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Translating Nursing Research into Practical Clinical Guidelines and Standard Operating Procedures

Mega Hasanul Huda

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The Missing Link: From Research to Patient Care

Are research findings truly changing what nurses do at the bedside?

RESEARCH
Evidence generated

→

CLINICAL PRACTICE
Evidence implemented

→

PATIENT OUTCOMES
Care improved



Publishing evidence is not the same as changing practice.

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The Global Evidence-to-Practice Gap

HOW LONG DOES IT TAKE FOR EVIDENCE TO REACH PRACTICE?

THE HISTORICAL ESTIMATE

~17 years

Research-to-practice translation

Frequently cited, but not a universal benchmark.

WHAT DOES MORE RECENT EVIDENCE SHOW?

11.13 years

Clinical development to healthcare use in a Brazilian drug study (2022).

2025–2026

Researchers question whether the 17-year figure accurately represents current practice across settings.

The gap is real, but its duration depends on context.

References: Balas & Boren (2000); Morris et al. (2011); Lupatini et al. (2022); Thomson et al. (2025); Alper et al. (2026).

CURRENT SITUATION – INDONESIA

Evidence-Based Nursing in Indonesia:
From Positive Attitudes to Real Implementation



1,075
Perioperative Nurses
EBP engagement is associated with professional development and mentorship.

Swito et al., 2025

30
Nurse Interviews
Positive attitudes exist, but knowledge, skills, and implementation support remain important challenges.

Narulita et al., 2025

Key Challenges Identified in Indonesian Nursing Research

- Limited EBP knowledge and practical skills
- Need for clinical mentorship and leadership support
- Uneven access to research resources and opportunities

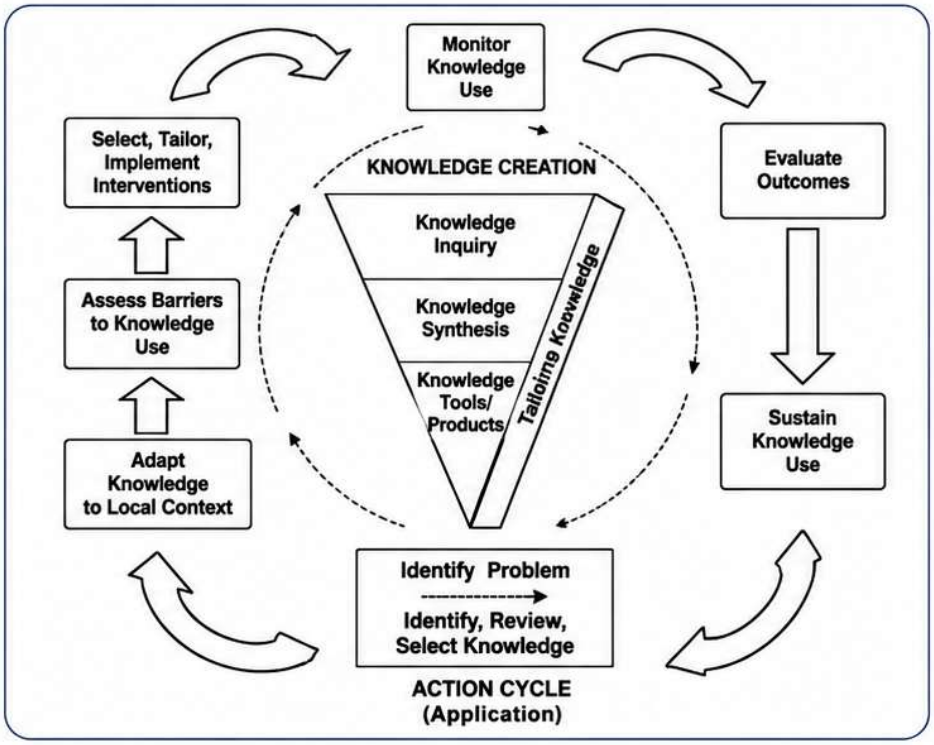
The challenge is not only knowing the evidence, but **integrating it into everyday nursing care.**

Sources: Swito et al. (2025); Narulita et al. (2025). Findings are not nationally representative estimates.

CORE CONCEPT

What is Knowledge Translation?

> *"**Knowledge translation** is the process of turning research evidence into real clinical action. It is not only about publishing or sharing findings, but about making evidence usable, applicable, and sustainable in everyday nursing practice."*



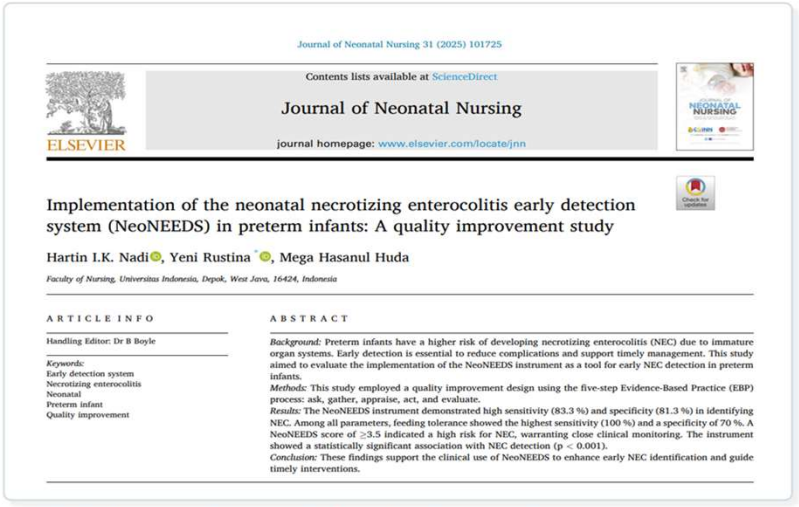
Knowledge-to-Action cycle (Graham et al., 2006).

AGAAE: A Practical Approach to Evidence-Based Nursing

CASE STUDY | EVIDENCE-BASED NURSING PRACTICE

NeoNEEDS: From Evidence to Early NEC Detection

Implementation of a neonatal early-detection system in preterm infants



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Implementation of the neonatal necrotizing enterocolitis early detection system (NeoNEEDS) in preterm infants: A quality improvement study

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ABSTRACT

Background: Preterm infants have a higher risk of developing necrotizing enterocolitis (NEC) due to immature organ systems. Early detection is essential to reduce complications and support timely management. This study aimed to evaluate the implementation of the NeoNEEDS instrument as a tool for early NEC detection in preterm infants.

Methods: This study employed a quality improvement design using the five-step Evidence-Based Practice (EBP) process: ask, gather, appraise, act, and evaluate.

Results: The NeoNEEDS instrument demonstrated high sensitivity (83.3 %) and specificity (81.3 %) in identifying NEC. Among all parameters, feeding tolerance showed the highest sensitivity (100 %) and a specificity of 70 %. A NeoNEEDS score of ≥3.5 indicated a high risk for NEC, warranting close clinical monitoring. The instrument showed a statistically significant association with NEC detection ($p < 0.001$).

Conclusion: These findings support the clinical use of NeoNEEDS to enhance early NEC identification and guide timely interventions.

PUBLISHED RESEARCH · JOURNAL OF NEONATAL NURSING (2025)

THE CLINICAL NEED

Preterm infants are at risk of necrotizing enterocolitis (NEC). Earlier recognition may support timely management.

THE PRACTICAL RESPONSE

NeoNEEDS was implemented as a structured tool for early NEC detection in preterm infants.

THE STUDY DESIGN

A quality improvement study applying a five-step Evidence-Based Practice (EBP) process.

THE FIVE-STEP EBP PROCESS REPORTED IN THE STUDY

ASK → GATHER → APPRAISE → ACT → EVALUATE

Nadi, H. I. K., Rustina, Y., & Huda, M. H. (2025). Journal of Neonatal Nursing, 31, 101725.

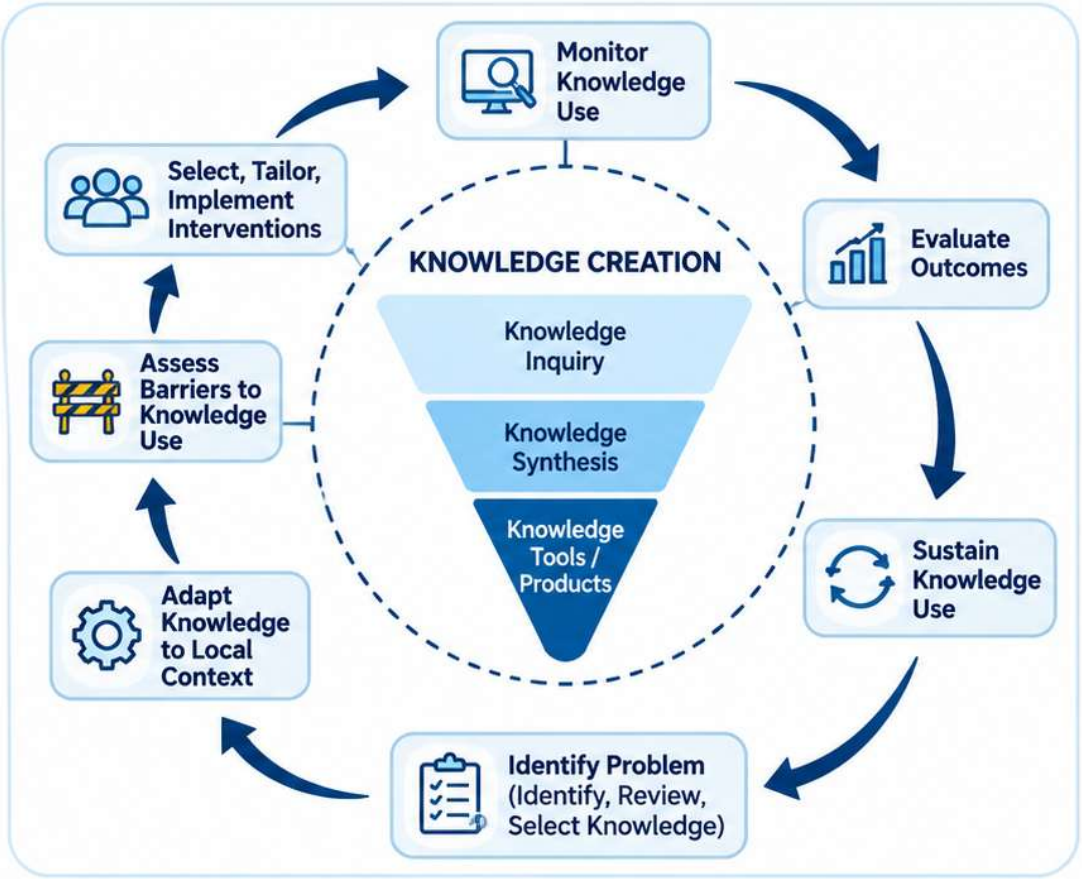
Established Frameworks for Translating Evidence into Practice



Framework	Primary Purpose
Knowledge-to-Action (KTA)	*Overall knowledge translation process.*
WHO GRADE-ADOLOPMENT	*Guideline adoption, adaptation, and development.*
AGREE II	*Clinical guideline quality appraisal.*
JBI Evidence Implementation	*Implementation, audit, and feedback.*
Iowa Model Revised	*Organizational evidence-based practice change.*
RNAO Leading Change Toolkit	*Leading and sustaining practice change.*

Knowledge-to-Action (KTA) Framework

A Framework for Moving Research Knowledge Into Practice



- Developed by Graham and colleagues (2006).
- Connects knowledge creation with practical implementation.
- Consists of two interconnected components: Knowledge Creation and Action Cycle.
- Recognizes that implementation is dynamic and iterative.

Two Interconnected Components

Knowledge Creation

The process of generating and synthesizing evidence into usable knowledge tools (e.g., guidelines, protocols, decision aids).

Action Cycle

A practical, iterative process to implement, evaluate, and sustain the use of knowledge in clinical practice.

Source: Graham et al. (2006). Lost in knowledge translation: Time for a map? *Journal of Continuing Education in the Health Professions*, 26(1), 13–24.

Evolution of the JBI Model of Evidence-Based Healthcare

From the original model to the updated model

Original JBI Model of Evidence-Based Healthcare

An earlier conceptual model describing evidence generation, synthesis, transfer, and utilisation.



Updated JBI Model of Evidence-Based Healthcare

A revised and comprehensive model for evidence implementation and knowledge translation.



Sources: Jordan et al. (2019); JBI Model of Evidence-Based Healthcare.

The Updated JBI Model of Evidence-Based Healthcare

A 7-Phase Process Model for Evidence Implementation



The Seven Phases at a Glance

Phase 1	**Identify the practice area/problem** Select a priority clinical problem with relevant stakeholders.
Phase 2	**Engage change agents** Involve and empower key people to lead the change.
Phase 3	**Assess context and readiness for change** Understand the local context, resources, and readiness.
Phase 4	**Review practice against evidence-based criteria** Conduct a baseline clinical audit to identify gaps.
Phase 5	**Implement change using GRiP** Use the Getting Research into Practice (GRiP) process to address barriers and apply targeted strategies.
Phase 6	**Re-assess practice** Repeat the audit to determine the impact of the change.
Phase 7	**Consider sustainability** Ensure the change is maintained and embedded in routine practice.

A pragmatic, evidence-based process to **plan, implement, evaluate, and sustain** changes in clinical practice.

Source: Porritt et al. (2023). JBI's approach to evidence implementation: a 7-phase process model. JBI Evidence Implementation, 21(1), 3–13.

Phase 1: Identify the Practice Area

JBI Evidence Implementation Framework

Step 1

Identify clinical practice gaps

- Review current nursing practices and areas requiring improvement.
- Identify variations between current practice and best available evidence.

→

Step 2

Use clinical and organizational data

- Hospital reports and clinical audits.
- Adverse events and critical incident reports.
- Morbidity, mortality, and clinical pathway variations.

→

Step 3

Prioritize clinical problems

- High-risk practices.
- High-cost or high-frequency care.
- Inconsistent clinical practices.
- Areas addressed by recent evidence-based guidelines.

→

Step 4

Engage key stakeholders

- Involve nurses, clinicians, managers, patients, and families.
- Ensure the selected problem aligns with clinical and organizational priorities.

Expected Output: A clearly defined, evidence-informed clinical practice problem agreed upon by key stakeholders.

Source: Porritt et al. (2023). JBI's approach to evidence implementation: a 7-phase process model. *JBI Evidence Implementation*, 21(1), 3–13.

Phase 2: Engage Change Agents

A change agent is an individual or group that initiates and manages change to enable the implementation of evidence into practice.[36]

Types of Change Agents



System Leadership

An influencer who leads across departments, organizations, or sectors to overcome barriers and drive change.



Technical Expertise

A person with strong subject matter knowledge and enthusiasm (may include experts with different backgrounds for broad topics).



Day-to-Day Leadership

A person with time, interest, and enthusiasm to lead the project, recruit others, and encourage relevant activities.

Facilitation of Change

- Guide, motivate, and set norms and standards.
- Maintain open communication.
- Invite and listen to the opinions, attitudes, and ideas of others.
- Continuously re-evaluate facts, beliefs, and positions.
- Encourage two-way feedback.
- Integrate the efforts of others.
- Promote and sustain efficient performance.
- Delegate power and authority.[39]

Key action: Establish an implementation project group and appoint a project lead to coordinate roles, access EBHC resources, and oversee the implementation.

Phase 3: Assess Context and Readiness to Change

Context analysis: a diagnostic process to understand local issues and factors that may influence the proposed change.[9,43]

Readiness to change: the organization's commitment to change and its ability to implement the change.[44,45]

SWOT Analysis

Strengths	Weaknesses
Opportunities	**Threats**

A quick and effective framework to explore each context factor.[46]

Eight Context Factors to Assess

1. Structure	To what extent does decision-making occur in a decentralized manner, and are there enough staff to support the change process?
2. Workplace culture	To what extent is the proposed change consistent with the values and beliefs of the practice environment, and to what degree does the culture support change and value evidence?
3. Communication	Are there adequate communication systems to support information exchange related to the change and implementation processes?
4. Leadership	To what extent do leaders within the practice environment support (visibly and behind the scenes) implementation?
5. Resource availability	Are necessary human, physical, and financial resources available to support implementation?
6. Knowledge, skills, and attitudes	Do staff members have the necessary knowledge and skills? Which potential groups are open to change and new ideas, and to what extent are they motivated to implement the change?
7. Commitment to quality management	Do quality processes and systems exist to measure the implementation results?
8. Interdisciplinary relationships	Are there positive relationships and trust between disciplines that will be involved or affected by the change?

Purpose: to understand the context and readiness, identify enablers and barriers, and tailor strategies for successful implementation.

Phase 4 | Review Practice Against Evidence-Based Audit Criteria

Use explicit, evidence-informed standards to assess how current care is delivered.

Baseline Audit Workflow

01 Review evidence
Search and critically appraise relevant research.

→

02 Define criteria
Specify measurable best-practice standards.

→

03 Conduct audit
Collect baseline data on current practice.

→

04 Identify gaps
Compare findings with established standards.

Evidence-based audit criteria should be aligned with rigorously appraised best-practice recommendations.

Three Purposes of Clinical Audit

Clinical effectiveness
Assess opportunities to improve care and patient outcomes.

Benchmarking
Compare current practice with established guidance.

Professional development
Support practitioners' self-assessment and learning.

Expected Output — Baseline compliance results and prioritized evidence-to-practice gaps.

Good practice: define audit objectives, criteria, methods, and responsibilities before collecting data.

Source: Porritt et al. (2023). JBI Evidence Implementation, 21(1), 3–13, pp. 8–9.

JBI EVIDENCE IMPLEMENTATION | PHASE 4

Establishing Evidence-Based Audit Criteria

Before reviewing nursing practice, verify the evidence used to define best-practice standards.

EVIDENCE-TO-AUDIT WORKFLOW

01



Find the best evidence

Identify current guidelines, systematic reviews, and relevant primary studies.

02



Critically appraise

Assess methodological quality and risk of bias using design-specific instruments.

03



Judge certainty and fit

Consider overall certainty, patient relevance, resources, feasibility, and safety.

04



Define audit criteria

Convert best-practice recommendations into explicit, measurable clinical standards.

NEXT: Baseline Clinical Audit

Compare current practice with each audit criterion to identify evidence–practice gaps.

Source: Porritt et al. (2023). JBI Evidence Implementation, 21(1), 3–13, pp. 8–9.

Phase 5: Implement Changes to Practice Using Getting Research into Practice (GRiP)

GRiP (Getting Research into Practice):
a structured method to compare audit results, identify barriers and enablers, and plan and implement strategies to reduce the evidence–practice gap.[50,54–57]

Three Stages of GRiP

1. Evaluate baseline audit findings
Compare current practice with best practice standards and share the results with stakeholders.

2. Identify barriers and enablers
Determine factors that hinder or support the use of evidence in practice.

3. Develop and implement strategies
Select targeted strategies to address barriers and build on enablers, then implement the change.

Key Activities

Provide feedback
Share audit findings (e.g., verbal, printed, electronic) with individuals or groups in a constructive, no-blame approach.

Explore barriers and enablers
Use methods such as interviews, surveys, focus groups, observation, and brainstorming with key personnel.

Plan and implement the change
Design targeted strategies based on identified barriers and enablers, with a clear and transparent description to support replication.

Common Domains of Barriers and Enablers

System
- Environment and culture
- Communication processes
- External requirements (e.g., reporting, standards, guidelines)

Staff
- Commitment and attitude
- Awareness and understanding
- Role identity
- Skills, ability, and confidence

Intervention
- Ease of integration
- Evidence-base
- Safety/ethical concerns
- Supportive components

Purpose: to identify and address modifiable barriers, leverage enablers, and implement appropriate strategies for sustainable practice change.

Phase 6: Re-Assess Practice

Evaluation is a key component of implementing evidence into practice to systematically collect information on activities, characteristics, and outcomes, to judge effectiveness, improve practice, and inform future decisions.[59]

Considerations for Timing the Re-Assessment

- Type of strategies implemented (simple vs. complex).
- Volume of staff involved.
- Experience level of staff.
- Workplace culture (hostile vs. accommodating).

Process of Re-Assessment

Collect follow-up data (re-audit) → **Use the same methods and metrics as the baseline audit** → **Compare baseline and follow-up results** → **Review and interpret the differences with the project team**

Purpose: to determine the impact of the implementation, assess improvement, and inform sustainment or future actions.

Phase 7: Plan for Sustainability

Sustainability is the ability to maintain and sustain evidence-based practice beyond the duration of the implementation project.

Key Points

- **Ensure ongoing achievement** within the change period.
- **Embed the change** in organizational norms and culture.
- Continue to **evaluate and improve** the practice.
- Plan a **repeat audit** at an appropriate time.

Components for Sustainability

Build capacity
Develop skills and ongoing support for staff.

Embed into routine practice
Integrate into policies, procedures, and standard care.

Monitor and review
Use audit and feedback to ensure long-term adherence.

Guide for Determining Timing of a Subsequent Audit

Compliance with standards < 50%	Compliance with standards 51 – 75%	Compliance with standards 76 – 100%
Audit every 3 months	Audit every 6 months	Audit every 12 months

IMPLEMENTATION PROJECT

Promotion of Early Breast Milk Expression among Mothers of Preterm Infants in the Neonatal ICU in an Obstetrics and Gynaecology Hospital: A Best Practice Implementation Project

Xiaoyan Huang, PhD[1,2], Junping Zhang, BA[3,2], Feifei Zhou, BSc[3,2], Yun Yang, Diploma[3,2], Lucylynn Lizarondo, PhD[4], and Alexa McArthur, MPH, MCInfSc[4]

[1]School of Nursing, Fudan University; [2]Fudan University Centre for Evidence-based Nursing: A JBI Centre of Excellence; [3]Obstetrics and Gynaecology Hospital of Fudan University, Shanghai, China; and [4]The JBI, Faculty of Health Sciences, University of Adelaide, Adelaide, South Australia, Australia

ABSTRACT

Introduction: The supply of breast milk to preterm infants is low. It is important to adopt strategies to promote early and frequent breast milk expression in this population.

Case Illustration: Early Breast Milk Expression in the NICU

A best practice implementation project in an obstetrics and gynaecology hospital

Clinical Issue



- Mothers of preterm infants may delay breast milk expression.
- Delayed expression can reduce milk supply and affect feeding outcomes.

Aim



- Promote early breast milk expression.
- Encourage initiation within the first 6 hours after birth.

Setting and Participants



- Neonatal ICU
- Obstetrics and gynaecology hospital
- Mothers of preterm infants
- NICU nurses and clinical staff

JBI Implementation Approach



- Baseline audit
- Identify barriers and enablers
- Staff education and support
- Implement practice changes
- Follow-up audit

Expected Practice Outcomes



- Earlier initiation of milk expression
- Better adherence to best practice
- Improved breastfeeding support in the NICU

Key Message Structured implementation helps translate breastfeeding evidence into routine neonatal care.

Case Illustration

Promotion of Early Breast Milk Expression among Mothers of Preterm Infants in the NICU

A Best Practice Implementation Project at an Obstetrics and Gynaecology Hospital

Project Focus

Clinical issue

Low rate of early breast milk expression (EBME) among mothers of preterm infants in the NICU.

Best practice

Initiate breast milk expression as early as possible (e.g., within 6 hours after birth) to optimize maternal milk supply and improve outcomes for preterm infants.

Aim

To improve compliance with evidence-based recommendations for early breast milk expression among mothers of preterm infants.

Methods

The JBI Practical Application of Clinical Evidence System (PACES) and Getting Research into Practice (GRiP) audit and feedback tool were used in this best practice implementation project.

Three phases were involved:

1 Establish & Baseline Audit

- A project team was established.
- A baseline audit was undertaken using JBI PACES to determine the current compliance to evidence-based practice recommendations.

2 Identify Barriers & Implement Strategies (using GRiP)

- Barriers to compliance were identified.
- Strategies to address these barriers were designed and implemented using the JBI GRiP framework.

3 Follow-up Audit

- A follow-up audit was conducted to evaluate changes in compliance to evidence-based practice recommendations following implementation.
- Issues to be addressed in subsequent audits were identified.

Audit Criteria and Compliance Measurement

Case illustration | Early breast milk expression among mothers of preterm infants

	AUDIT CRITERION	SAMPLE	COMPLIANCE MEASUREMENT
01	Antenatal protocol on breast milk benefits and principles of milk expression is available.	1 protocol	Hospital document review
02	Healthcare professionals receive breastfeeding education, including early, frequent and effective milk expression.	146 staff 90 nurses · 42 midwives 14 doctors	Staff questionnaire: education received, when and how
03	Mothers receive antenatal breastfeeding education, reinforced when preterm delivery is likely.	30 mothers	Maternal questionnaire: education received, when and how
04	Mothers receive detailed instructions on early, frequent and effective expression immediately postpartum.	30 mothers	Maternal questionnaire: education and instructions
05	Mothers have access to an appropriate breast pump and support in using it.	30 mothers	Maternal questionnaire: pump access and support
06	Mothers initiate milk expression within 6 hours after delivery.	30 mothers	Interview and milk-expression diary
07	Mothers express milk 8–12 times/day during the first 48 hours after delivery.	30 mothers	Interview and milk-expression diary

Seven evidence-based criteria were assessed using a document review, questionnaires, interviews and milk-expression diaries.

Source: Huang et al. (2020), JBI Evidence Implementation, 18(3), 278–287, Table 1. Criteria abbreviated for slide readability.

Baseline Audit: Early Breast Milk Expression

Compliance with seven JBI evidence-based audit criteria

	Audit Criterion	Compliance (%)
01	Antenatal milk-expression protocol available	100%
02	Healthcare professionals educated about milk expression	71%
03	Antenatal breastfeeding education for mothers	0%
04	Postpartum guidance on early and frequent expression	87%
05	Breast-pump access and practical support	60%
06	Milk expression initiated within 6 hours of birth	23%
07	Milk expression 8–12 times/day during first 48 hours	0%

Key Finding

Lowest compliance: antenatal maternal education (0%), early initiation (23%), and 8–12 expressions/day (0%).

Samples: 1 protocol (criterion 1); 146 healthcare professionals (criterion 2); 30 mothers (criteria 3–7).

Source: Huang et al. (2020). JBI Evidence Implementation, 18(3), 278–287; Figure 1. Baseline audit. Criteria name abbreviated.

Strategies for Getting Research into Practice (GRiP)

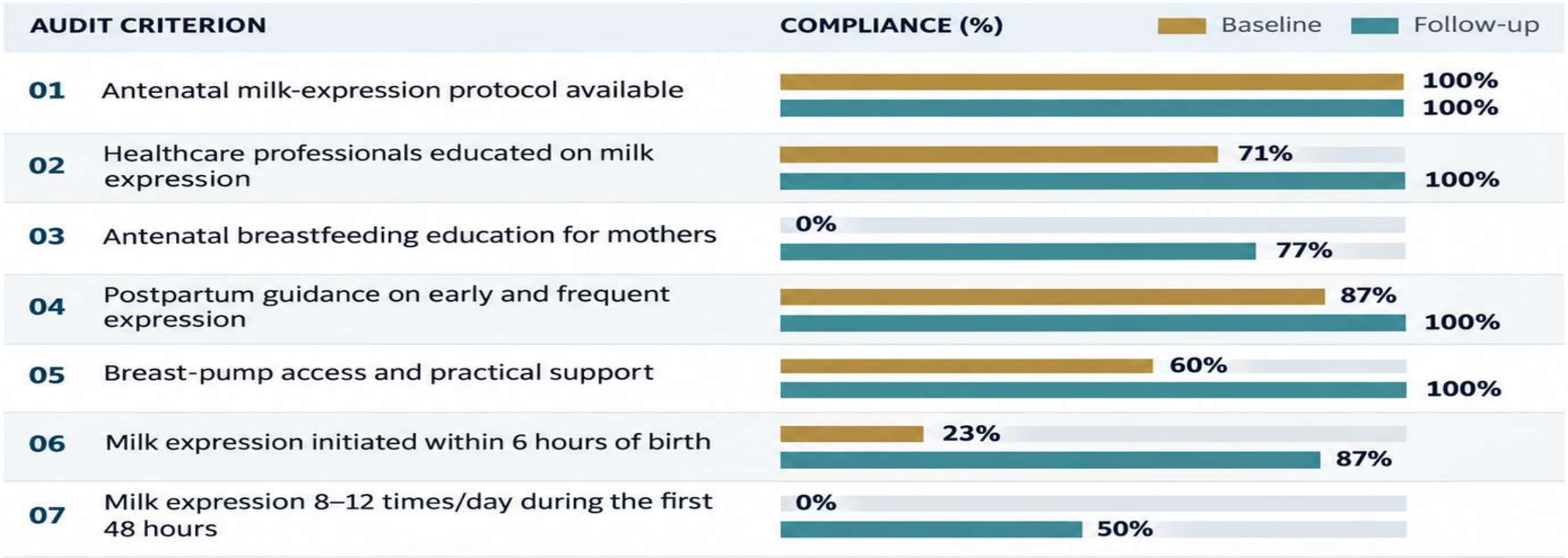
Case study | Early breast milk expression among mothers of preterm infants in the NICU

Barrier	Targeted implementation strategies	Resources	Observed outcomes
Limited staff knowledge	• Three face-to-face training sessions • Individual training for absent staff; training materials shared	Training slides	All relevant healthcare professionals were trained
Limited maternal knowledge	• Education brochures and antenatal classes • One-to-one counselling before and after delivery • WeChat information and reminders	Maternal education brochure; WeChat	All mothers received postpartum education; most also received antenatal education
Limited breast-pump access	• Bilateral electric breast pump provided in each ward • Mothers encouraged to bring their own pump, if available	Bilateral electric breast pump	All mothers had access to breast pumps
Insufficient support and encouragement	• Daily expression diary and printed template • Father education and NICU updates through WeChat • Nurse-led encouragement, assistance, and milk transfer	Diary template; syringes; WeChat	All mothers kept a diary; most fathers were educated; earlier and more frequent expression reported

Source: Huang et al. (2020). JBI Evidence Implementation, 18(3), 278–287, Table 2. Strategies summarized for presentation.

Follow-up Audit: Early Breast Milk Expression

Compliance with seven JBI evidence-based criteria — baseline vs follow-up



Key finding: Milk expression within 6 hours increased from 23% to 87% (+64 percentage points).

Samples: 1 protocol (criterion 1); 146 healthcare professionals (criterion 2); 30 mothers (criteria 3–7).

Source: Huang et al. (2020), JBI Evidence Implementation, 18(3), 278–287; Figure 2. Criterion labels abbreviated.

THANK YOU.

Questions & Discussion

From evidence into everyday nursing practice.

Thank you for your attention.