

Supplementary Material No. 1: Development of a Training Module on Crisis Resource Management (CRM) for the Trauma Code Team Using Virtual Reality Simulation: Delphi Phase II

Thank you for participating as an **expert panelist** in the development of the crisis resource management training module that we are currently working on.

There are **7 learning objectives** in this module, namely:

1. Recognize the environment
2. Anticipate and plan
3. Lead the team
4. Be a good team member
5. Allocate attention wisely
6. Distribute workload
7. Communicate effectively

In this form, there are 16 performance indicators used to assess the 7 learning objectives mentioned above. **Panelists are asked to determine the “automatic fail” criteria for each indicator.**

Automatic fail means that if a participant does not perform the specific performance indicator, the panelist considers the participant to have failed the entire module learning objectives.

Not automatic fail means that if a participant does not perform the specific performance indicator, the participant is not considered to have failed the entire module, but only that particular indicator.

Expert panelists may also refer to the module guideline provided together with this form.

Example 1:

The leader clearly assigns roles at the beginning

Automatic fail

Not automatic fail

The panelist selects **“automatic fail”** for the indicator **“the leader clearly assigns roles at the beginning.”**

During simulation, the team leader does not assign roles clearly so that members are confused about what to do. Thus, the participant is automatically considered to have failed the overall learning objectives.

Example 2:

The leader provides information to team members regarding the patient’s current condition and expected goals

Automatic fail

Not automatic fail

The panelist selects **“not automatic fail”** for the indicator **“providing information when there is a change in condition”**.

During simulation, the patient’s blood pressure suddenly drops, but no member informs the others. Thus, the participant is not automatically considered to have failed the overall objectives, but rather failed on that indicator, which reduces the score on effective communication and being a good team member.

Delphi Phase II Questionnaire

1	Panelist Name Answer
2	Knowing the patient's current condition in the emergency department Automatic fail Not automatic fail
3	Knowing the location and function of equipment Automatic fail Not automatic fail
4	Discussing the patient management plan with team members Automatic fail Not automatic fail
5	Managing the patient according to priority of needs Automatic fail Not automatic fail
6	Continuously reassessing the management plan based on observations and patient responses to given interventions Automatic fail Not automatic fail
7	The leader gives verbal and clear patient management instructions Automatic fail Not automatic fail
8	The leader provides information to team members regarding the patient's current condition and expected goals Automatic fail Not automatic fail
9	The leader encourages team members to share opinions and management plans Automatic fail Not automatic fail
10	Conducting debriefing after the crisis Automatic fail Not automatic fail
11	Knowing each member's role Automatic fail Not automatic fail
12	Preventing team members from making fixation errors Automatic fail Not automatic fail
13	The leader clearly assigns roles at the beginning Automatic fail Not automatic fail
14	The leader uses a direct and authoritative approach when needed (time critical) Automatic fail Not automatic fail
15	When role changes occur in the team, ensuring clear verbal handover Automatic fail Not automatic fail
16	Providing information when there is a change in condition Automatic fail Not automatic fail
17	Using closed-loop communication Automatic fail Not automatic fail

Supplementary Figure 1. Delphi Phase II Questionnaire

Supplementary Material No. 2: Development of a Training Module on Crisis Resource Management (CRM) for the Trauma Code Team Using Virtual Reality Simulation: Delphi Phase III Minimum Passing Score Determination

Thank you for participating as an **expert panelist** in the development of the crisis resource management training module that we are currently working on.

There are **7 learning objectives** in this module, namely:

1. Recognize the environment
2. Anticipate and plan
3. Lead the team
4. Be a good team member
5. Allocate attention wisely
6. Distribute workload
7. Communicate effectively

In this form, there are 16 performance indicators used to assess the 7 learning objectives mentioned above. **Panelists are asked to provide the minimum passing score for each assessment indicator.** The scoring criteria are based on the subjective experience of the expert panelists.

Expert panelists may also refer to the module guideline provided together with this form.

Example 1:

Knowing the location and function of equipment

0 1 2 3 4 5 6 7 8 9 10

The panelist selects a **minimum passing score of 6** for the indicator “knowing the location and function of equipment” because it is considered **sufficiently important** to master. The assessment is based on the subjective experience of the panelist while referring to the indicator criteria in the module file.

Example 2:

Knowing the patient’s current condition in the emergency department

0 1 2 3 4 5 6 7 8 9 10

The panelist selects a **minimum passing score of 9** for the indicator “knowing the patient’s current condition in the ED” because it is considered **very important**, and module participants must master it to pass the module. The assessment is based on the subjective experience of the panelist while referring to the indicator criteria in the module file.

Delphi Phase III Questionnaire

1	Panelist Name											
	Answer											
2	Knowing the patient's current condition in the emergency department	0	1	2	3	4	5	6	7	8	9	10
3	Knowing the location and function of equipment	0	1	2	3	4	5	6	7	8	9	10
4	Discussing the patient management plan with team members	0	1	2	3	4	5	6	7	8	9	10
5	Managing the patient according to priority of needs	0	1	2	3	4	5	6	7	8	9	10
6	Continuously reassessing the management plan based on observations and patient responses to given interventions	0	1	2	3	4	5	6	7	8	9	10
7	The leader gives verbal and clear patient management instructions	0	1	2	3	4	5	6	7	8	9	10
8	The leader provides information to team members regarding the patient's current condition and expected goals	0	1	2	3	4	5	6	7	8	9	10
9	The leader encourages team members to share opinions and management plans	0	1	2	3	4	5	6	7	8	9	10
10	Conducting debriefing after the crisis	0	1	2	3	4	5	6	7	8	9	10
11	Knowing each member's role	0	1	2	3	4	5	6	7	8	9	10
12	Preventing team members from making fixation errors	0	1	2	3	4	5	6	7	8	9	10
13	The leader clearly assigns roles at the beginning	0	1	2	3	4	5	6	7	8	9	10
14	The leader uses a direct and authoritative approach when needed (time critical)	0	1	2	3	4	5	6	7	8	9	10
15	When role changes occur in the team, ensuring clear verbal handover	0	1	2	3	4	5	6	7	8	9	10
16	Providing information when there is a change in condition	0	1	2	3	4	5	6	7	8	9	10
17	Using closed-loop communication	0	1	2	3	4	5	6	7	8	9	10

Supplementary Figure 2. Delphi Phase III Questionnaire