Evidence-Based Practice

So You Want to Change Practice: Recognizing Practice Issues and Channeling Those Ideas

Paula Lusardi, RN, PhD

Applying the best evidence to support nursing practice and generating new knowledge for use in practice are the hallmarks of excellence and allow practitioners to meet patient care quality and safety priorities. Although identifying a patient care problem comes easily to staff nurses, the process of clarifying the problem and channeling those ideas through to a practice change can be daunting for bedside nurses. This article provides guidance to staff nurses who want to identify a clinical problem and change practice. (Critical Care Nurse. 2012;32[2]:55-64)

Does a clinical issue ever drive you crazy because you know that practice needs to be changed? Do you have great ideas about changing practice at the bedside but do not know how or where to begin? Identifying a patient care problem comes easily to bedside nurses, but clarifying the problem and then channeling those ideas to a practice change can be an intimidating process for point-of-care clinicians.

Practice changes that increase the quality of care and safety for patients are priorities for health care professionals today. Using the results of nursing research to guide nursing care allows practitioners to provide safe, high-quality care. Yet studies continue to suggest that nurses at the bedside lack the resources and knowledge necessary to change the traditional nursing culture to a culture of inquiry with the daily application of the best evidence.

So how do bedside clinicians change practice? Today, practice changes can occur by increasing the involvement of bedside clinicians and providing knowledge and skills to implement best practices. In our unit, we have had success in engaging staff in recognizing clinically significant questions related to patient care through strong mentoring and support and in channeling those ideas to change practice to meet patient care goals and national priorities. This article presents a pragmatic, clinically friendly approach that staff nurses can use to apply research to change nursing practice.

Changing Practice and the Bedside Nurse: The Evidence-Based Practice Perspective

Florence Nightingale, an early user of evidence-based data, asked important clinical questions and changed practices that had contributed to high mortality rates. During the Crimean War, she collected data on infection rates, changed practices, and substantially decreased mortality rates. In the twenty-first century, as nursing research has developed, evidence-based practice (EBP) has evolved as a way to translate nursing research into practice.

EBP is the integration of the best evidence with clinical expertise and patients’ values to facilitate clinical decision making. Philosophically
and practically, staff recognize that the best nursing questions are those that arise from and are analyzed by the direct care clinicians with implementation of focused practice changes. Through teamwork and mentoring, this process has worked for us. We call this system, “From the Bedside to the Bedside” (see Figure). The central idea is that nurses identify practice issues and, through a variety of well-documented steps, are able to change and improve practice at the bedside. Through our mentoring processes, nurses are charged and empowered to change their practice.

Getting Started: Mechanisms and Resources That Need to Be in Place

Authors17-19 have described essential components that need to be in place for the implementation of EBP: support from hospital administrators, available resources, strong unit-based clinical leadership, mentoring, and feedback.

Support From Hospital Administrators

Hospital administrators must believe philosophically that the best evidence drives patient care. The Vice President of Patient Care Services in our Magnet institution believes that bedside care must be grounded in the best evidence and is willing to provide the funds to sustain EBP processes. For instance, funds are provided to support our staff nurse evidence-based mentor program, where 2 staff nurses are mentored on an EBP project for 9 to 12 months.

Provision of Resources

Resources are essential at the unit and organizational levels. Access to bedside computers and library services for literature reviews and time away from the bedside for individual staff nurses to work on EBP projects in the unit are key assets for staff. EBP experts such as clinical nurse specialists (CNSs) and educators must be available to guide nurses in EBP processes such as synthesizing the literature and understanding the process of dissemination of data. Our unit manager financially supports time away from the bedside for staff nurses to be involved in our EBP projects. For instance, when staff nurses participate in EBP meetings, project development, or data collection, they are paid with unit funds.

Strong Unit-Based Clinical Leadership

Strong clinical leaders, especially unit-based educators, clinical nurse specialists, managers, and senior staff, are those who serve as role models in the use of evidence in day-to-day practice. Our master’s prepared clinical educator, our doctorally prepared CNS, and seasoned staff nurses support a culture of inquiry, collegiality, and EBP.

Mentoring and Feedback

Mentoring staff at the unit level is central to an active EBP initiative that supports bedside nurses.20,21 Clinical experts must be available to guide and mentor staff from the identification of a practice issue to the channeling of those ideas that will ultimately improve patients’ outcomes. In addition, feedback about the progress of an EBP project is essential to sustain momentum for a plan that often takes more than a year to complete. Our CNS works closely with several teams of nurses to sustain momentum of our EBP.
projects related to constipation, delirium, pain, and collaboration between nurses and physicians.

Evidence-Based Practice Models: Common Elements

Models for identifying practice issues and channeling those ideas are well documented. 

- **Johns Hopkins Model (2005):** This change model assists clinicians in translating evidence into practice. It consists of many steps taking the practitioner from identification of an EBP question to recruiting and assembling a team; from gathering, appraising, summarizing, and rating the strength of the evidence to developing recommendations for practice; from implementing and evaluating change to communicating the findings.

- **Rossworm and Larrabee Model (1999):** This change model guides practitioners through the full process of EBP. It includes 6 steps: assessing the need for change, identifying potential interventions and outcomes, synthesizing the best evidence, designing a practice change, implementing and evaluating the practice change, integrating and maintaining the practice change.

- **Stetler Model (2001):** This focused model describes a series of steps to assess and use research to ensure appropriate application of the evidence in practice. The model includes 5 phases: preparation of the research evidence, validation of the findings, synthesis of cumulative findings and decision to use/not use findings, translation and application, and evaluation as part of routine practice.

- **Iowa Model (Titler, 2001):** This organizational model includes the conduct and use of various types of evidence. It includes the following elements: evaluation of knowledge and problem-focused triggers, gathering and critique of the evidence, determining if change is appropriate for adoption in practice, and evaluation and analysis of structure, process, and outcome.

**Common elements among selected models**

1. Identification of a clinical problem
2. Gathering of the best evidence
3. Critical appraisal and evaluation of gathered evidence
4. Determination of a potential change in practice
5. Planning and implementation of a practice change
6. Evaluation of practice change outcomes over time

- **Applying the EBP Process**

Although common elements of the EBP models are described with a focus on use by individual practitioners, we modified the common elements into 2 distinct phases. Phase I identifies the clinical issue, and phase II is focused on channeling the ideas to change practice. As Gawlinski suggests, when practitioners are involved in decision-making processes, they become engaged, empowered, and have a sense of control over changing their practice.

Our staff become excited about projects as they begin to change practice before their very eyes. Staff who identify the problem are often committed to solving the issue and are determined to change practice.

In our unit, nurses reflect on key elements that clearly identify a practice issue. With a firm handle on the problem at hand and mentoring, they feel more comfortable channeling those ideas in the classic research utilization process that culminates in a practice change.

Phase I: Recognizing/Identifying a Practice Issue That Can Be Improved

EBP experts emphasize that recognizing the clinical problem is paramount to a successful project. However, little guidance is available to assist staff nurses in critically analyzing the specifics of an issue at hand or in recognizing unit processes that are helpful to clarify potential clinical issues. We developed 4 questions to help our practitioners focus on a problem and reflect upon the clinical significance of the issue (Table 2).

1. **What Is the Nature of the Clinical Problem?**

Practice issues arise from a variety of sources and for many reasons.
Titzer describes problem- and knowledge-focused triggers as catalysts for nurses to think critically about practice issues and to seek scientific evidence for changing practice. Problem-focused triggers include risk management data, quality assessment and improvement data, total quality management and continuous quality improvement data, and importantly, nurse-generated identification of clinical problems at the bedside. For instance, the nurse at the bedside may discover process improvement data that indicate that the incidence of skin breakdown is increasing with undesirable outcomes. Knowledge-focused triggers are generated by national standards and guidelines, questions from institutional standards committees, and new research.

Problem identification emerges from multiple sources. However, meaningful questions are driven by the practitioner’s curiosity and a need to find answers to these questions and to improve practice, rather than from organizational mandates. Furthermore, selection of a clinical problem has a better chance of a successful practice change if the users themselves perceive it to be an issue.

In our unit, nurses focus on issues grounded in patient/family concerns, understandable and meaningful bedside data, matters that they see at the bedside and want to solve to improve patients’ outcomes.

Our staff nurses have been involved in many EBP projects. One completed project was focused on constipation, and an ongoing project is focused on delirium. Both of these projects arose from questions at the bedside, staff’s concern about patients’ symptoms, and the perceived need for a practice change. I will use these examples to illustrate our EBP processes. In each instance, project initiation focused on the following phase I questions: Is the problem real? Is the issue clinically significant and a priority for the unit? What is the central concept of interest and how is it defined?

2. Is the Problem “Real”?

Staff nurses must validate that the problem is “real,” that is, a recurring problem for patients that occurs with sufficient frequency to merit attention. In our unit, this process includes discussion of the issue in shift-to-shift report, with the educator/CNS, within multidisciplinary rounds, and in our unit-based Clinical Practice Committee (CPC). For instance, 2 nurses identified an issue that they thought was “real”—patients’ constipation. Although many of their unit colleagues considered that the issue might be real, most nurses had not focused on constipation. Rather, they focused on diarrhea and its effects on skin integrity. Through discussion at shift-to-shift report, nurses began to focus on the possibility of constipation as an issue. Through discussion with the CNS, these nurses collected flow sheet data on the incidence of constipation and, in truth, they found the incidence was 8%; about 2 out of every 24 patients were constipated at any one time (and uncomfortable if they were alert enough to indicate discomfort). The issue was real. That is, the issue was affecting a number of patients and no established protocol was in place to identify or treat constipation in the unit.

The delirium project arose from staff nurses’ observations as well. Four staff nurses thought that delirium might be a frequent happening. They observed patients during “sedation holidays,” discussed the potential issue during shift-to-shift report, and hypothesized that indeed our sedated patients might have a higher incidence of delirium. Was the problem real? We did not know, because we did not formally assess delirium in our unit, but we acknowledged that many of our patients were confused. The CNS identified evidence that suggested that delirium is experienced by 60% to 80% of patients receiving mechanical ventilation and remains unrecognized in 66% to 84% of patients regardless of care setting. Published reports implied that while many clinicians consider ICU delirium an expected, transient event that is iatrogenic and of little

<table>
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<th>Table 2</th>
<th>Phase I: process of identifying practice issues</th>
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| What is the clinical problem? | 1. What is the nature of the clinical problem?  
2. Is the problem “real”?  
3. Is the issue a clinically significant question and a priority for the unit?  
4. What is the central concept and how is it defined? |
| What processes help to identify and focus this clinical problem? | Shift-to-shift report  
Clinical nurse specialist/educator partnership  
Unit-based clinical practice committee discussion |
consequence, in truth delirium in the intensive care unit is neither benign nor self-limiting.

We acknowledged that the problem was potentially real in our level I trauma ICU, but we needed to validate our thoughts before we implemented our project. Consequently and as part of our planned change, our staff team measured the incidence of delirium in the unit using the Confusion Assessment Method–ICU tool. Data are currently being input for later statistical analysis.

3. Is the Issue Clinically Significant? Is the Issue a Priority?

What makes an issue clinically significant and a priority for patient care? In our unit, an issue is clinically significant if the issue affects patient care and is high risk as determined by bedside clinicians, the unit educator, and the CNS. For instance, an issue is a priority when practice does not meet the standard of care as determined by the literature and practice changes are required. Discussion at the bedside revolves around practice issues that may need a practice change, and these issues are prioritized for action. For instance, constipation was a real problem in our unit, but was it clinically significant? ICU patients have pain or discomfort that we treat with opioids. Use of opioids exacerbates constipation. In searching the critical care literature, we found no practice guidelines for the assessment and treatment of constipation, but we did discover constipation guidelines in the oncology literature. For ICU patients and nurses, this issue was clinically significant and a priority for our patients.

In the delirium project, the CNS shared current evidence from delirium experts with interested staff nurses. The evidence suggested that ICU delirium is associated with increased length of stay, medical complications, and poor outcomes such as increased mortality and posttraumatic stress disorder, as well as significantly higher ICU and hospital costs. Guidelines also exist to support monitoring sedation and delirium. Our nurses realized that the issue of delirium was clinically significant, a priority, and needed to be assessed and managed to improve patients’ outcomes.

4. Concept Exploration: What Are We Really Talking About and How Is It Defined?

Staff nurses need to focus on the central concept of interest and understand how it is defined. For instance, we needed to define constipation to be sure that we were all discussing the same issue. The literature defined constipation as no bowel movement for 3 days. We knew that the issue was real, clinically significant, and a priority, and we had a working definition of constipation.

Likewise, the CNS searched the literature for definitions of delirium. We discovered that ICU delirium, an acute disturbance of consciousness and cognition that fluctuates in severity, is common in patients receiving mechanical ventilation. Several valid and reliable instruments exist to measure delirium as well. We knew that the issue was real, clinically significant, and a priority, and we had a working definition of delirium. We knew we were on the right track.

Recognizing Practice Issues: Processes for Identification

Bedside Discussion: Shift-to-Shift Report and Story Telling

Bedside nurses are astute observers of patients’ responses to illness and patients’ experiences. Astute staff nurses ask pointed practice questions and reflect on the effectiveness of their interventions. Staff nurses discuss these observations and reflections at report and through the stories they tell to their colleagues. Often, stories identify and detail bedside problems. These stories are relayed from nurse to nurse with rich description and often with frustration aimed at the need to change practice. In both instances just described, nurses identified the issue from bedside practice and discussed the problem with colleagues for a period of time. These discussions were focused on early identification of problems. For instance, we were trying to wean a patient from mechanical ventilation without success. The patient was clearly uncomfortable and was given pain medication. The bedside nurse discovered that the patient had not had a bowel movement for a week (uncharted). She gave the patient an enema. She gave the patient an enema. The patient was more comfortable, her pain medication was reduced, and she was weaned off of mechanical ventilation within 24 hours.

Multidisciplinary Rounds

The CNS conducts 1-hour weekly multidisciplinary rounds where the bedside nurse discusses the current patients’ issues. Many disciplines participate, for instance, spiritual services, social work, dietary, and physical therapy. These rounds
provide another forum for discussion of patient and family issues that need to be resolved. The nurse at the bedside is central in identifying issues and driving practice changes.

**Unit Educator/Clinical Nurse Specialist Partnership**

Mentoring staff and discussing issues is central to a successful model of EBP change. Availability of clinical experts is essential to discuss potential issues and expose staff to the most current evidence related to a problem. Questions from bedside clinicians often “bubble up” and should be conveyed to trusted resource persons. Likewise, resource persons must be willing to do some “ground work” in order to channel ideas for practice solutions. Unit-based EBP experts understand how to uncover and use the best evidence to guide practice, and they are excellent resources for assisting staff in answering the questions. Nurse managers and senior staff nurses may be additional resources for staff. In our unit, the CNS has been intimately involved in both the constipation and delirium projects as both mentor and support for the staff nurses involved in these projects.

**Unit Clinical Practice Committee Discussion: Unit-Based Issues**

Our unit-based CPC provides a broader forum than bedside discussion in addressing practice issues. In our institution, this committee provides an opportunity for discussion of burning practice issues that may have been identified by staff nurses. This committee, guided by staff nurses, meets monthly and practice issues are solicited from the staff for discussion. Issues expressed at the bedside often find their way to the agenda of this committee for information sharing and resolution. During the committee meeting, staff nurse members present current evidence-based literature, standards, and AACN practice alerts that give shape to the identification and recognition of unit practice issues. Committee discussion is an adjunct to bedside discussion and adds another level of credibility, reinforcing the need to analyze a practice issue and to alter practice. The constipation initiative and the delirium project, although identified through case discussion at the bedside, are discussed monthly at the CPC meeting. Sometimes, CPC members recognize that an issue has broader implications than 1 unit. These issues are then shuttled to the hospital-wide CPC for wider dissemination and rich discussion.

In conclusion, phase I (identification of a clinical problem) is complete when the bedside nurse has identified the issue as clinically significant and a priority practice issue, the nature of the clinical problem has been determined, and the central concept has been defined. At this stage, we usually have several interested staff nurses participating in this process, and with the CNS’s help we are ready to move to the process of channeling those ideas to a practice change.

**Phase II: Channeling Those Ideas**

Channeling ideas to create a practice change is a complex but satisfying process for staff, particularly if the issue emerged from bedside clinical practice. Once the staff nurse has identified the problem, it is time to move on to channeling those ideas. To begin, the staff nurse who identified the issue may find it easier to drive this process by convening an interested group of colleagues with an EBP resource person. In this context, ideas are often insightful and creative. Colleagues lend support to each other as new EBP skills are learned and the process of channeling ideas progresses to a practice change. From this base, elements of the traditional research utilization processes emerge, which include review of a chosen EBP model to evaluation of practice change outcomes over time (Table 3).

**Table 3  **Phase II: process of channeling those ideas

- Convene an interested group for discussion
- Partner with an evidence-based practice expert and mentor
- Choose an evidence-based practice model to guide channeling processes
- Gather the best evidence
- Critically appraise and evaluate this service
- Determine a potential change in practice
- Plan and implement a practice change
- Evaluate practice change outcomes over time

**Selection of an EBP Model to Guide a Practice Change**

EBP models are guides to channel ideas to improve patients’ outcomes. If the institution has not chosen a particular model to guide EBP, then the group should review existing models and select...
the model that best fits the needs of the unit or organization.22

Critical Appraisal and Evaluation of This Evidence

Several frameworks exist that assist staff nurses in appraising and evaluating evidence.15 These frameworks recommend approaches to assess, critique, and evaluate evidence, culminating in decisions about practice changes. Many authors provide examples that help organize the reviews in formats that determine the degree of acceptability and strength of findings. One structured framework described by Stetler14 provides a particularly comprehensive, thoughtful, and organized approach to literature review and evaluation. However, staff should review several models to see which approach makes the most clinical sense. We use the Iowa Model (chosen by our Nursing Research Council) because it makes conceptual and practical sense to our staff.13

What happens if there is not enough evidence to guide a change in practice? If evidence does not exist to guide practice, a gap in nursing knowledge exists. Knowledge will need to be generated through an independent research project. Nurses may want to conduct their own research or consult with experts in the area of inquiry.

For instance, the nurses interested in constipation pulled together a multidisciplinary group to look at the problem. In reviewing the literature, staff found only 2 studies addressing constipation in the ICU population. We turned to national standards and local guidelines within hospice, a group concerned with constipation due to opioid use. In contrast, the literature review for the delirium project was extensive. The CNS did most of the literature retrieval, and each group member read the evidence, evaluated the literature for an eventual practice change, and appraised valid and reliable tools focused on assessing sedation levels and delirium.

The CNS mentored these groups of nurses through the necessary steps to analyze, synthesize, and evaluate the literature, understand the components of assessing the validity and reliability aspects of clinically useful delirium instruments and outcomes.

Determination of a Potential Change in Practice

Once the evidence is compiled in a format that allows easy comparison among articles, recommendation for a change in practice usually becomes evident. We developed a “literature review” sheet that included a variety of information about each article with conclusions and implications emerging from the review14 (Table 4). Staff could easily see the next steps for a practice change. For instance, the elements for a constipation protocol began to emerge from the evidence reviewed. Additionally, the elements for delirium assessment, prevention, and treatment emerged from the literature and became clear.

At this point, communication to unit colleagues and other persons in the institution who have a stake in the process should be considered. Clinicians should consider the fit, feasibility, and readiness of involved parties for change.14 Clinicians must think about how a recommendation will “fit” with the unit and the organization. Staff should also consider the feasibility of the project, in other words, what is the risk versus benefit of changing practice; what are the costs? Finally, clinicians should reflect on the readiness of the other staff and leaders for change. Chances are much better for acceptance of change if involved parties perceive that a problem exists and that change is needed. For instance, both the constipation and delirium groups presented ideas about practice changes in the ICU CPC and eventually to the hospital-wide CPC committee and other hospitals in the system. Evidence existed at unit

<table>
<thead>
<tr>
<th>Title</th>
<th>Year</th>
<th>Author(s)</th>
<th>Study questions</th>
<th>Sample</th>
<th>Design</th>
<th>Findings</th>
<th>Conclusions/Implications/Fit with practice</th>
<th>Level of evidence/feasibility</th>
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Table 4: Example of a literature review table

A. Statement of purpose:
B. Central concept definition:
and organizational levels for potential practice changes.

Planning and Implementation of a Practice Change

At this point, staff should have a clear understanding of the issue, a focused question, and recommendations for change. Our experience suggests that further refinement of the research question may be necessary to drive the practice changes. A research question typically has 4 components: the population of interest, intervention of interest, comparison of interest, and outcome of interest. These components lend themselves to the acronym PICO.15 Although we understood our population of interest, we wanted to be sure that we clarified the intervention, comparison groups, and desired outcomes. This format encourages staff to tightly formulate the research questions for a particular practice change (Table 5).

Example: Using the PICO format with the constipation initiative, the research question might look like this: In the ICU population (P), what is the effect of the use of a constipation protocol (I) on the incidence of constipation (O) compared with current practice (C)?

Table 5 Application of PICO elements

<table>
<thead>
<tr>
<th>PICO elements</th>
<th>Applications</th>
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<tbody>
<tr>
<td>Constipation</td>
<td>Patients in ICU</td>
</tr>
<tr>
<td>Intervention</td>
<td>Constipation protocol</td>
</tr>
<tr>
<td>Comparison</td>
<td>Current practice</td>
</tr>
<tr>
<td>Outcome</td>
<td>Incidence of constipation</td>
</tr>
<tr>
<td>Delirium</td>
<td>Intubated patients in ICU</td>
</tr>
<tr>
<td>Intervention</td>
<td>Use of CAM-ICU (formal assessment)</td>
</tr>
<tr>
<td>Comparison</td>
<td>Informal delirium assessment</td>
</tr>
<tr>
<td>Outcome</td>
<td>Incidence of delirium</td>
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Abbreviations: CAM-ICU, Confusion Assessment Method for the Intensive Care Unit; ICU, intensive care unit.

In both the constipation and delirium projects, staff understood the processes to be undertaken and worked as cohesive groups over time. Staff would be in contact with the CNS with questions and each other for support as we moved through our predetermined timeline. The CNS should have a reasonable idea about these processes, help to keep the group on track, and act as a “cheerleader” in this intricate process of practice implementation and change.

Evaluation of Practice Change Outcomes Over Time

The final phase of implementing change is evaluation of the outcomes. Predetermined outcomes from the PICO question can be assessed to determine the effectiveness of change. Data collected before the change should be compared with data collected after implementation of the practice change. In the constipation project, staff had collected preintervention and postintervention data on the incidence of constipation.

Informal nursing assessment (C) in diagnosing delirium (O)? Use of a focused question gives staff a handle on the population of interest, the defined intervention and expected outcomes in comparison groups. Although much literature encourages use of the PICO format in developing the research question, we found that using this formulation late in the process is helpful in driving the planning and implementation of the project.

Implementation of a practice change has its foundations in change theory processes.29-50 Barriers to change, such as level of education, time available for change, lack of support, and fear of change need to be evaluated.14,51 The staff group needs to meet on a regular basis to develop a timeline that includes educational and implementation processes. Many staff nurses think that the implementation will occur quickly and without difficulty. These projects typically take longer than expected. Staff members need to support each other through the implementation and emphasize achievements as well as work yet to be accomplished.

To learn more about evidence-based practice, read “Inside Looking In” or “Inside Looking Out”? How Leaders Shape Cultures Equipped for Evidence-Based Practice by Halm in the American Journal of Critical Care, 2010;19:375-378. Available at www.ajcconline.org.
from 8% to 4%. In the delirium project, we have collected preintervention data on the incidence of delirium but have not yet implemented our delirium guidelines.

Rogers describes a process of diffusion of innovations, or practice change. He suggests that 4 elements must be considered in any practice change: the innovation itself, communication channels, time lines, and effects of the social system. He further suggests insights on changing practice and how to accomplish the change process. 20,51,55,56

Summary and Conclusion
Applying the best evidence to support nursing practice and generating new knowledge for use in practice are the hallmarks of excellence and allow practitioners to meet priorities for the quality and safety of patient care. Identifying a patient care problem comes easily to staff nurses, but the process of recognizing and clarifying the problem and then channeling those ideas through to a practice change can be intimidating for staff nurses. A clinically friendly approach to the research utilization process helps in the implementation of practice changes.

References
41. Jacob J, Fraser GL, Cousin DB, et al. Clinical practice guidelines for the sustained use of...


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