



# Protocolled or Individualized Care in the ICU?

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# The Complexity of Intensive Care

## Variability

The severity of organ failure and precipitating factors vary significantly between subgroups of patients.

## Disease Evolution

The phenotype of the disease changes over time, requiring constant adaptation of treatment.





# Benefits of Protocolized Care

## Systematization

They ensure that desirable treatments are considered and implemented in a timely manner.

## Demonstrated Efficacy

Protocols have shown efficacy in sepsis, ARDS, and shock for example.

## Clinical Coding

Often incorporated into sets of pre-specified clinical orders.



<b>100%</b> Standardized protocol protocol chart	 Dermlined treatment	<b>355</b> Styined perpatient
<b>21%</b> Patient with patient	 Curpared treatment treatment	 Compeinarand treatment plan



## Protocols vs Individualization

### Consistency in Care

Standardized parameters are useful in the early stages of acute illness.

### Clear Expectations

They allow the team and family members to follow the expected clinical course.

### Limitations

They may result in less successful or impaired outcomes for patients outside the defined group.



# Challenges in Standardizing Treatment

1

## Sepsis Nosocomial

Treatment should be differentiated according to the patient's context.

2

## Antibiotic Selection

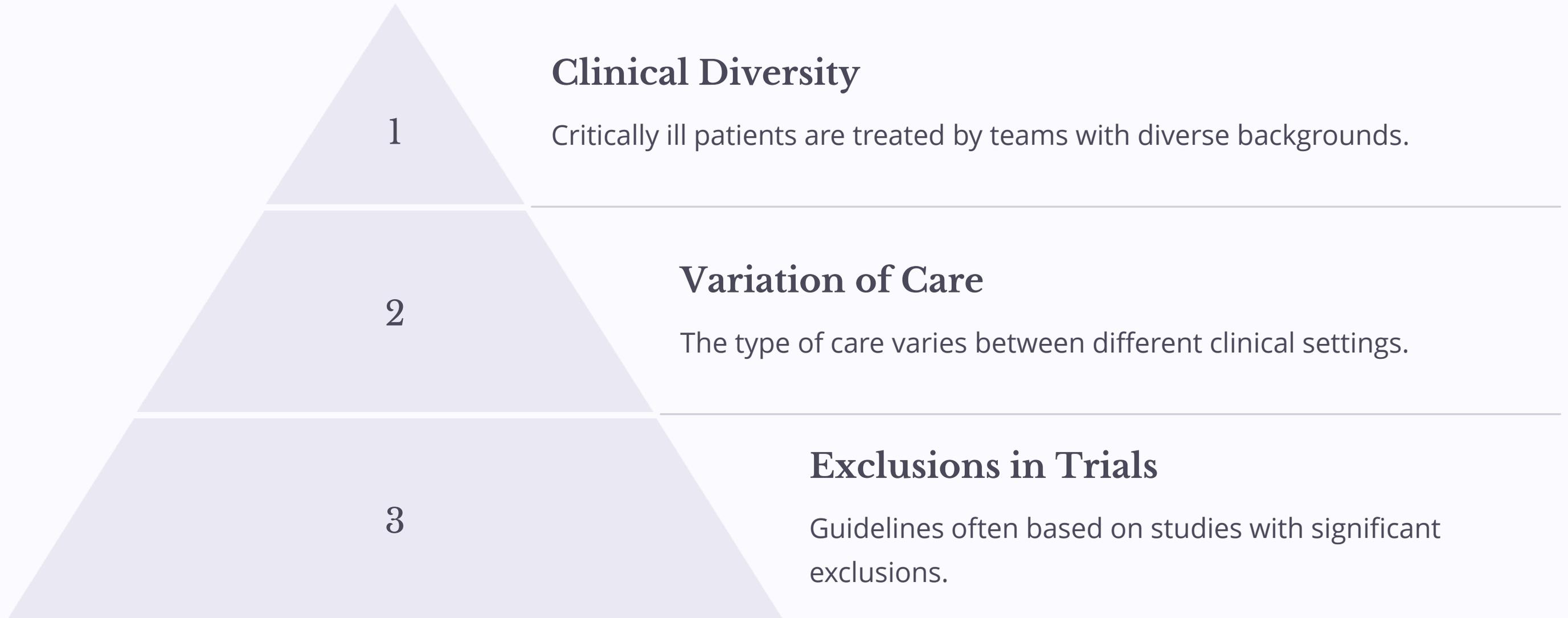
The choice varies according to the patient's specific situation.

3

## Hemodynamic Objectives

Therapeutic targets may require individualized adjustments.

# Complexities in Protocol Application





# Variability in Critical Care Practices



## **IV fluids**

Variation in the type and amount of fluids administered.



## **Vasopressor Support**

Different blood pressure targets between institutions.



## **Mechanical Ventilation**

Individualized parameters vary significantly.



# Barriers to Implementing Evidence-Based Care

1 **Time Constraints**  
Competing demands limit the consistent implementation of optimal practices.

2 **Insufficient Resources**  
Lack of adequate means to implement all desirable interventions.

3 **Heterogeneous Formation**  
Disparities in the experience and training of health professionals.

4 **Clinical Disagreement**  
Some clinicians may not agree on specific aspects of the protocols.

# Protocol Development and Implementation

1

## **Evidence-Based**

Should incorporate results from large randomized controlled trials.

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2

## **Local Development**

Customized to meet the needs of the specific population.

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3

## **Improved Care**

They increase the likelihood that the patient will receive the desired care.

# Protocol Development and Implementation

- In the optimal situation, protocols should encapsulate evidence from large-scale randomized clinical trials (RCTs) and focus on interventions or treatments that demonstrate clear benefit and improve patient-important outcomes.





# Evidence of Success: Protocols in Sepsis

20%

Previous Mortality

In-hospital mortality rate before protocol implementation.

10%

Mortality after

Significant reduction after implementation of the sepsis protocol.

- Studies show improved adherence to important measures, such as time for antibiotics and appropriate use of diagnostic tests.

Miller RR 3rd, Dong L, Nelson NC, et al. ; Intermountain Healthcare Intensive Medicine Clinical Program: Multicenter implementation of a severe sepsis and septic shock treatment bundle. Am J Respir Crit Care Med 2013; 188:77-82

# Variability in Critical Care Practices



- Many patients, unfortunately, do not receive optimal or evidence-based care during their ICU stay.
- Even interventions which have demonstrable benefits such as early antibiotics in sepsis, lung protective mechanical ventilation in acute respiratory distress syndrome (ARDS), early mobility, and avoidance of high dose sedative infusions in mechanically ventilated patients are not consistently delivered in the ICU.

# Benefits of Protocolized Care

- Robust evidence suggests that the use of a protocol is more likely to lead to a patient receiving desired care, and the presence of a treatment protocol has been shown to be the strongest predictor that a patient will receive desired care.
- Implementation of an educational platform to increase the use of a standardized protocol for sepsis in 25% of Spain's ICUs was associated with an increase in completion of important patient-focused process measures and decreased mortality.



# Benefits of Protocolized Care

- **Standardized ventilator weaning protocols** have led to more rapid and higher rates of successful removal from mechanical ventilation compared with usual care.
- Importantly, a large prospective cohort study of 15,226 critically ill adults across 68 ICUs demonstrated that the use of standardized approaches to weaning, sedation, mobilization, and family/caregiver engagement (i.e., ABCDEF bundle) was associated with lower likelihood of ongoing need for invasive ventilation, delirium, and mortality.



# Benefits of Protocolized Care

- Protocolized treatment of patients with **ST elevation myocardial infarction** has been associated with improved survival compared with standard care.
- Protocols were associated with improved functional outcomes at the time of hospital discharge and reduced post discharge mortality.



# Individualized evidence



- Patients who are so critically ill that we must consider rarely used rescue therapies that lack sufficient evidence to incorporate into routine protocols.
- Individual patient's values and preferences - which might outweigh any potential benefit to standardizing care in specific situations.

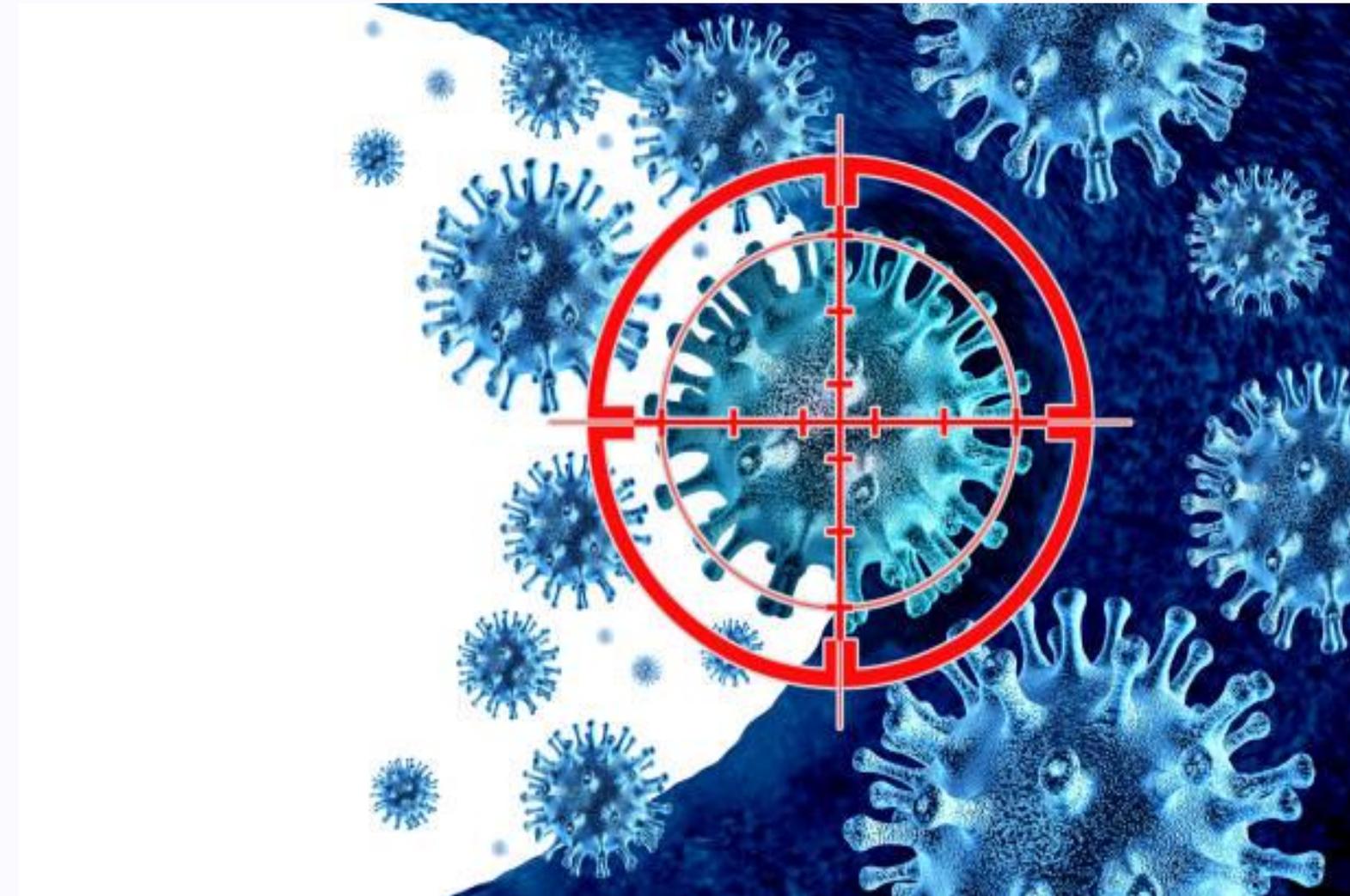
# Protocolized vs Individualized care

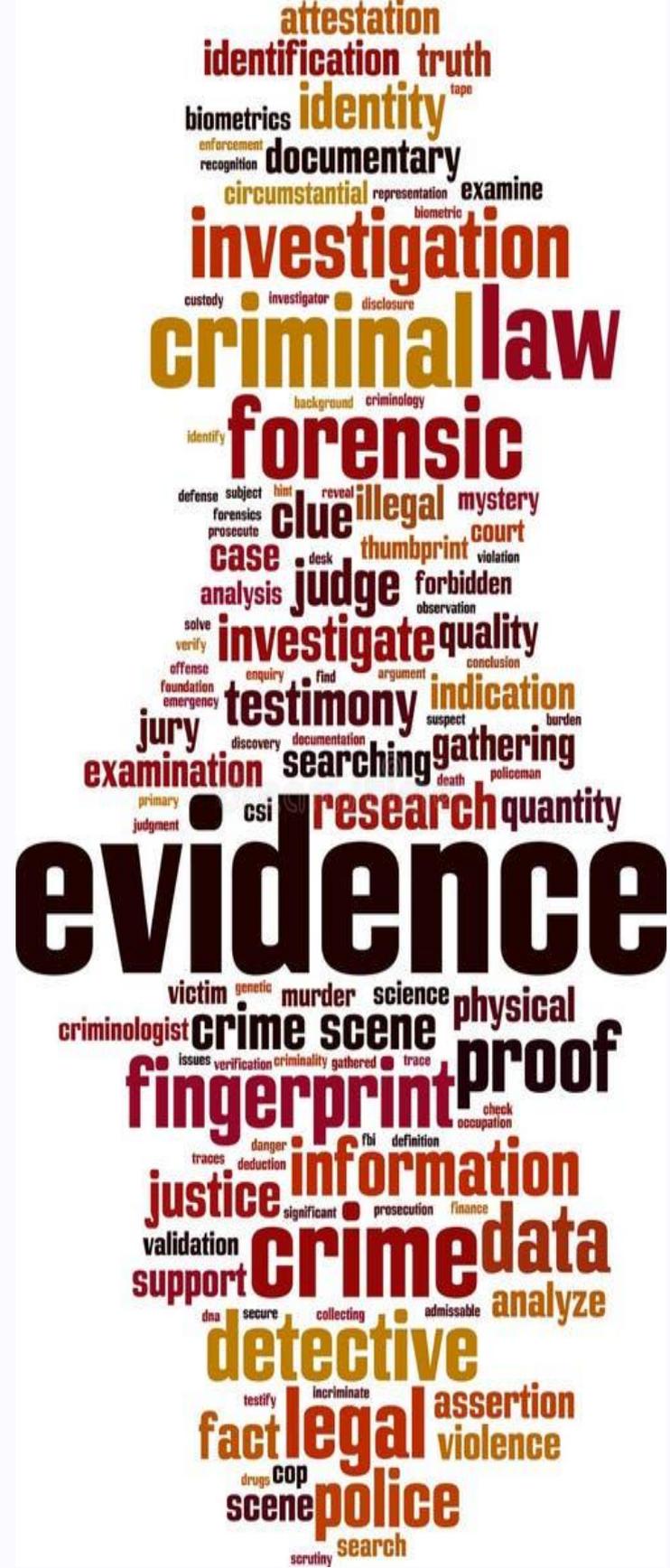
- Systematically consider important treatment and diagnostic strategies in all patients.
- Minimizing unnecessary treatment variation and facilitating the delivery of desired care to patients.
- Personalized care based on individual biomarkers and physiology remains an intellectually attractive, but for now unproven and often inferior, method for delivering optimal care.



# Individualized evidence

- The presence of specific genetic markers in malignancy has allowed for targeted therapy that in many instances has proved much more successful than standardized care.
- To create a local protocol, the clinician should have relatively robust data that supports its use, consensus from local stakeholders, and some mechanism to determine whether standardizing care improves patient outcomes locally (e.g., quality improvement metrics).





# Protocolized vs Individualized care

- Factors incorporated into decisions around strength of randomization include as follows: balance of benefits and harms, certainty of evidence, cost and resources, individual patient values and preferences, impact on health equity, and feasibility and acceptability.
- Similar to locally implemented guidelines, clinicians should strive for evidence that following the protocol or standardized care improves patient outcomes, even when done on a larger scale.

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# THANK YOU



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