

USABILITY TESTING OF CLINICAL GUIDELINES

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The screenshot displays the helsebiblioteket.no website interface. At the top, the logo and name are visible. A search bar is present with a 'Søk' button. Below the search bar is a navigation menu with tabs for 'Health Library', 'Guidelines', 'In summary, research', 'Journals', 'Databases', 'Patient', and 'Tools'. The main content area is divided into several sections:

- Topics:** A vertical list of medical topics including Emergency Medicine, General practice, Anaesthesia, Children and youth, Blood, Older, Endocrinology, diabetes, Prison Health, Poisonings, Physiotherapy and occupational therapy, Gynecology - Obstetrics, Heart and vessels, Skin, Infection, Cancer, Quality improvement, Laboratory Medicine, Respiratory, Stomach and intestinal, Musculoskeletal Disorders, Neurology, Kidney and urinary tract, Mental health, Radiology and Nuclear Medicine, and Geriatrics and palliative care.
- FREE MAGAZINES IN THE HEALTH LIBRARY:** Features a 'vård I NORDEN' magazine cover with a 'Gå til helsebibliotek' link.
- Journals:** A section with a 'Choose topic' dropdown menu and a list of journals including Annals of Internal Medicine, BMJ, JAMA, The Lancet, The New England Journal of Medicine, Norwegian / Scandinavian journals, and All journals.
- REFERENCE DATABASES:** A section with a 'Select Database' dropdown menu and a search prompt: 'Search databases to find many articles.' It lists 'Pubmed - Full text' and 'Lexicomp with Medlineplus'.
- SELECT TOPIC LIBRARY:** A section with a 'Choose topic' dropdown menu and a description: 'Subjects with separate editorial staffs and a lot of content.'
- CLINICAL ENCYCLOPEDIA:** A section titled 'Reference' with the description 'Quick answers to questions in the patient encounter.' It lists 'BMJ Best Practice', 'UpToDate', 'Anatomical atlas (Norwegian)', 'PDR', and 'More encyclopedias'.
- GUIDELINES AND TREATMENT RECOMMENDATIONS:** A section titled 'Guidelines' with a 'Choose topic' dropdown menu and the description 'Advice and recommendations on the diagnosis and treatment of medical conditions.' It lists 'Guidelines International Network (GIN)' and 'Several guidelines and manuals'.
- WHAT DOES THE RESEARCH?:** A section titled 'In summary, research' with the description 'All research on the subject collected, reviewed and summarized.' It lists 'Cochrane Library' and 'More art reviews'.
- NEWS:** A section titled 'Measuring Properties of tests and assessment tools for'.
- Login:** A section for user authentication with fields for 'Username' and 'Password', a 'Log in' button, and links for 'New User' and 'Forgot your password?'.
- McMaster PLUS:** A promotional section for 'Pyramidesøk' with the text 'Fewer results and better answers' and 'Pyramidesøk'. It also includes a 'New studies' section with the text 'Notification of new quality reviewed studies' and a 'Registration' link.
- Selected recent studies:** A section featuring the 'McMaster PLUS' logo and the number '20'.

Norwegian guideline database

Search Norwegian guidelines

Søk

Norwegian policies, guidelines and recommendations

| | | | |
|---------------------------|--|--------------------------------|-----------------------------|
| Emergency Medicine | Poisonings | Stomach and intestinal | Rus |
| General practice | Physiotherapy and occupational therapy | Musculoskeletal Disorders | Community and Public Health |
| Anaesthesia | Gynecology | Lower respiratory tract | Dental |
| Children and young people | Heart and vessels | Neurology | Ear, Nose and Throat |
| Blood | Skin | Kidney and urinary tract | Eye |
| Older | Infection | Organization of health care | Veterinary Medicine |
| Endocrinology | Cancer | Mental health | Other |
| Ethics | Medicines | Radiology and Nuclear Medicine | |

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Norwegian guidelines

Many guidelines have been converted to electronic reference works.

• Norwegian policies and guidelines

- Stroke
- Medically assisted treatment, MAR
- Sudden Infant Death Syndrome
- Meniere's disease
- Testicular cancer
- Palliative care
- Prostate cancer
- Lymphoma
- Small intestine cancer
- Colon and rectal cancer

Patient Involvement



Illustration: Brynje Landmark

Here are tips from various developers directed on how to proceed in order to involve patients in developing guidelines.

Development of guidelines



Tips and tools from national and international bodies dealing with development and quality of guidelines.

International guidelines

With access to numerous international organizations that prepare, present and evaluate the quality guidelines.

- Guidelines International Network (GIN)
- News from the Agency for Healthcare Research and Quality, AHRQ
- Mobile Resources - Guidelines

Guidelines, policies, recommendations and guidelines for prevention, diagnosis, treatment and follow-up.

Do you miss policies in the collection? - Send an e-mail to project manager bjorn.hilde@helsekt.no

Some of the guidelines is highly regarded to the SINCE.net

Summarize doctors and GPs perform the evaluations.

• About the guideline project

• What policies are included?

• Who considers the quality guidelines?

Responsible for updating the page:



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Problems with PDF document

- Can take several minutes to open
- You often have to go through a lot of pages before you find the information you need
- Difficult for search engines to find the right information
- Difficult to update
- Need to download the latest version of the program
- Difficult to link to the right chapter

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Pilot: Web-based guidelines for stroke



- The Norwegian electronic health library has developed a system for making guidelines web-based
- Goal: Clinical guidelines to be suitable for use in the consultation with the patient
- Usability test before developing more web-based guidelines

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Pilot project

The screenshot shows the homepage of the National guidelines website for stroke treatment and rehabilitation. The header includes the title 'National guidelines treatment and rehabilitation of stroke' and navigation links for 'All recommendations', 'Treatment path', and 'Download pdf'. A search bar is also present.

| Stroke | Acute phase | Secondary prevention | Rehabilitation | Tools & attachments |
|---|---|---|---|---|
| Introduction Aims The Stroke centers Rehabilitation Care Follow-up & coordination | Prevention Delivery of patient treatment Diagnosis Investigation Acute stroke and TIA Brain management Prognostic Investigation Laminectomy | Blood Anticoagulation Blood pressure Smoking Lipid lowering Diabetes mellitus Hypertension Living habits | Prognosis and selection Diagnosis of stroke Follow-up Organized stroke rehabilitation Processes in stroke rehabilitation Function and recovery Activity and movement Environmental factors | Organization, structure and staffing in stroke units Tools and scoring tools Guidelines for transfer to rehabilitation Treatment in stroke Checklist of discharge Measures during patient admissions |

Below the table, there are sections for 'Preface' and 'Introduction'. The 'Preface' section states that the Health Directorate wishes that the guideline will contribute to a more consistent, effective treatment quality of stroke patients in Norway regardless of gender, age and residence. The 'Introduction' section states that stroke affects annually around 15 000 people in Norway (1), is the third most frequent cause of death, is a major cause of severe disability and has major economic consequences.

At the bottom right, there is a logo for 'helsebiblioteket.no'.

Methods



7 test persons participated

- Nurses
- GPs
- Cardiologist
- Physiotherapist

Tested

- The opening page
- Subpages
- Tools
- Navigation
- Search
- Readability

Methods

Test room

- An instructor + test person
- General and clinical questions



Observation room

In another room observers

- listened
- watched video
- followed eye-tracking
- watched the screen from the test person's PC



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We asked 33 practical clinical questions

- Do stroke patients have rights to have a individual plan?
- What should be done during the transportation to the hospital?
- How many weeks do patient have to wait before they can drive after a stroke?

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National guidelines treatment and rehabilitation of stroke

Metnod | All recommendations | Full version (pdf) | Short version (pdf)

Søk

| Structure | Acute phase | Secondary Prevention | Rehabilitation | Tools & Attachments |
|--------------------------|--------------------------|---------------------------|-------------------------|---|
| Prehospital | Prehospital | Interdisciplinary | Report | Organised stroke rehabilitation |
| Hospital | Reception of the patient | Insurance | Pregnancy and lactation | Processes in stroke rehabilitation |
| TIA | Diagnosis | Other conditions | Blood pressure lowering | Criteria for thrombolytic treatment in stroke |
| Stroke centers | Stroke Units | Stroke Units | Diabetes mellitus | Checklist of discharge |
| Rehabilitation | Investigations | Life-prolonging treatment | Karotenose | Measures during transport |
| Control | Ischemic stroke and TIA | Spasmodic stroke centers | Living Habits | Abbreviations |
| Follow-up & coordination | Brain Hemorrhage | Physiological | | |
| | | | | |

Organization, structure and staffing in stroke units

Key aspects of the organization, structure and staffing of an effective stroke unit based on the knowledge from randomized trials:

Dedicated patients: All acute stroke patients

Location: Geographically defined unit of hospital

Average length of stay: Minimum 1 week, typically 1-3 weeks.

Manning (Recommended / minimum):
 Medical: 1 fixed physician per 5 beds
 Nurse: 1.0 to 2.0 nurses per bed
 Board of Nursing: a kind nurse per 5 beds
 Physiotherapist: a permanent physiotherapist per 5 beds
 OT: a permanent occupational therapist per 10 beds
 Speech therapist: a speech therapist per 10 beds

Expertise: All personnel in stroke unit should be provided special training about

Informing local organization and procedures

Tests that could be performed online and printed

PART TEST (Print extra questions, Answers, language difficulties, speech difficulties)

| Test name | Age group | Score | Interpretation |
|-----------|-----------|-------|----------------|
| ... | ... | ... | ... |
| ... | ... | ... | ... |
| ... | ... | ... | ... |
| ... | ... | ... | ... |

Interactive forms for use with individual patients



- Should be in the electronic health record
- Not legal to write the patients name on the website, even if it is not saved
- They did not find or understand the print sign
- How to save the tests?

Patient:

| Additional Risk Factors (in addition to atrial fibrillation) | Points |
|--|----------|
| <input type="checkbox"/> Congestive heart failure | 1 |
| <input type="checkbox"/> Hypertension | 1 |
| <input type="checkbox"/> Age > 75 years | 1 |
| <input type="checkbox"/> Diabetes | 1 |
| <input type="checkbox"/> Previous stroke | 2 |
| Total score | 0 |

Estimated annual risk of stroke from CHADS₂-scores

| CHADS ₂ -scores | annual risk (%) |
|----------------------------|-----------------|
| 0 | 1.0 |
| 1 | 2.8 |
| 2 | 4.0 |
| 3 | 6.9 |
| 4 | 8.5 |
| 5 | 12.5 |
| 6 | 18.2 |





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Secondary prevention, evaluation and treatment

4.5 lipid-lowering therapy

| Recommendations: lipid-lowering therapy | Degree | Level | Attachments |
|---|--------|-------|-------------|
| All patients with ischemic stroke or TIA should receive advice and guidance on changes in living habits that can affect the lipid profile in a favorable direction, such as increased exercise, diet changes and weight loss in overweight (*). | C | 3 | Biography |
| Usage limits: There is no clear treatment boundaries, but all patients with ischemic stroke or TIA A 1a with LDL > 3.0 mmol/l should be offered statins unless contraindicated. | A | | |
| In elderly patients > 80 years, the documentation relating to statins relatively weak, and individual assessment should be undertaken. | D | 4 | |
| Treatment: treatment of lipid-lowering therapy after ischemic stroke or TIA should be A 1a LDL < 3.0 mmol/l, if this can be achieved without adverse effects. | A | 1a | |
| In patients with very high total cardiovascular risk, including diabetes, lower treatment assessed (**). | B | 1b | |
| In patients with side effect of statins can reduce the dose to the dose as tolerated to avoid withdrawal. | B | 2b | |
| Patients treated with a statin when they stroke or TIA should resume the treatment throughout the acute phase (possibly via nasogastric probe). | A | 1a | |

Recommendations at top of each chapter

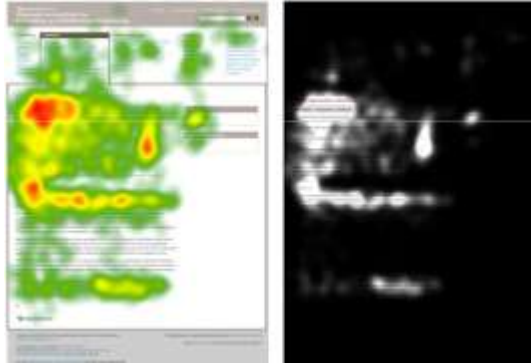
Level of evidence

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Heatmaps

Heatmap of the page with the test for swallowing difficulties in the acute phase of stroke.

Both the heatmap and the inverse heatmap shows that **structured recommendations, test and links** gets the most attention.



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The grading of the evidence where only partly understood

Links to explanation for level of evidence were partly understood, but they wanted links to the evidence for each recommendation.

The recommendations with D were perceived as NOT IMPORTANT – doesn't matter what we do.

Why do The Directorate of Health make recommendations that are not important?

Why grade it at all – a rule from The Directorate of Health must be followed anyway - or?

In elderly patients > 80 years, the documentation relating to statins relatively weak, and individual assessment should be undertaken.

D 4

Treatment: treatment of lipid-lowering therapy after ischemic stroke or TIA should be A 1a LDL <2.0 mmol / l, if this can be achieved without adverse effects.

A 1a

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Too much text and comprehensive text

- Summary
- Bullet points
- Subtitles
- Space, paragraphs, break down the text in sections
- Focus on recommendations and links to more detailed information, and background



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- Font size should be increased to 13 – 15 pixels for body text and line distance to 1.3 x the font size.

- Links must be self-explanatory, not numbers



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Search

- We used Google search
- Test persons evaluated the first 5-6 search results
- They used the search when they did not know where to look it up in the menu

Search for: driver license

Search for: Stroke

Search for: Individual plan



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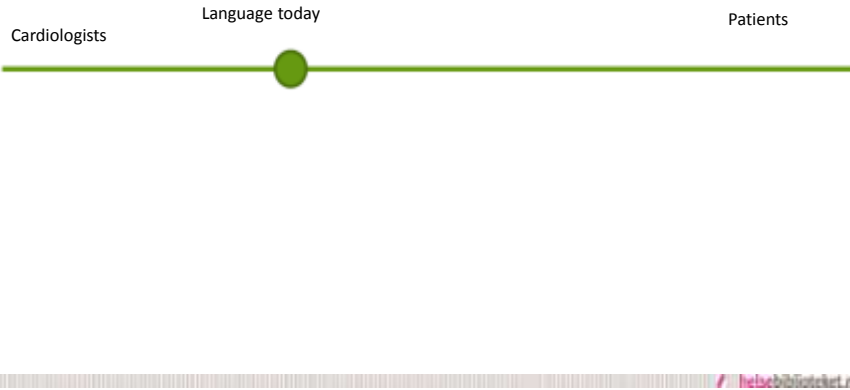
Search: Improvements

- It is included a link to PDF version on the web-site (for print).
- The PDF includes all content and the search gave too many hits in the PDF.
- Remove the PDF version from the search.

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Language

- No negative reaction to a little difficult language
- But they also reacted negative to bureaucratic language and some also called it politician language



What is relevant for who?

[Helsebiblioteket \(T\)B](#) | [Nasjonalt referansesenter for legemiddelassistert rehabilitering ved opioidavhengighet](#) | Metode | Alle anbefalinger | Fullversjon (pdf) | Sammenheng

Alle roller | [Allmenntilleg](#) | [Spesialisthelsetjenesten](#) | [Apotek](#) | [NAV-Sosialtjenesten](#) | [Fagkompetent LAR](#) | [Kommunehelsetjenesten](#) | [Pasienter](#)

| Bakgrunn | Diagnostikk og utredning | Oppstart, behandling | Videre behandling | Avslutning | Substitusjon utenfor LAR |
|--|---|--|--|---|---|
| Sår Opioidavhengighet Organisering Bruksmønstre Funksjoner og begrep | Indikasjon for LAR Utredning og henvisning Henvisningen Individuell plan Vurdering av henvisning Utredning og behandling på spesialsenter | Valg av legemiddel EGD Avvikling Behandlingssett Biotilgjengelighet Vedlikeholdstiltak Legemiddelomsattegn | Kontroll av behandling Rehabilitering og individuell plan Døtse av legemidler Vedlikehold av behandling Paracetamol Utvandrings Fytong | Utredning fra LAR Fytong avvikling Vurdering av utredning Avslutning | Reduksjon ved episodehengighet Stabilisering |

6 Indikasjon, henvisning og vurdering >

6.6 Vurdering av henvisning

| Anbefalinger i dette kapitlet | Grad |
|---|------|
| Substitusjonsbehandling bør alltid vurderes opp mot og sammen med andre behandlingsmuligheter. | D |
| Pasienten bør som hovedregel innkalles til en avklaringsamtale ved vurderingsenheten sammen med henvisende instans. | D |

Indikasjonen for LAR skal vurderes i enhet i spesialisthelsetjenesten som er utpekt til å vurdere henvisning til TSB for å sikre at andre behandlingsmuligheter blir vurdert(!). De regionale helseforetakene står ansvarlig for å peke ut det nødvendige antallet vurderingsinstanser for å ivareta dette.

Noen ganger vil det ikke være mulig å vurdere indikasjon ut fra henvisningen uten å ha snakket med pasienten og/eller innhentet utfyllende opplysninger fra andre instanser. Derksom det er nødvendig å hente inn supplerende opplysninger, skal dette gjøres jf. § 2-2 i pasientrettighetsloven(!).

| Roller |
|---|
| Allmenntilleg Pasienter NAV-Sosialtjenesten Spesialisthelsetjenesten |

| Vedlegg |
|---|
| Litteraturliste LAR-protokoll Kunnskapsoppsummeringer |

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HelseDirektoratet 2010
National action plan with guidelines for diagnosis, treatment and monitoring of prostate cancer

Method All reviews Printable version (PDF)

Søk i retningslinjen Søk

Kjemoprofylakse Diagnostics Treatment General monitoring Palliative treatment

Hjem >

Print

Main Chapters

- Preface
- 1 Epidemiology
- 2 Prevention
- 3 Screening and early detection
- 4 Diagnosis and investigation
- 5 Staging
- 6 Treatment with curative intent
- 7 Follow-up of patients with prostate cancer
- 8 Rasisebehandling after curative treatment
- 9 Palliative treatment of locally advanced or metastatic disease
- 10 Method
- All reviews
- Contents
- Release information

Preface

Many medical groups have for years put a significant effort to reach consensus-based professional recommendations for diagnosis and treatment of various cancers. The groups' recommendations have until now lacked official status, but has formed the core of the offer by the hospitals. As part of the National Cancer Strategy (2006-2009) was the Directorate of Health commissioned to develop and update the groups' recommendations for national action programs for cancer treatment, in close cooperation with communities, regional health authorities, the Norwegian Knowledge Centre for Health Services and other relevant authorities. In this way, the new action programs from the Directorate of Health represent a continuation and a formalization of the groups' recommendations.

As part of its future development are also compiled a proposal for organizing the continuous updating of the action programs, including early warning of new technology and methods. National action programs for cancer treatment will help to ensure that public services in cancer care is of good quality and equitable across the country.

These national guidelines for diagnosis, treatment and monitoring of prostate cancer is part of the national action program for prostate cancer. Target groups for the guidelines are specialists in medicine, surgery, oncology, radiology and pathology. They will also be of interest to general practitioners, patients and relatives.

The Action Plan will eventually be supplemented with guidelines for nurses and any other professionals working with cancer patients. The goal is to cover the entire patient path for cancer patients.


National guidelines from the Health Directorate is to be considered as recommendations and advice, based on current

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How to write clinical guidelines for the web?

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Based on our experience we have made guidance for guideline authors on how to write clinical guidelines for the web.




Put yourself in the user's position

- What a behind-the-scenes must be written. Don't make the eye guess what the content in the chapter is – use intuitive and descriptive headings
- Do not use "link" language; think of what the user enters into the search field
- If you have difficult words, which the user not often will search for, add synonyms to be index by the search engine
- Users are looking for answers, for long general updates and reading, they will still use books and not the computer

Links

- Provide links to more detailed information on the subject like systematic reviews
- Add links to other internet sites, and make sure other sites are linking to the guidelines. This can increase the ranking in external search engines
- Make sure that the links direct users to internet sites that are freely available



First things first

Writing for the web differs from traditional writing


- The most important words in the beginning of a sentence
- The most important content in the beginning of the menu or highlighted words easily accessible on the opening page
- The most important content in the beginning of each chapter
- Recommendations should be placed at top of each chapter
- A full paragraph should contain a maximum of 30 words and accurate only one focus

Titles are crucial

- Titles should make sense on their own – when someone links to your document it is usually the title that appears in the list
- Titles are called highly by search engines
- A title of 45 words should summarize an extensive text
- Use the appropriate trigger words
- You should have a new subtitle for every third paragraph on the page
- A collection of the subtitles in a web page should give a brief summary of the content

Active language

Use the active voice and avoid passive constructions



Make sure the text is easy to read

- Enough white space in the text
- Use bullet points
- Emphasize important words
- Provide figures, photos and illustrations that support the text

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Positive results

- Perceived as useful and reliable, all test persons trusted guidelines from The Directorate of Health.
- Heat map of the opening page shows focus at the menu and headlines.
- In the guideline chapters the structured recommendations, separated from the text, got most attention.
- Menu at the top of every page that follows the clinical pathway was liked and used.



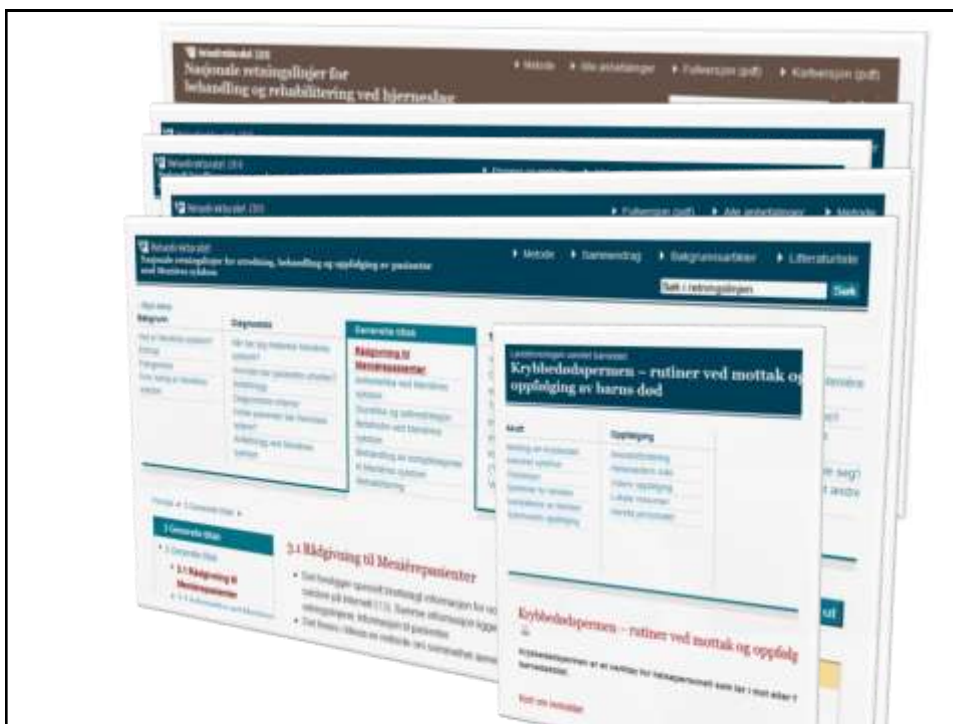
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Conclusion

- We have
 - made more guidelines
 - Used the results to teach other guideline developers
- The usability test led to improvements
- Web-based guidelines are perceived as useful for clinicians



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Thank you for your attention!