**Title:** Improved care for patients with pneumonia

**Background**

In the orthopedic and geriatric wards at Värnamo hospital there were patients with pneumonia as a secondary infection. The incidence of pneumonia is increasing for patients over 65 years of age, as well as for patients with diseases such as chronic pulmonary disease, neurological diseases, diabetes and surgery. Physiotherapy is a common complementary therapy for patients with pneumonia. Physiotherapy for patients with pneumonia/to prevent pneumonia consists mainly of mobilization and respiratory physiotherapy.

The aim of the following projects was to decrease the risk of pneumonia, to increase the knowledge of how physiotherapy can improve care for this group of patients and to decrease prescription of antibiotics (STRAMA).

The included projects were: 1) a literature review of physiotherapy treatment for pneumonia and renewed description of clinical guidelines, 2) decrease care related infections for patients at the orthopedic ward at Värnamo Hospital with a change of clinical guidelines concerning breathing devices, 3) changed clinical routines at the geriatric ward at Värnamo hospital with the aim to give all immobilized patients respiratory physiotherapy and help with mobilization within 24 hours.

**Method**

The literature review was performed with search of scientific articles from PubMed, PEDro and Scopus with the search words: pneumonia, respiratory physiotherapy, huffing, mucous clearance, positioning, positive expiratory pressure (PEP) and chest physiotherapy limited to “adults”.

At the orthopedic ward the project started by changing the routines for immobilized patients in the following way: the physiotherapists at the ward got education about breathing devices and changed their use of PEP-bottles to Mini-PEP. After this the physiotherapists initiated respiratory physiotherapy for all immobilized patients, and the nurses assisted the patients in performing respiratory physiotherapy during their period of immobilization.

At the geriatric ward the project was a team rehabilitation project, where any member of the team initiated the need for chest physiotherapy and the physiotherapists used their new clinical guidelines for chest physiotherapy. The most important change was the increased number of patients given respiratory physiotherapy. The change was measured by the amount of KVÂ-codes in Diver, following the amount of respiratory physiotherapy interventions given by physiotherapists. The 24 hour statistics was measured in periods of two weeks (all patients in two geriatrics wards) with paper-pen-registration and followed in the register “Riksstroke” (only for patients with stroke).

The projects involved directly all the physiotherapist who works at the geriatric clinic and orthopedic clinic together with two physiotherapists working at the medical clinic, as well as physiotherapy assistants working at Samrehab. The staff at the medical, orthopedic and geriatric wards where involved in the team care around the patient and in implementing the new clinical routines.
Results

The literature review gave new knowledge about respiratory physiotherapy and showed a need for further respiratory physiotherapy education within Samrehab. This has led to a compulsory basic respiratory physiotherapy education for all physiotherapists at Samrehab.

At the orthopedic ward the project has led to an increase respiratory physiotherapy interventions, which possibly could assist in decrease of pneumonia for immobilized patients. The project was started as a PDSA-project in 2011 and the change of clinical routines is implemented within the team. The department staff and the physiotherapists are trying to meet bedridden patients in the shortest possible time with mobilization and respiratory physiotherapy in order to decrease the risk of pneumonia. The physiotherapists at the orthopedic ward has informed the department staff the most effective ways to instruct and coach elderly patients to use Mini-PEP, and also how to use the PEP-bottle instead of the Mini-PEP if the patients has difficulties using the Mini-PEP. The nurses at the orthopedic ward still use the PEP-bottle, but the use of Mini-PEP has increased. Mini-PEP is only introduced by a physiotherapist. During weekends PEP-bottle is standard for new patients. The nurses feel that the project has given them a greater awareness concerning how respiratory physiotherapy can prevent pneumonia.

Nurses at the geriatric ward has not same amount of time compared to a year ago, this is due to a change in organization. Today they do not have the same time with every patient and cannot always put breathing exercise in to their priorities. They feel that it is necessary with a list where patients and stuff can mark for every accomplished breathing exercise. Physiotherapist at the geriatric ward feel that they are more aware of when breathing exercise is needed but that the stuff at the ward not always have the time to help patients accomplish it.

The first initiative to change the clinical routines for immobilized patients at the geriatric ward was in December 2012. The change in clinical routines at the geriatric ward has led to an increased amount of respiratory physiotherapy, from below 10 respiratory physiotherapy interventions per month to above 60. Pneumonia as a secondary infection in the geriatric ward between 130101-130930: 2 in January, 1 in April, 0 February-March and May-September.

There is still too much variation in the results, which has led to a new PDSA-project concerning further improving competencies in respiratory physiotherapy for the physiotherapists working towards the geriatric ward at Värnamo Hospital. The project has also showed that more breathing devices are needed at the geriatric ward in order to be able to give better respiratory care. To improve mobilization within 24 hours, physiotherapists at the geriatric ward will be regularly on weekend duty. The measured results shows an increase from 30% of the patients being treated within 24hours to above 60%, but there is a need for further implementation since the results are not stable yet.

Summary

In the orthopedic and geriatric wards at Värnamo hospital there were patients with pneumonia as a secondary infection. The incidence of pneumonia is increasing for patients over 65 years of age, as well as for patients with diseases such as chronic pulmonary disease, neurological diseases, diabetes
and surgery. Physiotherapy is a common complementary therapy for patients with pneumonia. Physiotherapy for patients with pneumonia/to prevent pneumonia consists mainly of mobilization and respiratory physiotherapy.

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At the orthopedic ward the project has led to an increase respiratory physiotherapy interventions, which possibly could assist in decrease of pneumonia for immobilized patients. The change of clinical routines is implemented within the team.

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The projects including a search for new knowledge in combination with clinical improvement work has led to an increased focus on preventing pneumonia among physiotherapists at Samrehab and increased teamwork aiming at decreasing secondary infections in hospital care.

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