- A mobile learning tool to train health workers and medical students.
- So what is Clinical Practice Guidelines?

CPGS formalizes research, and is validated for use in treatment.
Recommendations, as there are valid reasons for not always following the recommendation.

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- We are weighing benefits and harm to each other.
- All patients gets the same treatment for the same condition.
- Since formalized, better use of resources, work more efficient as of standardizing, reduce outlays for hospitalisation, use cheaper medicine.

- Lack of self-efficacy: they don't believe in themselves that they execute the instructions in the guideline with high quality.
- $+++$: Lack of agreement with the content, Lack of outcome expectancy, Inertia of previous practice.

- Large Guidelines. 400 pages.
- This one is used for emergency clinics in Norway.
- Wall of text
- Symptoms left, treatment right.
- Not good at point of care. We can improve.

- Adaptable to the learner.

Approach - 6

I have done iterations and evaluations.

- Multiple-try with feedback. Multiple attempts to get a question right and the feedback is right or wrong.
- Problem with multiple-try with feedback: bad or unmotivated students will click randomly.
- Solution: a button where you can continue without selecting the correct answer.
- Small penalty and large reward motivates to revise an incorrect answer.

- Assessment, get an idea of what diagnosis a patient may have.
- Diagnosis, strengthen your assumption and pick a severity.
- Management, treatment and procedure.
- Evaluation and act on the evaluation.
- What the patient shoud do on his own and follow-up.

- It's the flow of the clinical encounter.
- Based on the guideline.

- This is a skeleton, an excerpt to keep the complexity down and keep it more compact.
- It represents the patient at a given time in the clinical encounter.
- You give the patient medication, and hopefully the symptoms in the graph has changed when you evaluate.

- Detail level of the entity graph (patient).
- We are using templates to create narratives.
- Tags refer to vertices in the graph. Both in template and answer key.
- Can use the same template with other graphs to make new narratives with matching answer key.
- Can also reuse the graph on other templates.
- Problem: The values can't be directly printed in the narrative. What is 24? What is True? V?

- Attach a presentation vertex to all values.
- If a vertex doesn't have a presentation, simply return the value.

- A way to control the content flow in the application.
- Instead of every student going through the same learning material in the same way, we try to adapt it to the individual learner.

- We split the content in relation to the clinical encounter (workflow model).

Dynamic Content Management - 15

We have identified

- the knowledge units.
- the dependency between the knowledge units.
- expressed the dependency as a prerequisite.

Need to learn how to diagnise and treat a patient, before you can evaluate the treatment and act.

- The student can finish assessment, diagnosis or management in any order he wants.
- Have to complete all categories at one level to be able to progress to the next level.
- The detail level of the questions increases for each level.
- Demonstrate learning map and student map.

- Pick a quiz.
- The difficulties shows where the student is in the learning map.

- Scenario.
- Assessment.
- Multiple choice.
- Feedback.
- Shows an explanation when correct.
- Wheeze.

- The scenario continues.
- Diagnosis.
- Oxygen saturation ¡90%

- Management.
- Prednisolone and oxygen.

- Follow-up. Asks about prednisolone.
- Can try again. Gets penalty for every wrong attempt.
- Can choose to give up, see the answer and continue, but looses the reward.
- We want the user to encourage the user to revise the question.
- 5 days.

- We did very well and our position in the learning map is updated.
- We still have to redo follow-up before we can continue to level 3.
- The graph shows the score in each individual category as bars. The line is the passing condition in each category.
- We didn't pass follow-up.

The evaluation needs to be scheduled.
Will do whatever we have time for.