

## **Bridging the gap between research and clinical practice.**

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The primary concern in health-related and nursing professions - is the delivery of services for the purpose of managing presenting problems - preventing untoward conditions - and promoting proper functioning and well-being (1). To be successful in achieving these goals, professional health services should be of high quality.

Broadly high quality care can be defined as - care that results in the best outcomes for patients, high quality health care services is characterized by:

- **Accessibility:** that means services that are readily available and can be used by patients when needed.
- **Acceptability** – services that are agreeable to potential patients.
- **Efficient** – means that services are worth their cost, they are capable of producing the expected results within the specified time frame and limits of available resources.
- **Effective** services are those that achieve the intended benefits for the patients.
- **Appropriate** services are those that meet the actual needs of the clients or resolve their presenting problems.(1)

Clinical nursing practice is filled with uncertainty, which nursing intervention is the most effective to produce the best patient outcome? How are patients experiencing their illness? What will happen if a condition is left untreated? And so on...

However, practice based on evidence can decrease the uncertainty, which patients and clinicians experience in a complex health care system. Patients want to receive quality clinical care, and practitioners desire to provide that care.

Fortunately, Evidence-based practice is an approach that enables clinicians to provide the highest quality of care in meeting the multifaceted needs of their patients and families.

When, nurses know how to find, critically appraise, and use the best evidence available, and patients are confident that their nurses are using the evidence-based care, optimal outcomes are achieved for all.

The fundament for clinical practice is the decisions that are made of the clinicians every day. The decisions making process in nursing involves weighting the potential benefits and harms of interventions whilst bearing in mind the impact of limited resources and populations with varying health care needs.

Focusing on evidence based practice has lead to the realisation that the task of accessing and interpreting "raw" research evidence in everyday practice is impossible,

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for most practitioners an easy access to research is needed. Research findings must be presented and translated, before they can be implemented in the daily clinical decisions.

Some of main reasons for not using research findings are listed here:

1. The volume of journal and article available are enormous – it is not possible to keep up with and read all relevant literature
2. Practical difficulties of accessing libraries and accessing the articles and journal
3. Practitioners must acquire skills to determine the quality and validity of research
4. High quality studies are published in English – therefore the nurses must be able to read scientific literature in English
5. Nurses must have the needed qualification to synthesise evidence into explicit recommendation for clinical practice
6. Practitioners need the time to do all this.

## **How can clinical guidelines be of help?**

Clinical guidelines are defines as “Systematically developed statements to assist practitioner and patients decisions about appropriate health care for specific clinical circumstances” (2,3).

Clinical guidelines are designed to help practitioners assimilate, evaluate and implement the ever-increasing amount of evidence and opinions on best current practice.

Clinical guidelines are intended as neither a cookbook nor a textbook but - as a tool to assist nurses in making decisions about appropriate and effective care together with their patients(4).

A number of systematic reviews have documented that implementing clinical guidelines in medical practice might result in improvements of the quality of care on up to 35% (5)

This quality Improvement is possible as clinical guidelines

1. Provide knowledge about care options that nurses can draw on when discussing and making clinical decisions with patients
2. Outline a course of intervention that can act as a blueprint for care.
3. Providing evidence-based definitions for care, against which practise, and sometimes cost can be measured.

Developing a clinical guideline is a six step process.

1. Document the need for a clinical guideline
2. Ask the burning clinical questions
3. Collect the most relevant and best evidence
4. Critical appraise the evidence
5. Integrate the evidence, with one’s clinical expertise, patients preferences, and the values in making recommendation for practice
6. Make suggestions to methods for monitoring the quality of care.

I will try to illustrate the steps in the process with an example from a clinical guideline from Denmark – with the title:

## Clinical guideline for hand hygiene in hospital staff.

### Step 1: Document the need for a clinical guideline

In Denmark, it is estimated that more than 100,000 patients annually get a hospital acquired infection corresponding to 10% of all admitted patients. Hospital acquired infections cause longer in-hospital stay, unwarranted patient suffering, and increases the economical burden of the health care system. Micro organism can be transferred from the hospital environment and between patients via the hands of hospital staff (18;19). Hand hygiene is considered one of the most important measures for preventing the spread of pathogens in hospitals. About a third of hospital acquired infections are preventable by a broad range of efforts, whereas hand hygiene is an important factor. Unfortunately, studies confirm adherence to hand hygiene remains low among hospital staff (6).

### Step 2: Ask the burning clinical questions

The description of the background leads to a number of clinical relevant Questions

#### Systematic review questions

- *What is the evidence that contaminated hands are a cause of hospital acquired infections?*
- *Which hand cleaning agents are the most effective at removing/-reducing potential pathogenic bacteria?*
- *When must hands be cleaned in relation to patient care activities?*
- *What is the most effective hand washing/hand rubbing technique for removal/reducing micro-organisms on hands?*
- *Which hand cleaning agents are least toxic to hospital staffs' hands*
- *How can contamination of hands be prevented?*
- *When and how should gloves be used?*
- *What are the prerequisites for performing correct hand hygiene?(6)*

### Step 3 and 4: Collect the most relevant and best evidence and Critical appraise the evidence

The authors developed a search strategy that was guided by these clinical questions. They searched for literature in:

- Cochrane, PubMed, Embase, Cinahl, SweMed and the Danish article base within a specified time frame
- Search terms were defined – and the following were used in English and in Danish
  - Criteria for in- and exclusion of literature
  - Validation for literature
  - Strategy for selections of papers
- They included primarily studies with the highest strength such as meta-analysis or randomised controlled trials (RCTs)(6).

- Studies with lower evidence were included when randomised controlled trials were lacking. They also included identified papers from reference lists.
- The literature was validated independently and jointly by two persons in the working group.
- Selection of papers was done by consensus. Furthermore, they used consensus to formulate the recommendation and when choosing indicators and standards. The latter also considering what can be monitored realistically.
- Then they Critical appraise the evidence - the findings – here I only show a short part of the findings from the literature search, just to give an idea of the work.

Step 5: Integrate the evidence with one's clinical expertise, patients preferences, and the values in making recommendation for practice

Recommendation for hand-washing

- When hands are visibly or at risk of being soiled with blood, secretion, excretions or other biological materials (A)
- Hand-washing should always be followed by alcohol-based hand-rubbing (B)

Hand-washing technique

- Wet hands and wrists with water (cold or lukewarm)
- Apply 1-2 pump pushes of soap (A)
- Rub mechanically the water and soap palm to palm, around the fingertips and thumbs, around the wrists and on the back of the hands, and between fingers for about 15 seconds. Rinse thoroughly with water (A)
- Hands and wrists should be carefully pressed dry with a single use paper towel (D)(6)

The letters in the brackets give the strength of the recommendation. A is the highest strength and D the weakest strength.

Step 6: Make suggestions to methods for monitoring the quality of care

In template for the clinical guideline the authors are asked to give suggestions to a Indicators for measuring the quality(7).

In this case they suggested the following

- Proportion of performed alcohol-based hand rubbing before clean procedures (85%)
- Proportion of performed alcohol-based hand rubbing after unclean procedures (85%)

### **Low quality of existing guidelines**

In Denmark, as in other countries, we have been struggling with a low quality of the existing guidelines. We have been using many resources to develop guidelines locally. Therefore it was decided to establish The Centre of Clinical guidelines – National Clearinghouse for Nursing. The centre opened officially September 2008.

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A Clearinghouse is an organization, who gathers, assesses the quality, registers and promotes evidence based guidelines to be used by nurses in any clinical setting. Nurses can send their own developed clinical guidelines to be approved as a guideline, which can be used anywhere – the guideline is cleared. To clear a clinical guideline means that the “house” ensures the quality of the guideline on the basis of scientific evidence, consistency and relevance.

Developing a clinical guideline is a very time consuming process. From our experiences a time frame of 9-12 months is realistic. And normally 3-5 persons are involved in the process. And a number of hospitals had developed guidelines within the same clinical areas. Therefore Centre for Clinical Guidelines – National Danish Clearinghouse in Nursing – was founded.

In the centre we have many obligations

- To assess the quality (professionally and methodologically) of clinical guidelines in nursing
- To establish and maintain a database of approved clinical guidelines in nursing
- To communicate knowledge of existing clinical guidelines
- To collaborate nationally and internationally on the development of clinical guidelines
- To select areas for future research
- To initiate and be part of research activities nationally and internationally
- To initiate and be part of educational activities to strengthen the quality and development of clinical guidelines.

Two of our main aims are to insure high quality of developed clinical guidelines by peer reviewing the guidelines before publication and to maintain a data base of all reviewed guidelines.

By high quality clinical guidelines we mean - that the individual clinicians can have the confidence - that the potential biases of guideline development have been addressed adequately and

- That the recommendations are both internally and externally valid,
- That the recommendations are feasible for practice. AGREE

This process involves taking into account the benefits, harms and costs of the recommendations, as well as the practical issues attached to them.

Therefore, the assessment includes judgements about the methods used for developing the guidelines, the content of the final recommendations, and the factors linked to their uptake(8).

To assess the quality of the guidelines we use the The AGREE Instrument - this instrument assesses both the quality of the reporting, and the quality of some aspects of recommendations (8).

It provides an assessment of the predicted validity of a guideline. That is the likelihood that it will achieve its intended outcome, but the assessment does not assess the impact of a guideline on patients' outcomes.

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In Denmark the hospitals have been integrated into a small number of bigger units, a unit can have 1-5 hospitals. In total we have about 30 hospitals units. As we are providing both internal and external peer reviewing of the guidelines before publication other hospitals can rely on the quality of the guidelines and do not need to develop one by them self.

By clearing the guidelines we help to bridge the gab between research and clinical practice, as clinical guidelines helps to

- Ensure uniform nursing quality
- Ensure reduction in variation
- Ensure continuous update of scientific evidence
- Define relevant indicators in surveillance and feedback

When using clinical guidelines based on the process described in this article and reviewed in a clearinghouse the clinicians provide high quality patient as the care are based on critical appraisal of the existing research, the research has been translated into trustworthy recommendations.

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