff will be at work? Management of personnel is another area that needs careful consideration. No one knows exactly what percentage of employees may or may not be at work. However the following statistics should be taken into account when formulating hospital and departmental staffing plans.

- 25% of your staff may be out sick or deceased
- For those not out sick surveys from the state of Wisconsin indicate;
 - 70% would most likely come into work.
 - 15 % of staff will most likely stay home and not come to work.
 - 15% would be questionable for coming into work.
- Of those staff coming into work;
 - 76% would be able to work an extended shift.
 - 24% would be able to work an extended shift if they were given 8 hours to make arrangements.

At-table drill scenarios (Appendix 3)

Four scenarios were presented to departments to evaluate their preparation and knowledge of their Mass casualty disaster plan. Based on those four scenarios here are some strengths and weaknesses.

The strength of the survey is that most of the hospitals' respiratory staff know how to access additional ventilators, how to implement ventilator triage protocols, and have an oxygen conservation policy in place.

The survey does show areas needing improvement that include: the use and knowledge of WiTrac and the use of staffing extenders.

The panel is working on a binder that contains templates and resources for these areas needing improvement.

Managers' survey (Appendix 4)

81 Respiratory Care Managers completed the survey. A vast majority of hospital respiratory staff have completed the State Mass Casualty Ventilation Training. 63% reported having an approved ventilator triage protocol. Approximately 50% reported their hospital had oxygen conservation and staff extender plans in place. Although the manager survey results shows hospitals have plans in place other parts of the survey show managers have further work to do to communicate the plan to staff. It appears hospitals have a limited ability to deal with a significant surge capacity. Although it appears a lot of work has been done to plan for a surge capacity, respiratory managers will need to continue working on developing guidelines. These guidelines will need to incorporate the recommendations defined in the Surge Capacity Plan for Ventilation for Critically Ill Patients. Managers will need to work with their staff to assure they have the knowledge to implement the plan should a situation arise.

Exercise Shortfalls

The exercise was completed by individual hospitals and facilitation may not have been consistent. Some hospitals included nursing and EMS personnel who did not complete the training program. Some scenario questions yielded ambiguous results. Efforts were made to validate test results and ambiguous questions.

Wisconsin Surge Capacity Plan Strengths

1. Plan succeeded in increasing the number of ventilators in the state to a number that is projected to be sufficient for surge or catastrophic incidents.
2. The plan succeeded in training more than 1000 therapists throughout the state and all seven Wisconsin Technical College System Respiratory Therapist programs have included the training in their curricula.
3. Oxygen conservation strategies have been developed and distributed to hospitals.
4. The plan and at-table exercise have heightened awareness of all aspects of ventilator-related disaster preparedness.

Wisconsin Surge Capacity Plan Weaknesses

1. The plan cannot assure implementation of all recommendations.
2. The plan does not address the integration of this plan within hospitals' existing plans.
3. The plan has not addressed the issue of individual departments developing their surge plans.

State Expert Panel Recommendations for individual Respiratory Care Departments

1. Develop a departmental surge capacity plan (template to be provided by the State Expert Panel)
2. Educate staff on precautions and protections for staff and staff duty to care
3. Assure continuing competency and retraining on WSCP ventilators
4. Train staff on approved ventilator triage protocols or assist in the approval of ventilator triage protocols.
5. Train staff on O2 conservation strategies
6. Contact WiTrac facility administrator and ask to be signed up as a WiTrac user
7. That hospitals make sure that the RT department's plan is incorporated into the over-all facility plan and that hospital emergency preparedness committees should have an RT representative.

Appendix 1

MCV Drill Ventilator Test Results

2/24/2009

Hospitals owning the Versamed iVent

	Number	Number Correct	Median score
iVent test results	121	6.7 of 11 avg	60.9%
LTV 1200 test results	121	5.3 of 10 avg	53%

Hospitals owning the LTV 1200

	Number	Number Correct	Median score
iVent test results	322	6.1 of 11	55.5%
LTV 1200 test results	325	5.6 of 10	56%

Unknown which ventilator is owned

	Number	Number Correct	Median score
iVent test results	172	7.0 of 11 avg	63.6%
LTV 1200 test results	179	6.3 of 10 avg	63%

Appendix 2 Confidential Questionnaire

Question	# of responses	% of responses
I would be very likely to stay home	33	5.2
I would possibly stay home based on what I know at the time	59	9.4
I would possibly come to work based on what I know at the time	200	31.9
I would definitely report to work as scheduled	240	38.3
I cannot predict what my response would be	94	15.0
Total respondents	626	100

Combinations of Rersponses

Stay home(1) or maybe stay home(2) = Can't count on	92	14.6
Report to work (4) or may report (3) = may be able to count on	440	70.2
May not (2), May (3), Cannot predict (5) = total questionable - may not show	353	56.3

Appendix 3

At table responses

	<25%	25-33	33-50	50-66	66-75	>75	N/A
Scen 1 - % Who know Vent overload area	6	1	3	3	4	42	
Scen 1 - % Who know who to contact - shortage	3	0	3	5	6	42	
Scen 1 - % Who know if there are enough vents now	2	1	3	2	6	44	
Scen 1 - % Who know procedure to get addl vents	5	2	3	7	6	36	
Scen 2 - % Who know if hosp has triage protocol	8	2	3	6	5	32	3
Scen 2 - % Who know triage protocol details	12	3	4	4	3	19	14
Scen 2 - % Who chose correct pt	5	1	3	6	2	40	1
Scen 2 - % Who chose incorrect pt	35	2	5	3	1	7	5
Scen 3 . - % Who know if O2 plan exists	3	1	2	11	5	30	6
Scen. 3 - Who know details of O2 plan	10	3	1	7	1	20	17
Scen. 3 - % Who know if hosp. can use extenders	8	2	1	13	2	31	2
Scen. 4 - % Who know if hosp. has policy on extenders	13	4	1	7	3	25	5
Scen. 4 - % - Who know who WiTrac contact is	19	6	2	6	3	21	1
Scen. 4 - % Who know what WiTrac is	20	7	4	10	2	16	0
Scen. 4 - % Who know # of circuits to ship with ventilators	23	6	6	3	2	19	0

Scen. 4 - % Of staff willing to travel

9 5 8 8 6 23

Appendix 4

MCV Drill Manager responses

Question				
	Yes	No	N/A	
Do you have an O2 conservation plan?	42%	58%		
Do you have a plan to use extenders?	52%	48%		
Committee to review triage protocols?	78%	22%		
Has the committee approved a vent. Triage protocol	32%	7%	10%	
	0%	<25%	25%-50%	>50%
What surge increase can you handle today?		30%	48%	22%
What surge can you handle if 50% of staff are out	8%	46%	42%	4%