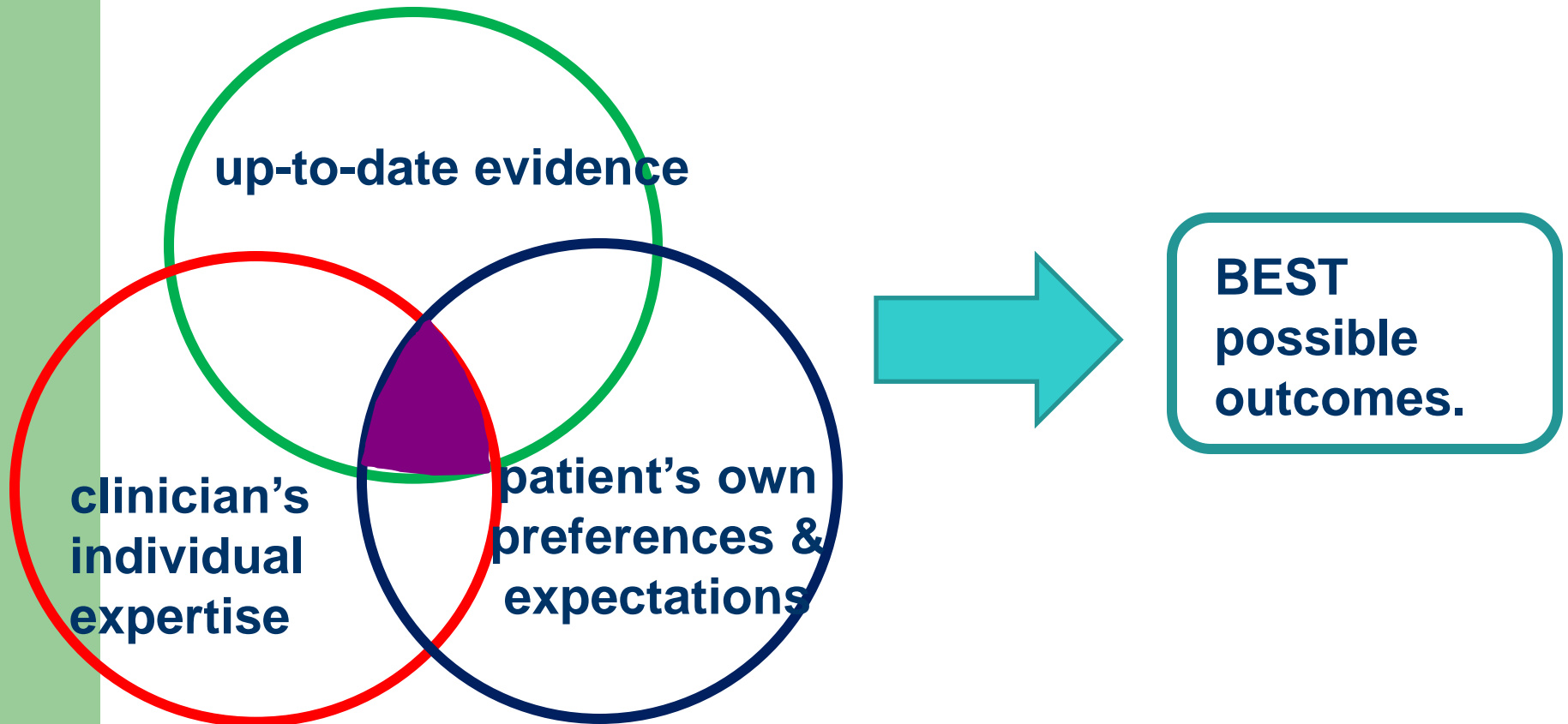


# **Evidence-Based Medicine: Practice and Challenges**

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# Evidence-Based Medicine



# EBM and clinical practice

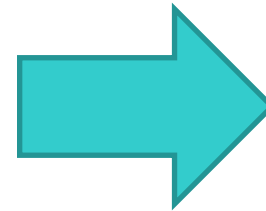
- **Not only EVIDENCE**
- **Integrate with clinician's individual expertise and patient's own preferences, expectations, values**
  - And the inconvenience, availability, and costs.
- **Bedside EBM: NNT/NNH**

# Evidence

A particular clinical question

- Original research
- **Systematic review**

- Treatment availability
- Costs
- Ethical considerations



**Guidelines**

# Challenges

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- **developing better means of integrating different types of evidence from a range of sources to improve decisions about individual patients, and embedding guidelines in personal and stimulating clinical practice.**

## 国内外EBM现况

- 国外：EBM已从理论构建过渡到实际应用阶段
- 国内：EBM停留在“循证医学专业人员”的学习和研究阶段，临床实践的推广阶段

A major challenge to current EBM is how to evaluate and integrate different types of research from a range of conceptual and methodological backgrounds into frontline clinical care and shared decision-making with patients. →Guideline

# Debate 1: Experience- or evidence- BM

- **EBM vs EBM**

- Guideline: experts consensus

- Mixture of scientific research and clinical practice and observation
    - Expert opinion

- **Many studies now focus on developing and evaluating optimal strategies for guideline implementation in the real world of practice.**

## Debate 2: Strong focus on RCTs

- **Overemphasized on RCT**
- **RCT gold standard for intervention**
- **GRADE (5-/3+)**
  - Study Limitations
    - Deficiencies in validity or precision
    - Inconsistencies in outcomes
    - Indirectness of evidence
    - Publication bias.
  - Large magnitude of effect
  - Plausible confounding(negative)
  - Dose-response gradient

# Clinical practice is more complex than trials

- **Research evidence, clinical guidelines, clinical practice**
- **Complexity**
  - implementation: too many, contradiction
  - Combinations: multimorbidity, evidence?
  - Clinical guidelines concerns therapeutic interventions, more than prognosis and diagnosis

# No time, no competence

- EBM has been defined as the **conscientious, explicit, and judicious use** of **current** best evidence, to integrate evidence with clinical expertise, to apply the evidence for **each individual** patient.
- Evidence usually from SRs and clinical guidelines. Too many to keep up.

# Little evidence of what works

- guidelines often provide what you should not do instead of recommending what you should.
- Studies suggesting “no effect” of a treatment are often not enough sample size.
- The number of guideline recommendations for cardiologists had increased, so also had the proportion based on lower levels of evidence or on clinical opinion [Tricoci P, JAMA 2009].

## Small effects only

- Everything works, but the effect is small.
- placebo effect”, “context effect”

# Lack of generalisability

- average results from populations **versus** individualized treatment. [heterogeneity]
- EBM emphasizes evidence for application to individuals but there will always be uncertainty in doing this.
- RCTs often in well-controlled experimental circumstances, **versus** health care in routine circumstances.

## Other aspects besides evidence

- Evidence alone is never sufficient to make a clinical decision.
- Decision: benefits and harms, clinicians' and patients' values, preferences and expectations, and the inconvenience, availability, and costs.

# Conflicts of interest

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- Profession group
- Health insurance
- Industries

# Promoting the industry

- **You Suning: kidnapped by pharmaceutical industry**
  - Approximately 80% of all trials are industry funded
- **litigation related to EBM and guideline use**

# Hampers innovation

- **Sufficient evidence may take decades.**
  - allowing the use of new, innovative interventions at an early stage within the setting of RCTs, audit studies.
  - The alternative: exception to EBM

# Guidelines and routine work

- **Guidelines be used only in situations where they do not immediately know what clinical decision to make. Not in routine cases.**
- **SR and clinical guidelines is a growing and serious problem.**
- **Developing implementation strategies is a major challenge for the future.**