

STUDY DESCRIPTION Bachelor LEVEL

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|----------------------------|---|
| Course title: | Healthcare Logistics Bachelor level 10 ECTS |
| Course code: | PILOT WEEK 10 February -14 February 2020 |
| Contact hours: | See planning on page 11 |
| E-Learning hours: | |
| Prerequisites: | Proven to master the vocational level |
| Course unit leader: | RUAS |

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1. Introduction, aims and objectives

The module aims at developing competences on a bachelor level in healthcare logistics. The definition of Healthcare Logistics is: the control of treatment/care/support activities and the related staff planning, information and flow of goods in such a way that the preferences of clients/patients will be met cost effectively (Moeke & Verkooijen, 2010). The preferences are related to quality, patient safety as an aspect of quality, and sustainability. To define Healthcare logistics furthermore a distinction between ‘Goods Logistics’ and ‘Patient logistics’ can be made. However, both process flows are linked. No cure or care without goods, and no goods if no cure or care is needed, as shown in figure 1.

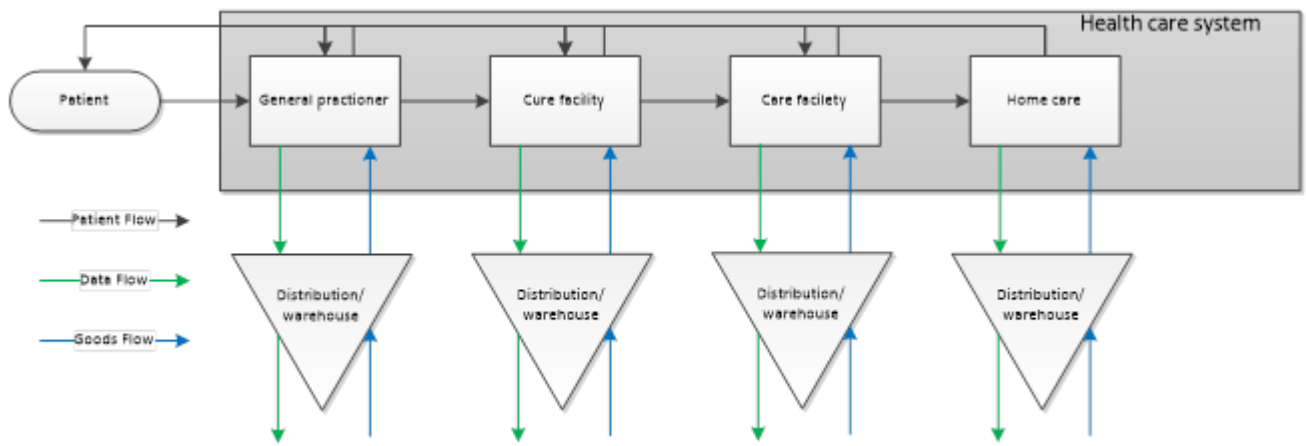


Figure 1: General overview of health care logistics((Oomen, 2016)

In Figure 1, the patient flow is the main flow and the role of the material logistics is to support it as effectively as possible.

This module is meant for professionals and students with either a logistics background or a healthcare background. Working on these competences is on basis of learning objectives related to main topics in healthcare logistics, such as processes and efficiency, capacity management and procurement

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2. Entry criteria and evaluation methods

The module is designed for those students and professionals who wish to build their professional career in healthcare logistics.

Entry criteria for bachelor students:

- Have completed the entire secondary education in one of the following countries: EU countries.
- Are occupied with a bachelor's degree program for logistics or a healthcare's bachelor's degree program

Entry criteria for healthcare professionals

- Are occupied within a healthcare organisation

And

- Have a Bachelor's degree in logistics or healthcare

Or

- Finished successfully the vocational HELP Course in Healthcare logistics

Entry criteria for logistics professionals

- Are occupied within a healthcare logistics service provider

And

- Have a Bachelor's degree in logistics or healthcare

Or

- Finished successfully the vocational HELP Course in Healthcare logistics

Evaluation method:

- A student who is eligible for a bachelor education MUST hand in a proof of subscription to an University of applied sciences within the European Union
 - A student who has completed the vocational HELP course MUST hand in an associated certificate..

Healthcare logistics education on a bachelor level covering the following topics:

3. Learning outcomes, competencies

Through the successful participation in the course the following competencies and related learning objectives can be acquired:

| Study module | Goals and objectives in terms of competences and skills |
|---|---|
| Part 1: Orientation to Healthcare Logistics landscape (1 ECTS) | <ol style="list-style-type: none"> 1. Has basic knowledge of terms, acts, degrees, regulations and guidelines governing the healthcare landscape 2. Understands the changing environment of Healthcare (logistics) systems 3. Is able to understand basics ethics in Healthcare 4. Is able to know and understand the main objectives of Healthcare |
| Part 2: Critical environment (2 ECTS) | <ol style="list-style-type: none"> 1. Is able to plan and develop patient safety with regard to process improvements methods used in healthcare 2. Is able to carry out infection prevention measures in accordance with the best practices in process design and re-design |
| Part 3: Logistics Improvement methods and tools in healthcare (3 ECTS) | <ol style="list-style-type: none"> 1. Is able to develop inventory management guidelines based on ABC-analysis, XYZ, Consignment stock, inventory turnover, etc. 2. Is able to know when and how to apply Lean management, Six Sigma and ToC in Healthcare 3. Is able to know how the use of Lean Six Sigma and Theory of Constraints methodology can improve waiting times, lead times, accessibility times, nr of visits, utilization rate of resources like Operating Rooms) 4. Is able to monitor AND improve patient/material logistical performance by using the Lean Six Sigma and Theory of Constrains methodology 5. Is able to formulate policy on processes of healthcare logistic processes (patients / materials) |

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| Part 4: Capacity management (3 ECTS) | <ol style="list-style-type: none">1. Is able to formulate policy on planning, capacity management of healthcare logistics2. Is able to organize, manage and improve the patient/material logistics related to planning, capacity and process management3. Is able to demonstrate how to improve the utilization rate of resources, resource planning (e.g facilities, Operating rooms, etc)4. Is able to reproduce relevant product knowledge in relation to resources common in Healthcare |
| Part 5: ICT in healthcare logistics (1 ECTS) | <ol style="list-style-type: none">(1) Is able to understand the role of information management and ICT in Healthcare Logistics(2) is able to know what kind of technologies can add value to logistical performance in Healthcare |

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4. Course description

The module consists of 5 thematic logically consistent units, adding up to 10 ECTS

Methodology:

In order to achieve the goals presented above blended learning methods are applied. The course is based on the combination of face-to-face training sessions and e-learning methods.

The face-to-face training is an action-oriented and problem-focused event, which ensures the possibility of experience-based learning. Case studies, group work, Healthcare game and various forms of training exercises constitute skill development activities. All these face-to-face exercises are accompanied by e-learning materials with the aim at providing an insight into the theoretical foundations of the training material and leaving space for reflection.

5. Introduction to pilot schedule

The student is asked to complete the individual E-learning courses prior to the pilot week in Lahti. For this, the material is made available digitally. The material is made available approximately 2 months prior to the pilot week.

5.1 Schedule individual learning (preparation before start pilot week)

| <i>Study module</i> | <i>Learning objective</i> | <i>Topic/ working method</i> |
|---------------------|---|--|
| Part 1: | <ol style="list-style-type: none"> 1. Introduction to the course 2. Getting familiar with the basics and context of healthcare logistics 3. Understanding the changing environment of Healthcare (logistics) systems | <p>Introduction to healthcare logistics (and objectives)</p> <p>An assignment covering the following questions to be answered by the students:</p> <ol style="list-style-type: none"> (1) Basics of healthcare logistics – part 1 (healthcare systems, logistics systems) (2) How can terms within the field of healthcare logistics be defined and described? |

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| | | (3) Which international and national trends do contribute to a changing environment of healthcare (logistics systems)? |
| Part 2: | Critical environment | An assignment covering the following questions to be answered by the students: |
| Part 3: | To be able to know and understand the basics of part 3 (Logistics Improvement methods and tools in healthcare) | An assignment covering the following questions to be answered by the students: |
| Part 4: | To be able to know and understand the basics of part 4 (Capacity management) | Students will use educational material provided via e-mail for part 4 in a class room setting. An assignment covering the following questions to be answered by the students: |
| Part 5: | Being able to understand the role of information management and ICT and how value could be added to healthcare processes | Students will use educational material provided via (—) for part 5 in a class room setting. An assignment covering the following questions to be answered by the students: |

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5.2 Planning Pilot week 10 to 14 February 2020, Lahti.

| <i>Consultations</i> | <i>Learning objective</i> | <i>Topic/ working method</i> |
|--|---|--|
| <p>Contact day 1 All together</p> <p>RUAS</p> | <p>To know and understand basics ethics in Healthcare</p> <p>Part 1: Orientation to healthcare logistics landscape, ethics</p> | <p>Action-oriented and problem-focused event:</p> <ol style="list-style-type: none"> Getting to know each other Discussion based on concrete ethical issues and how this issues influence decision making for healthcare professionals |
| <p>Contact day 2 LAMK</p> | <p>Part 2: Is able to understand patient safety and carry out infection protection</p> <p>Part 3: Is able to develop inventory management guidelines based on ABC-analysis, XYZ, Consignment stock, inventory turnover, etc.</p> | <p>Shall be decided by LAMK</p> |
| <p>Contact day 3 RUAS</p> | <p>Morning hours:</p> <p>Part 3: to know how the use of Lean Six Sigma and Theory of Constraints methodology can improve waiting times, lead times, accessibility times, nr of visits, utilization rate of resources like Operating Rooms, cost, benefits and efficiency of material flows</p> | <p>Action-oriented and problem-focused event: Integrated case / project. This will be group work improvement /Lean Six Sigma/ ToC</p> <p>Guiding tutors (= teachers) will act as problem owner to the case</p> <p>Students are asked to present their case results</p> |

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| | <p><i>Afternoon hours:</i></p> <p>Part 4: Is able to organize, manage and improve the healthcare logistics related to planning and capacity management</p> | Playing a physical simulation |
| <p>Contact day 4</p> <p>LAMK</p> | <p>Part 5: To know and understand value add of ICT systems in healthcare logistics</p> | <p>Hospital visit: students should reflect on this lesson by mentioning lessons learned in their learning diary.</p> <p>Action-oriented and problem-focused event:</p> |
| <p>Contact day 5</p> <p>All together</p> | <p>Part 1/part 2/part 3/ part 4/ part 5</p> | <p>Final closure of the pilot. Students are asked to present and discuss their lessons learned AND general feedback related to the pilot week.</p> |

6. Assessment and grading criteria

Evaluation is part of the training process. The evaluation tools intent to measure personal development through the training process as a whole. In order to do so, the following means are applied.

6.1 Learning diary

In the end of contact day 5 students are asked to present and discuss their learning diary. The learning diary must contain a collection of notes, observations, thoughts and other relevant materials built-up over a period of time and maybe a result of a period of study. Its purpose is to enhance the participants' learning through the process of writing and thinking about their learning experiences. The learning diary is personal to the individual participants and reflects their personality, preferences and experiences.

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6.2 Summative Assessment

The goal of summative assessment is to evaluate student learning at the end of each topic covered within this bachelor module.

Examples of summative assessments include:

1. a short paper based on a given assignment
2. peer evaluation during the contact days
3. learning diary evaluation

Grading Good/Sufficient/ insufficient

7. Literature

7.1 Compulsory reading

Shall be decided

7.2 Recommended readings

Shall be decided

7.3 Useful links and websites

Shall be decided

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Appendix: Training plan / Student workload (pilot week and preparation)

| Training plan - Topics | | | | | | | | |
|------------------------|----------------------------------|--|-----------|---|-----------|--|------------|--------------------|
| Days / Weeks | Training elements | Face-to-face | | E-learning | | Other | | Total time (hours) |
| | | | time | | time | Extra | time | |
| | Pre- assignment | | | | | Questionnaire and motivation of starting level | 8 | 8 |
| | Assignment (E-learning) | Individual learning before pilot week starts | | Part 1, part 2, part 3, part 4 and part 5 | 40 | Reading material and assignments | 120 | 160 |
| | Contact day 1 | Introduction and action oriented Part 1 | 4 | | | Preparation next day | 4 | 12 |
| | Contact day 2 | Action oriented learning part 2 | 8 | | | Hospital visit Preparation next day | 2 | 10 |
| | Contact day 3 | Action oriented learning part 3 and 4 | 8 | | | Preparation next day | 2 | 10 |
| | Contact day 4 | Action oriented part 5 | 8 | | | Guest lecture Preparation next day | 4 | 12 |
| | Contact day 5 | Closing / evaluation | 4 | | | | | 4 |
| | Post - assignment and assessment | | | | | Preparation for the digital written exam | | |
| | Total time | | 32 | | 40 | | 140 | 216 |

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