Rumah Sakit sebagai “Highly Reliable Organization” contoh dari pelayanan ICU

Rudyanto Sedono

ICU Department of Anesthesiology and Intensive Care
Faculty of Medicine University of Indonesia
Cipto Mangunkusumo Hospital
Jakarta
Presenter disclosures

- No financial relationship or commercial interests to disclose
- Not Hospital Manager
- No educational or training on managerial
- No carrier in managerial
- Pure clinician
High Reliability Organization

Organizations that have the potential for catastrophic failure yet engage in nearly error-free performance.

Aircraft carriers
Electrical power grids
Wildland firefighting

The essence of high reliability organizing is a set of principles that enable organizations to focus attention on emergent problems and to deploy the right set of resources to address those problems

Christianson. Critical Care 2011,15:314
High reliability organizing is characterized by five key principles that facilitate both problem detection and problem management

1. Preoccupation with failure: using failure and near failure as ways to gain insight into the strengths and weaknesses of the system
2. Reluctance to simplify: avoiding the tendency to minimize or explain away problems
3. Sensitivity to operations: being aware of the ‘big picture’, specifically how all the components of work fit together and how problems in one area can spread to other areas. For problem management, high reliability organizing involves
4. Resilience: developing the capability to cope with unexpected events
5. Deference to expertise: understanding where the expertise is in the organization and ensuring that decisions about how to deal with problems are made by those experts. By enacting these principles in a set of daily processes and practices, HROs repeatedly and continually shape and reshape a binding safety culture

Christianson. Critical Care 2011, 15:314
## Principles of high reliability organizing applied to the intensive care unit

<table>
<thead>
<tr>
<th>Principle</th>
<th>Examples of ICU applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoccupation with failure</td>
<td>Establish immediate post-code debriefings.</td>
</tr>
<tr>
<td></td>
<td>Include likely mechanisms of each patient’s decompensation in sign-out rounds.</td>
</tr>
<tr>
<td></td>
<td>Engage in regular performance benchmarking.</td>
</tr>
<tr>
<td></td>
<td>Encourage blameless reporting of near failures and failures.</td>
</tr>
<tr>
<td></td>
<td>Use detailed analysis of incidents and errors for potential improvements in processes.</td>
</tr>
<tr>
<td>Reluctance to simplify</td>
<td>Be aware of cognitive bias in diagnosis and work to avoid premature diagnostic closure.</td>
</tr>
<tr>
<td></td>
<td>Maintain and revisit broad differential diagnoses.</td>
</tr>
<tr>
<td></td>
<td>Use multidisciplinary analyses as a basis for decision making.</td>
</tr>
<tr>
<td></td>
<td>Resist the tendency to ascribe only one cause to incidents and errors.</td>
</tr>
<tr>
<td>Sensitivity to operations</td>
<td>Maintain awareness of the patient’s overall condition rather than focus on one particular</td>
</tr>
<tr>
<td></td>
<td>problem or organ system.</td>
</tr>
<tr>
<td></td>
<td>Use tools that facilitate information sharing between team members (that is, electronic</td>
</tr>
<tr>
<td></td>
<td>medical records).</td>
</tr>
<tr>
<td></td>
<td>Monitor unit-wide and hospital-wide conditions, such as bed availability, personnel shortages,</td>
</tr>
<tr>
<td></td>
<td>and unit acuity fluctuations.</td>
</tr>
<tr>
<td>Resilience</td>
<td>Emphasize the importance of working together in multidisciplinary teams.</td>
</tr>
<tr>
<td></td>
<td>Encourage flexibility in team members to accommodate changes in unit acuity or hospital</td>
</tr>
<tr>
<td></td>
<td>resources.</td>
</tr>
<tr>
<td></td>
<td>Explicitly include training around how to manage unexpected events in ICU staff educational</td>
</tr>
<tr>
<td></td>
<td>training.</td>
</tr>
<tr>
<td>Deference to expertise</td>
<td>Foster knowledge of team members’ particular strengths and weaknesses, including specialized</td>
</tr>
<tr>
<td></td>
<td>services (that is, ability to manage a balloon pump).</td>
</tr>
<tr>
<td></td>
<td>Use appropriate clinical pathways and protocols (that is, nursing-driven sedation and</td>
</tr>
<tr>
<td></td>
<td>respiratory therapist-led weaning protocols).</td>
</tr>
<tr>
<td></td>
<td>Institute multidisciplinary rounds on which nursing, respiratory therapy, pharmacy, and</td>
</tr>
<tr>
<td></td>
<td>families have active voices and full participation.</td>
</tr>
</tbody>
</table>

*Christianson. Critical Care 2011,15:314*
What is an ICU?
What is an ICU?

- Ventilator
- Specific room
- ICU Consultant
- Modern devices
- Modern lab
- Best ICU Nurse
- Drugs availability
- Doctor availability
A dedicated area for managing critically ill patients while preventing future deterioration, delivering high level quality care, in which all monitoring and therapeutic devices required are immediately available, together with a large, multidisciplinary, highly specialised team of professionals, with a high nurse-to-patient and physician-to-patient ratio
Suatu bagian dari rumah sakit yang mandiri (instalasi dibawah direktur pelayanan) dengan staf yang khusus dan perlengkapan yang khusus yang ditujukan untuk observasi, perawatan dan terapi pasien-pasien yang menderita penyakit, cedera atau penyulit-penyulit yang mengancam nyawa atau potensial mengancam nyawa dengan prognosis dubia. ICU menyediakan kemampuan dan sarana, prasarana serta peralatan khusus untuk menunjang fungsi-fungsi vital dengan menggunakan ketrampilan staf medik, perawat dan staf lain yang berpengalaman dalam pengelolaan keadaan tersebut.

 Pedoman Penyelenggaraan Pelayanan ICU KEMKES 2010
ICU ≠ PRE MORTUARY ROOM

ICU ≠ PRESTIGIOUS PLACE FOR DIE

Too sick to benefit

ICU ≠ SAFETY FEELING FROM DOCTOR OR FAMILY

Too well to benefit

End of live care room
Intensity of treatment

Intensity

Home

Hospital Ward

HCU
IW
HDU
ED

ICU

Takala J. 25 Years of Progress and Innovation in Intensive Care Medicine. ESICM 2007
Intensity of treatment

Stepwise changes in intensity of treatment and monitoring

Home  Hospital Ward  HCU IW HDU ED  ICU

Takala J. 25 Years of Progress and Innovation in Intensive Care Medicine. ESICM 2007
Takala J. 25 Years of Progress and Innovation in Intensive Care Medicine. ESICM 2007

Intensity of treatment

Home

Hospital Ward

HCU
IW
HDU
ED

ICU

Cumulative delay and Lost opportunity

stepwise changes in intensity of treatment and monitoring
ICU Leveling

Level 1
Level 2
Level 3

ICU Tersier
ICU Sekunder
ICU Primer

SCCM
JCI Accreditation 2010

Kemkes 2010
How Professional are you?
How Professional are you?
How Professional are you?
How Professional are you?

How Extraordinary are you?
Internal Process

External Process
How to manage an ICU?

Internal Process

External Process

Open
Closed
Semi Closed
Internal Process

- Improvement quality of care with multidisciplinary team
- Internal audit
- In house training and education
- Standard and protocol
- Key performance indicator
- Professionalism and Communication
Critical Care Practice Model

- Multidisciplinary Critical Care
- Physician Component – The Intensivist
- Nursing Component
- Pharmacy Component
- Respiratory Therapy Component


- Clinical Nutrition
- Clinical Microbiologist
- Clinical Rehabilitation
- Clinical Pathologist
- Radiologist
Multidisciplinary Critical Care

• Medical and nursing directors with authority and responsibility for ICU management

• Nursing, respiratory therapy and pharmacy collaboration as a team approach

• Use of standards, protocols and guideline to assure consistent approach to patient

• Dedication to coordination and communication for all aspects of ICU management

• Emphasis on practitioner certification, research, education, ethical and patient advocacy

Physician Component – The Intensivist

• Intensivist as the coordinator and leader of the multidisciplinary approach to the care of the critically ill patient.

• Intensivist as full time ICU director and full time dedicated to ICU

• Intensivist coordinated ICU management activities necessary for the safe, efficient, timely and consistent delivery of care

Intensivist responsibility

• Patient triage based on admission and discharge criteria, bed allocation and discharge planning

• Development and enforcement of critical and administrative protocol that are intended to improve the safe and efficient delivery of clinical care and to meet regulatory requirement

• Coordination and assistance in the implementation of quality improvement in ICU

Nursing Component

- Staff nurse, nurse manager, clinical nurse specialist and acute care nurse practitioner.
- Medical staff partnership
- Total care of patient
- Understanding and supporting technical medical care, diagnosis, treatment, care planning and priority setting
- Grading level of ICU nurse and in house training to make quality improvement expertise

Pharmacy Component

• Comprehensive monitoring of medication usage to provide cost effective pharmacotherapy

• Drugs therapy evaluation (prospective or retrospective) to maximize patient outcome

• Critical care satellite pharmacy, dispensing of medication, evaluation of medical order and attending ICU round

• Pharmacists should implement and maintain policies and procedures related to safe and effective use of medications in the intensive care unit.

Clinical Microbiology

• Infection control

• Teaching and training infection control

• Collect specimen for microbiology and resistance

• Antibiotic controlling

• Microbiology and resistance report and evaluation
Clinical Nutrition

• Responsible for nutritional therapy

• Teaching and training nutritional therapy

• Report and evaluation nutritional therapy
<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.30-08.00</td>
<td>Intensivist round</td>
<td>Intensivist round</td>
<td>Intensivist round</td>
<td>Intensivist round</td>
<td>Intensivist round</td>
</tr>
<tr>
<td>07.30-08.30</td>
<td>Nurse hand over</td>
<td>Nurse hand over</td>
<td>Nurse hand over</td>
<td>Nurse hand over</td>
<td>Nurse hand over</td>
</tr>
<tr>
<td>08.00-09.30</td>
<td>Morning report</td>
<td>Morning report</td>
<td>Morning report</td>
<td>Morning report</td>
<td>Morning report</td>
</tr>
<tr>
<td>09.30-11.00</td>
<td>ICU round</td>
<td>ICU round</td>
<td>ICU round</td>
<td>ICU round</td>
<td>ICU round</td>
</tr>
<tr>
<td>11.00-13.00</td>
<td>ICU time</td>
<td>ICU time</td>
<td>ICU time</td>
<td>ICU time</td>
<td>ICU time</td>
</tr>
<tr>
<td>13.00-14.00</td>
<td>Staff meeting</td>
<td>Mortality report</td>
<td>Consultant meeting</td>
<td>Journal club</td>
<td>Staff training</td>
</tr>
<tr>
<td>14.00-15.30</td>
<td>ICU round</td>
<td>ICU round</td>
<td>ICU round</td>
<td>ICU round</td>
<td>ICU round</td>
</tr>
<tr>
<td>15.00-06.30</td>
<td>On duty</td>
<td>On duty</td>
<td>On duty</td>
<td>On duty</td>
<td>On duty</td>
</tr>
</tbody>
</table>
Multidisciplinary obligation

1. Able to make a good coordination for totally care of patient

2. Totally care including all organ system

3. Able to make a prevention from duplication of treatment and intervention

4. Respected to patient with best standard of care
# Consultant team

<table>
<thead>
<tr>
<th>General surgeon or trauma surgeon</th>
<th>Pulmonologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurosurgeon</td>
<td>Gastroenterologist</td>
</tr>
<tr>
<td>Cardiovascular surgeon</td>
<td>Hematologist</td>
</tr>
<tr>
<td>Obstetric-gynecologic surgeon</td>
<td>Urologist</td>
</tr>
<tr>
<td>Infectious disease specialist</td>
<td>Nephrologist</td>
</tr>
<tr>
<td>Thoracic surgeon</td>
<td>Pathologist</td>
</tr>
<tr>
<td>Vascular surgeon</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>Radiologist with interventional capability</td>
<td>Neurologist</td>
</tr>
<tr>
<td>Cardiologist with interventional capability</td>
<td>Orthopedic surgeon</td>
</tr>
</tbody>
</table>
## Consultant team

<table>
<thead>
<tr>
<th>General surgeon or trauma surgeon</th>
<th>Pulmonologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurosurgeon</td>
<td>Gastroenterologist</td>
</tr>
<tr>
<td>Cardiovascular surgeon</td>
<td>Hematologist</td>
</tr>
<tr>
<td>Obstetric-gynecologic surgeon</td>
<td>Urologist</td>
</tr>
<tr>
<td>Infectious disease specialist</td>
<td>Nephrologist</td>
</tr>
<tr>
<td>Thoracic surgeon</td>
<td>Pathologist</td>
</tr>
<tr>
<td>Vascular surgeon</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>Radiologist with interventional capability</td>
<td>Neurologist</td>
</tr>
<tr>
<td>Cardiologist with interventional capability</td>
<td>Orthopedic surgeon</td>
</tr>
</tbody>
</table>

*in 30 minutes*

*Patient Safety in ICU. JCI accreditation 2010*
Key Performance Indicator

1. BOR, LOS, BTO, TOI, GDR, NDR
2. Hand Hygiene, VAP, Blood stream infection, wound infection, decubitus, urinary infection, needle stick injury, infection control
3. Patient safety, cost effectiveness, ICU error
4. Readmitted, reintubation, self extubation
5. Antibiotic round, Management round, Complex Case round
ICU Round Checklist

1. Patient Identity
2. Pain
3. Risk of Fall/side rails
4. Consciousness
5. Personal Hygiene
6. Wound Care
7. Peptic Ulcer Disease Prophylaxis
8. Nutrition Evaluation
9. DVT Prophylaxis
10. Central Line Evaluation
11. Sedation Evaluation
12. Glucose Control
13. Highest Glucose Level in 24 Hour
14. Lowest Glucose Level in 24 Hour
15. Intubation Method
16. Day of Ventilator
17. Weaning Assessment
18. Day Ventilator Corrugated
19. ETT/Tracheal Cannule
20. Head of the Bed Elevation
21. Antibiotic Evaluation
22. Microbiology Culture
23. Invasive Line
24. Drug Storage

Sedono and team. ICU Cipto 2011
Staff meeting

Every Monday

- Head of ICU
- Head Nurse
- Nurse Manager
- Clinical Nurse
- ICN
- Technician
- Pharmacies
- Billing
- Administration
- Residence
Staff meeting

*Every Monday*

- Head of ICU
- Head Nurse
- Nurse Manager
- Clinical Nurse
- ICN
- Technician
- Pharmacies
- Billing
- Administration
- Residence

[Weekly evaluation]
External process
External process

ICU cannot standing alone ! ! !
External process

*ICU can not standing alone!* ! ! !

- Laboratory
- Radiology
- Emergency unit
- Operating room
- Ward
- Interventional room
- Insurance
- Billing
- Pharmacy
- Technician
- Cleaning services
- Etc
External process

*IITU can not standing alone!!

- Laboratory
- Radiology
- Emergency unit
- Operating room
- Ward
- Interventional room
- Insurance
- Billing
- Pharmacy
- Technician
- Cleaning services
- Etc

Hospital Policy
Goals for a well organized ICU

Patients need ICU from emergency

Admit right patients, at right time, provide optimum intensive care

Patients need ICU from elective

Takala J. 25 Years of Progress and Innovation in Intensive Care Medicine. ESICM 2007
Internal Process

External Process
Who is determine the best services?

**Internal Process**

**External Process**
Who is determine the best services?

The bad one

Internal Process

External Process

Tuesday, November 19, 13
Nilai, hukum, sosial budaya, norma, etika, adat istiadat, yang berlaku di masyarakat
Kasus

35 th, KLL, epidural hematoma E2 M2 V2, fraktur femur terbuka dan syok hemoragik TD 70 / palp, kraniotomi dan hemostasis cito

89 th, stroke berulang serangan ke 5, E2 M2 Vtrach, kardio miopati EF 25% global hipokinetik, CKD, sirosis hepatitis

Jamkesmas
Gakin
KJS
ASKES SOS
Kasus

35 th, KLL, epidural hematoma E2 M2 V2, fraktur femur terbuka dan syok hemoragik TD 70 / palp, kraniotomi dan hemostasis cito

89 th, stroke berulang serangan ke 5, E2 M2 Vtrach, kardio miopati EF 25 % global hipokinetik, CKD, sirosis hepatitis

Jamkesmas
Gakin
KJS
ASKES SOS

Bpknya anggota DPR
Mertua Prof
Saudara Direktur
Titipan Pejabat Negara
Morning report
ICU Round

Tuesday, November 19, 13
ICU Round
<table>
<thead>
<tr>
<th>Generic name</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3</td>
</tr>
<tr>
<td>Pipemacin 4x15gr</td>
</tr>
<tr>
<td>Amikacin 1x1gr</td>
</tr>
<tr>
<td>Ranikidin 2x50y</td>
</tr>
<tr>
<td>Ketorolac 3x30y</td>
</tr>
<tr>
<td>Fenitoin 3x100y</td>
</tr>
<tr>
<td>Simvastatin 1x20y</td>
</tr>
<tr>
<td>Amlodipin 1x5y</td>
</tr>
</tbody>
</table>
Drug monitoring form
Staff meeting
Tutorials
At the end of the day, managing an ICU is like driving a world rally championship car: Hardware, technical issues and teamwork certainly are important, but above all, result come from the state of mine that produces championship; an ability to fight for victory, with the constant awareness that the work of many hours could be lost in a few moment of distraction

*Moreno. Organisation and Management of Intensive Care. ESICM 2010*
In a standard 13 to 16 second pit stop, the six-man crew provides the driver with a fresh bottle of water, four new tires, a tank of gas, a clean grill and windshield, while making numerous other adjustments to the car.
Team work
Team work

Matur nuwun