

بسم الله الرحمن الرحيم
الحمد لله رب العالمين
والصلاة والسلام على
سيدنا محمد وآله الطيبين
الطاهرين



SCCM 2023 CLINICAL PRACTICE GUIDELINE

Recognizing & Responding to Clinical Deterioration Outside the ICU

An orientation for medical students beginning ward-based clinical training

Seyed Rouhollah Hosseini M.D.
Emergency medicine specialist
Assistant professor in Emergency medicine Department



این ارائه تقدیم می‌شود به

اسناد فقید

دکتر رضانک اندیش نور

باسپاس بی پایان از سال ها آموزش، راهنمایی و حضور ابراهیم بخش
ایمان به تعلیق های محکم پرانگان
روحش شاد و یادش گرامی

THE PROBLEM

Deterioration doesn't wait for the ICU

Critically ill patients are usually cared for in the ICU to allow frequent assessment and technological support. But when deterioration begins on a general ward, staffing ratios and resources are configured for lower acuity — early recognition and a prompt response are what give these patients their best chance.

What this guideline covers:

- 1 Early recognition of at-risk ward patients
- 2 Prompt mobilization of the right resources

KEY FACT

Patients who trigger a rapid response call have

higher mortality

than other ward patients

The moment of a call is a critical juncture in care — recognizing it early, and responding well, changes outcomes.

Two questions, ten recommendations

The panel organized its guidance around two linked questions. We'll move through both in the next 20 minutes, then open up for discussion.



PART A

Recognizing Deterioration

- Vital sign measurement & escalation
- Continuous vital sign monitoring
- Focused clinician education
- Patient & family empowerment



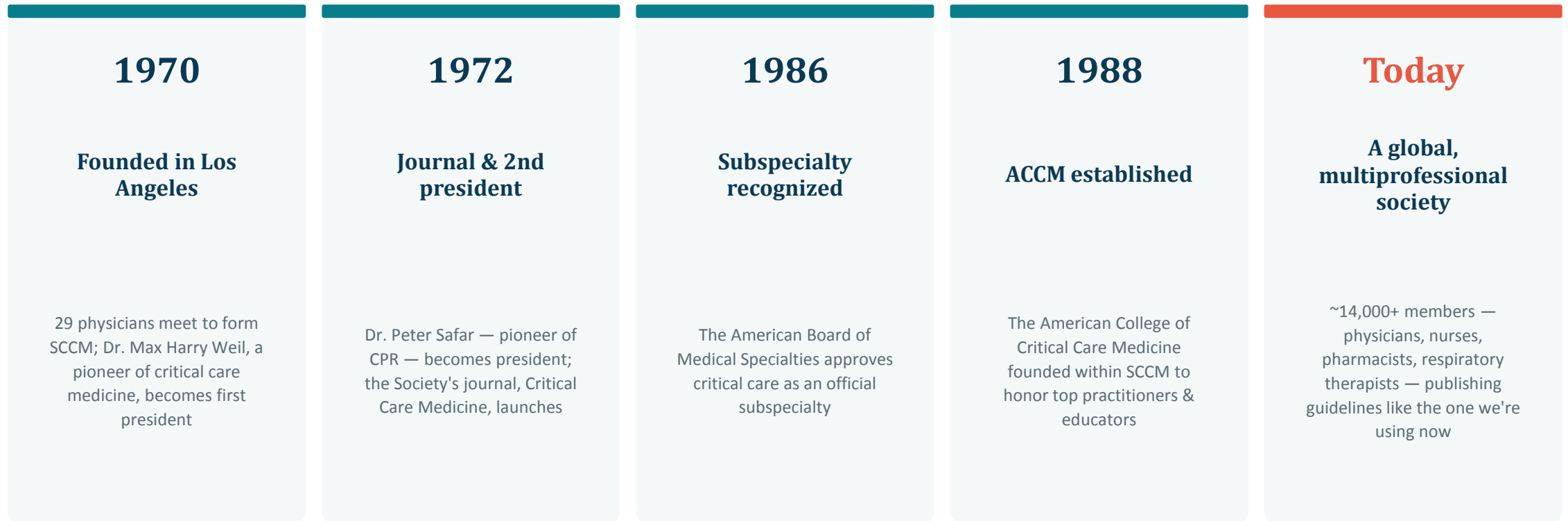
PART B

Responding to Deterioration

- Rapid response systems (RRT/MET)
- Team leadership & composition
- Goals-of-care conversations
- Quality improvement

Who wrote this guideline? A brief history of SCCM

The Society of Critical Care Medicine (SCCM) is the world's largest multiprofessional organization dedicated to critical care — and the body behind the guideline we're covering today.



This topic builds the qualities of a great doctor

Mayo Clinic Alix School of Medicine leadership were asked what separates a great physician from a good one — not test scores, but nine specific qualities. Two sit at the heart of today's guideline.

4

Attention to Detail

Subtle exam and vital-sign findings, carefully elicited and interpreted, reveal the precise source of a patient's symptoms.

Dr. Jeremy Cutsforth-Gregory, Assistant Dean of Career Advising

↳ Part A — Recognition

8

Calm Under Pressure

When a patient is crashing, staying the calmest person in the room lets the whole team make its clearest decisions.

Dr. Douglas Rappaport, Assistant Dean of Career Advising

↳ Part B — Response

2

Communication Skills

Strong communication builds trust between patient and physician and is directly linked to better health outcomes.

Dr. Abba Zubair, Vice Dean, Mayo Clinic Alix School of Medicine

↳ Escalation & goals-of-care talks

7

Teamwork Skills

Listening, collaborating, and communicating with empathy within a team is essential for holistic, effective care.

Dr. Torrey Laack, Assistant Dean for Curriculum

↳ The rapid response team

Great doctors aren't born knowing this — they train for it

None of the nine qualities Mayo Clinic's own faculty describe is innate talent alone — every one of them is a skill built through deliberate practice, starting on the wards, starting this month.

- 1 Recognition** = Attention to detail, applied to vital signs
- 2 Escalation** = Communication, applied under time pressure
- 3 Response** = Calm under pressure + teamwork, together
- 4 Goals of care** = Patient-centered care at the hardest moments

9

qualities identified by Mayo Clinic Alix School of Medicine faculty as defining a great physician

Today's session directly trains 4 of them

— starting on your very first ward rotation

Reading GRADE-style recommendations

You'll see four categories of guidance today. Knowing the difference helps you apply them sensibly at the bedside.

1

Strong Recommendation

“We recommend...” Benefits clearly outweigh harms — most patients should receive it.

2

Good Practice Statement

Benefits are so obvious that formal evidence grading isn't needed — treated as equivalent to a strong recommendation.

3

Conditional Recommendation

“We suggest...” Evidence is lower-certainty or trade-offs are close — tailor to the patient.

4

No Recommendation

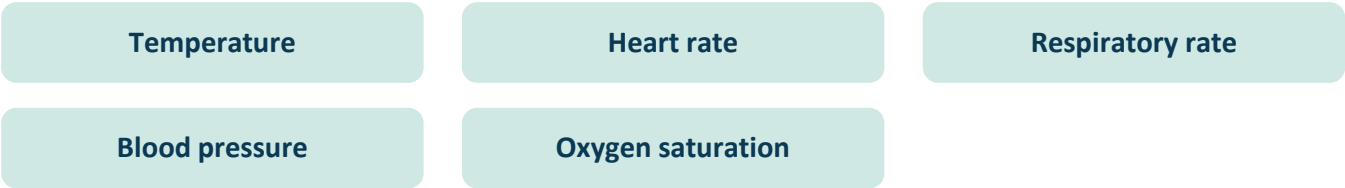
Evidence is too uncertain to guide practice either way — a genuine open question.

Get the vital signs right — every time

GOOD PRACTICE STATEMENT

Ward staff should acquire a complete, accurate set of vital signs whenever ordered — and when something feels off — and escalate significant abnormalities urgently.

Traditional vital signs



+ supplemental signs often included: pain, mental status



Why this GPS exists

Studies repeatedly show incomplete or inaccurate vital sign measurement on the wards — a preventable cause of missed deterioration. Education, audit, and feedback improve compliance.

THE ESCALATION CHAIN

- 1 Measure accurately
- 2 Document promptly
- 3 Recognize abnormality
- 4 Escalate urgently

Continuous monitoring: an open question

For unselected non-ICU patients, the panel could not recommend for or against routine continuous monitoring — the evidence is genuinely mixed.

Possible upside

- Possible decrease in ICU length of stay (low certainty)
- May help in select settings: patient-controlled analgesia infusions, active cardiac disease

Effects on mortality, cardiac arrests, and unplanned ICU transfers all remain uncertain (very low certainty).

Real concerns raised by the panel

- False alarms may disrupt patient sleep & increase staff workload
- A false sense of security may substitute for bedside assessment
- Unknown cost-effectiveness; not feasible in low-resource settings
- Possible equity impact: some devices are less accurate across skin tones

Two more eyes on the patient: clinicians & families

3

Focused clinician education

CONDITIONAL • LOW CERTAINTY

Suggested for direct-care non-ICU clinicians on recognizing early deterioration. Usually bundled with RRT/MET rollout — possible reduction in ICU length of stay and better compliance with early warning systems.

4A

Patients & families can spot subtle change

GOOD PRACTICE STATEMENT

They should be empowered to alert staff directly, including the rapid response system, when something seems wrong — even without meeting formal criteria.

4B

Build their concerns into early warning systems

CONDITIONAL • LOW CERTAINTY

Formal family-activation pathways are uncommon and mostly used after a communication breakdown — but where they exist, they're linked to timelier intervention and are highly valued by families.

The centerpiece: Rapid Response Systems

“We recommend hospital-wide deployment of a rapid response team / medical emergency team (RRT/MET) with explicit activation criteria for obtaining help from a designated response team.”

— moderate certainty evidence

What the evidence showed (pooled RCTs)

↓ Mortality

3 RCTs, moderate certainty

No effect found on quality of life or discharge disposition. Effects on transfer to higher-level care were unclear.

↓ Cardiac arrests

2 RCTs, moderate certainty

BASED ON 6 RCTs +

112

before-after studies evaluated

— the largest evidence base of any recommendation in this guideline

Example: who's on the team?

There's no single required roster (Recommendation 6) — but most hospital RRTs share a core structure. Here's a common example:



Remember: the panel found no evidence that any one composition outperforms another — what matters is a fast, confident response.

The RRT/MET call is a critical juncture

CONDITIONAL · LOW CERTAINTY

We suggest ensuring responding clinicians have expertise in eliciting patients' goals of care and building treatment plans that reflect their wishes and prognosis. (Recommendation 7B)

Why it matters

Patients who trigger an emergency team call have higher mortality than other ward patients — the call itself is often the first moment anyone reassesses the patient's values alongside their disease.

Equity considerations the panel raised

- Don't approach the conversation with a pre-set outcome in mind
- Offer every patient the chance to discuss values & goals, regardless of background
- Adapt discussions to language and culture (recent immigrants and some ethnic minorities are more likely to receive aggressive, non-concordant care)



Effect of goals-of-care education

Moderate certainty ↑

re-evaluation & documentation of goals-of-care preferences and resuscitation status

No effect

on palliative care consultation rates or functional status at discharge

Possible undesirable effect:

disagreement between ward and RRT/MET staff on timing/content of the conversation

Example activation criteria: the NEWS2 chart

Many hospitals trigger RRT/MET activation with a track-and-trigger score. NEWS2 (Royal College of Physicians) scores 7 vital-sign bands from 0 (normal) to 3 (severely abnormal) and sums them.

Parameter	3	2	1	0	1	2	3
Respiration rate (/min)	≤8		9–11	12–20		21–24	≥25
SpO ₂ — Scale 1 (%)	≤91	92–93	94–95	≥96			
Air or oxygen		On O ₂		Air			
Systolic BP (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (bpm)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU*
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

*CVPU = new Confusion, or responds to Voice / Pain / Unresponsive • Total score range: 0–20 • Supplemental O₂ itself scores 2

0

Routine monitoring

1–4

↑ monitoring frequency; inform nurse in charge

5–6 or single param = 3

Urgent clinical review — consider RRT/MET

≥ 7

Emergency response — activate RRT/MET now

Closing the loop: quality improvement

“A process for quality improvement should be part of a Rapid Response System.” The most effective RRS programs all had a QI process built in — but the right structure varies by hospital size and resources.

1

Capture every event

Log all cases that qualified for — and all that received — an RRT/MET response, including missed activations

2

Audit & feedback

Case-based reviews (smaller centers) or volume-adjusted trend analysis (larger centers)

3

Team communication

Structured handover & teamwork strategies reduce delays and missed triggers

4

Include patient & family voice

Their perspective should feed back into the QI process, not just clinical data

RECAP

All 10 recommendations at a glance

1	Complete, accurate vital signs + urgent escalation	GPS
2	Routine continuous monitoring in unselected patients	No rec.
3	Focused education for ward clinicians	Conditional
4A	Patients/families empowered to alert staff	GPS
4B	Incorporate family concerns into early warning systems	Conditional
5	Hospital-wide RRT/MET with explicit activation criteria	Strong
6	RRT/MET leadership / composition	No rec.
7A	Palliative care personnel on the RRT/MET	No rec.
7B	Responders skilled in eliciting goals of care	Conditional
8	Quality improvement process for the RRS	GPS

Five habits to start this month

1

Get a full, accurate vital sign set

and escalate abnormalities immediately — don't wait for the next round

2

Listen when a patient or family says “something's wrong”

even if the numbers look fine, trust it enough to act

3

Learn your hospital's RRT/MET activation criteria today

know the number and don't hesitate to call it

4

Monitors support judgment, they don't replace it

go and look at the patient — a stable screen can hide instability

5

Every RRT/MET call is a chance to check goals of care

ask early, ask everyone, adapt to language and culture



Questions & Discussion

Reference

Honarmand K, Wax RS, Penoyer D, et al. Society of Critical Care Medicine Guidelines on Recognizing and Responding to Clinical Deterioration Outside the ICU: 2023. Crit Care Med. 2024;52(2):314–330.