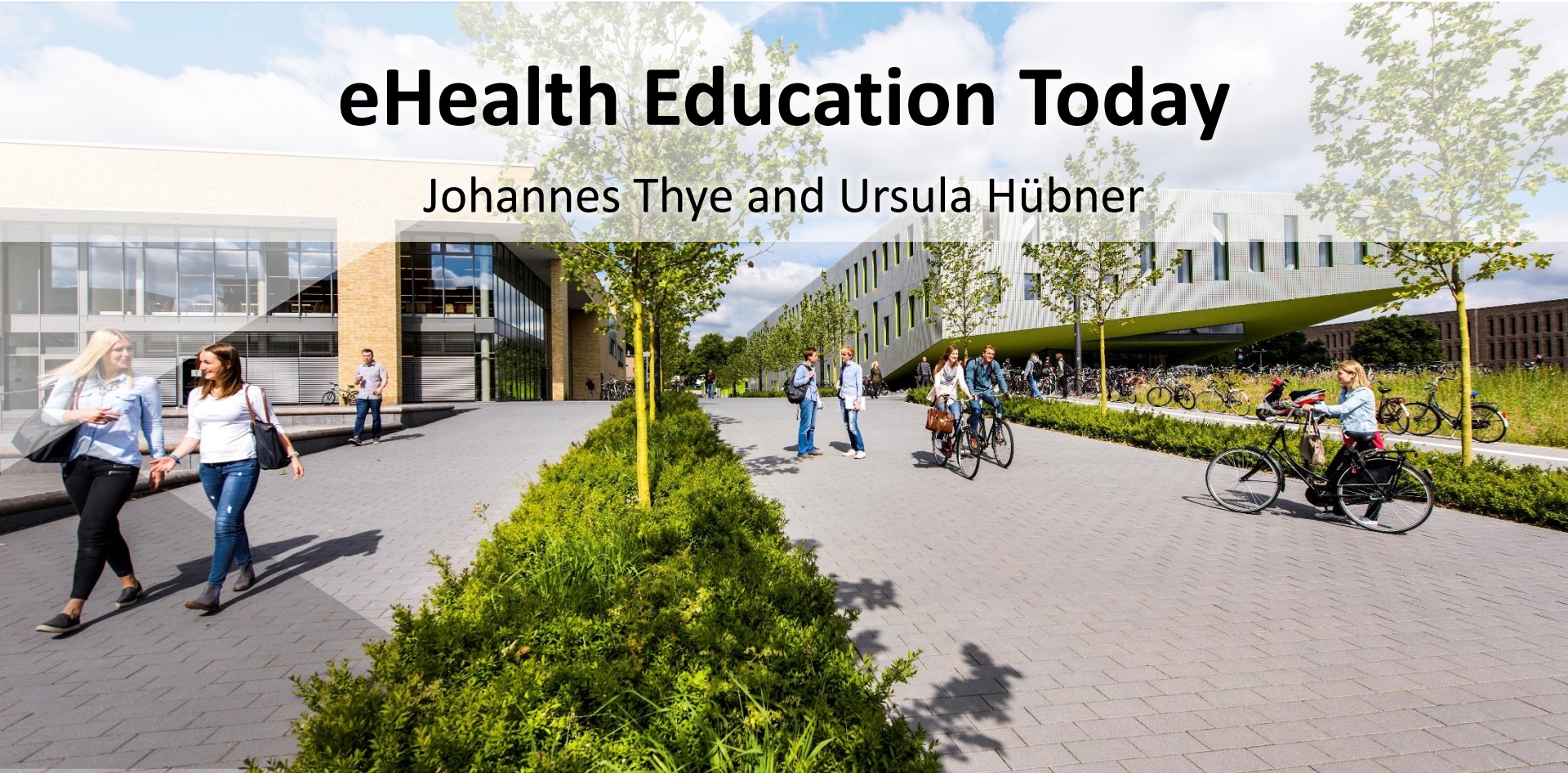


# eHealth Education Today

Johannes Thye and Ursula Hübner



# University of Applied Sciences Hochschule Osnabrück

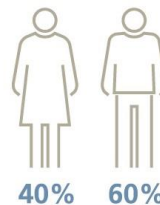


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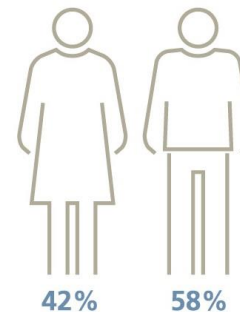


Department of Business Management and Social Sciences  
Department of Engineering and Computer Science  
Department of Agricultural Sciences  
Department of Management, Culture and Technology  
Institute of Music

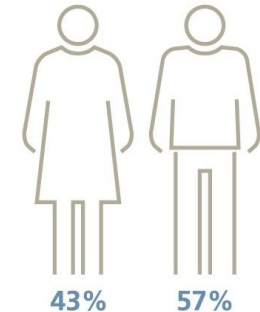
**7.535** Studierende  
2007/2008  
(Beginn Hochschulpakt 2020)



**13.413** Studierende  
2014/2015



**13.552** Studierende  
2015/2016



# University of Applied Sciences: Caprivi-Campus



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Department of Business Management and Social Sciences



# University of Applied Sciences: Westerberg



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New Teaching Building and University Canteen



# Health Informatics Research Group



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Georg Schulte  
Jens Rauch  
not on the  
picture

# Introductions



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## Prof. Dr. Ursula Hübner

Medical and Health Informatics and Quantitative Methods  
Project Team Lead

## Johannes Thye M.A.

Assistant Professor  
Project Team Member



TIGER International  
Committee Chair

Incoming TIGER  
Committee Co-Chair



↑  
Lead

← Health Informatics Research Group  
University of Applied Sciences Osnabrück

### Funded Research Projects:

- EU\*US eHealth Work
- IT-Report / IT-Benchmarking in Healthcare
- Competence Development of Health Professionals in Context of Lifelong Learning
- INITIATIVE eHealth
- Learning Healthcare System
- IT Decision Support in Wound Care
- Self-Service Terminal - Evaluation

### Teaching:

- Health Informatics: IT Management in Healthcare
- Quantitative Research Methods
- Health Informatics: eBusiness in Healthcare

# Curriculum Nursing Informatics at our University (1)



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			Data protection and security and ethics and IT	1	<input type="checkbox"/> Understand the right of informational self-determination and the goals of data protection, in particular confidentiality, integrity, availability, non-repudiation and others in the light of data protection and security, <input type="checkbox"/> Understand the European and German regulations and laws for data protection, <input type="checkbox"/> Understand different types of attacks and attackers, <input type="checkbox"/> Understand technical and organisational measures, <input type="checkbox"/> Understand and evaluate different scenarios: remote service, BYOD (bring your own device), password policies, qualified digital signatures <input type="checkbox"/> Understand and evaluate ethical standards with regard to information
<b>Teaching and Learning Unit: Primary Competency Areas</b>	<b>1.5 h unit</b>	<b>Competencies</b>			
Principles of nursing informatics	1	<input type="checkbox"/> Understand the concepts of data, information and knowledge, and <input type="checkbox"/> Understand the types and roles of health IT systems			
Nursing documentation (including terminologies)	3	<input type="checkbox"/> Understand the difference between structured and unstructured data and their implications, <input type="checkbox"/> Understand, apply and evaluate nursing terminologies, <input type="checkbox"/> Understand the pros and cons of electronic nursing documentation and electronic health records, <input type="checkbox"/> Understand and apply data analysis methods based on structured data, <input type="checkbox"/> Apply existing nursing documentations systems, and <input type="checkbox"/> Evaluate a nursing documentation system based on a semi-structured questionnaire.			
			Information and knowledge management in patient care	1	<input type="checkbox"/> Understand the relationship between reading literature and guidelines and performing statistical analyses and research, and <input type="checkbox"/> Apply related tools, e.g. pubmed, citavi or endnote, SPSS

# Curriculum Nursing Informatics at our University (2)



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Information and communication systems for nursing (including interoperability)	3	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand the concepts of health IT system to support clinical processes,</li> <li><input type="checkbox"/> Understand health information systems: composition of subsystems in particular electronic patient record systems,</li> <li><input type="checkbox"/> Understand the basics of health IT architectures, integration and interoperability and become aware of the needs of standards,</li> <li><input type="checkbox"/> Understand the basics of communication servers and HL7 messages,</li> <li><input type="checkbox"/> Understand and apply the relation between HL7 messages and terminologies, and</li> <li><input type="checkbox"/> Understand and apply the IT application in ClinLab</li> </ul>
eHealth, telematics, telehealth and assistive systems (including interoperability)	1	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand the German acts and laws with regard to eHealth, e.g. “eHealth Gesetz” and electronic health card, understand other acts, such as in Austria and Switzerland,</li> <li><input type="checkbox"/> Understand the principles of systems in a network, in particular electronic health record systems to bridge institutions,</li> <li><input type="checkbox"/> Understand and apply tele-monitoring, e.g. blood pressure and pulse rate,</li> <li><input type="checkbox"/> Understand, apply and evaluate mHealth applications, e.g. wearables.</li> </ul>

# Curriculum Nursing Informatics at our University (3)



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Quality management and decision support	1	<input type="checkbox"/> Understand the definitions of quality, <input type="checkbox"/> Understand the contribution of clinical guidelines to quality management, <input type="checkbox"/> Understand the relationship between patient safety and quality, in particular with regard to information continuity and information logistics, and <input type="checkbox"/> Apply IT systems for information continuity in patient handover scenarios, <input type="checkbox"/> Understand and apply decision support, e.g. for wound care
Project management and change management	2	<input type="checkbox"/> Understand the definition of a project, <input type="checkbox"/> Understand the concepts of project goals, work breakdown structure, work packages, time plan and milestones, <input type="checkbox"/> Apply and create a project plan for the introduction of a nursing IT system and hereby consider issues of change management, such as user participation, change agents, champions, key users and communication with sceptics.



# Health Informatics Recommendations



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660

*Exploring Complexity in Health: An Interdisciplinary Systems Approach*  
A. Hoerbst et al. (Eds.)

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doi:10.3233/978-1-61499-678-1-660

## An Iterative Methodology for Developing National Recommendations for Nursing Informatics Curricula

Nicole EGBERT<sup>a,1</sup>, Johannes THYE<sup>a</sup>, Georg SCHULTE<sup>a</sup>, Jan-David LIEBE<sup>a</sup>,  
Werner O HACKL<sup>b</sup>, Elske AMMENWERTH<sup>b</sup> and Ursula HÜBNER<sup>b</sup>

<sup>a</sup>Health Informatics Research Group, University AS, Osnabrück, Germany

<sup>b</sup>UMIT – University of Health Sciences, Medical Informatics and Technology,  
Hall in Tirol, Austria

**Abstract.** The increasing importance of IT in nursing requires educational measures to support its meaningful application. However, many countries do not yet have national recommendations for nursing informatics competencies. We thus developed an iterative triple methodology to yield validated and country specific recommendations for informatics core competencies in nursing. We identified relevant competencies from national sources (step 1), matched and enriched these with input from the international literature (step 2) and fed the resulting 24 core competencies into a survey (120 invited experts from which 87 responded) and two focus group sessions with a total of 48 experts (steps 3a/3b). The subsequent focus group sessions confirmed and expanded the findings. As a result, we were able to define role specific informatics core competencies for three countries.

**Keywords.** Nursing, informatics competencies, education, recommendations

655

*Exploring Complexity in Health: An Interdisciplinary Systems Approach*  
A. Hoerbst et al. (Eds.)

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doi:10.3233/978-1-61499-678-1-655

## Towards an International Framework for Recommendations of Core Competencies in Nursing and Inter-Professional Informatics: The TIGER Competency Synthesis Project

Ursula HÜBNER<sup>a,1</sup>, Toria SHAW<sup>b</sup>, Johannes THYE<sup>a</sup>, Nicole EGBERT<sup>a</sup>,  
Heimar MARIN<sup>c</sup> and Marion BALL<sup>d</sup>

<sup>a</sup>Health Informatics Research Group, University AS, Osnabrück, Germany

<sup>b</sup>HIMSS North America, Chicago, USA

<sup>c</sup>Federal University of Sao Paulo, Brazil

<sup>d</sup>IBM Research, USA

**Abstract.** Informatics competencies of the health care workforce must meet the requirements of inter-professional process and outcome oriented provision of care. In order to help nursing education transform accordingly, the TIGER Initiative deployed an international survey, with participation from 21 countries, to evaluate and prioritise a broad list of core competencies for nurses in five domains: 1) nursing management, 2) information technology (IT) management in nursing, 3) inter-professional coordination of care, 4) quality management, and 5) clinical nursing. Informatics core competencies were found highly important for all domains. In addition, this project compiled eight national cases studies from Austria, Finland, Germany, Ireland, New Zealand, the Philippines, Portugal, and Switzerland that reflected the country specific perspective. These findings will lead us to an international framework of informatics recommendations.

**Keywords.** Informatics competencies, nursing, inter-professional care, education

# TIGER Recommendations: eHealth is Highly Relevant for Nurses



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EU-US  
eHealth  
WORK  
Measure Inform Educate Advance



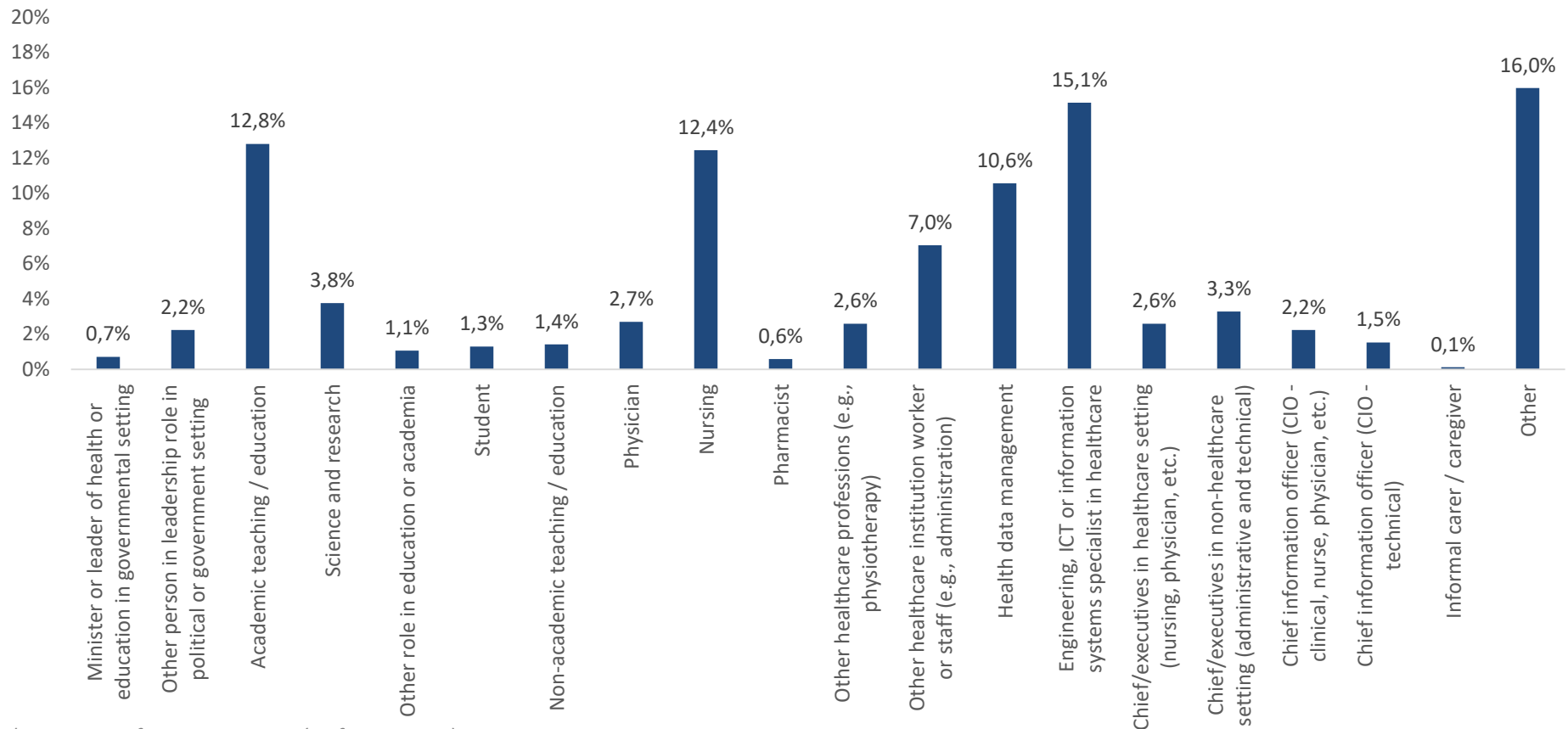
	Core competency area	REL in % n= 41
1	Nursing documentation (including terminologies)	94.4
2	Information and knowledge management	82.2
3	Principles of nursing informatics	80.5
4	Data protection and security	80.0
5	Ethics and IT	79.5
6	Information and communication systems (including interoperability)	75.1
7	Quality management	72.0
8	Decision support by IT	70.2
9	eHealth, telematics and telehealth (including interoperability)	69.5
10	Assistive technology for ageing people	69.0
11	Process management	67.8



***\*Participants from 23 countries***

# Survey of Current Status and Needs - Preliminary Results

**Which of the following roles / categories best describe your primary professional activity?**  
[worldwide; n=852]



*\*Participants from 56 countries (31 from Europe)*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 727552 EUUSEHEALTHWORK

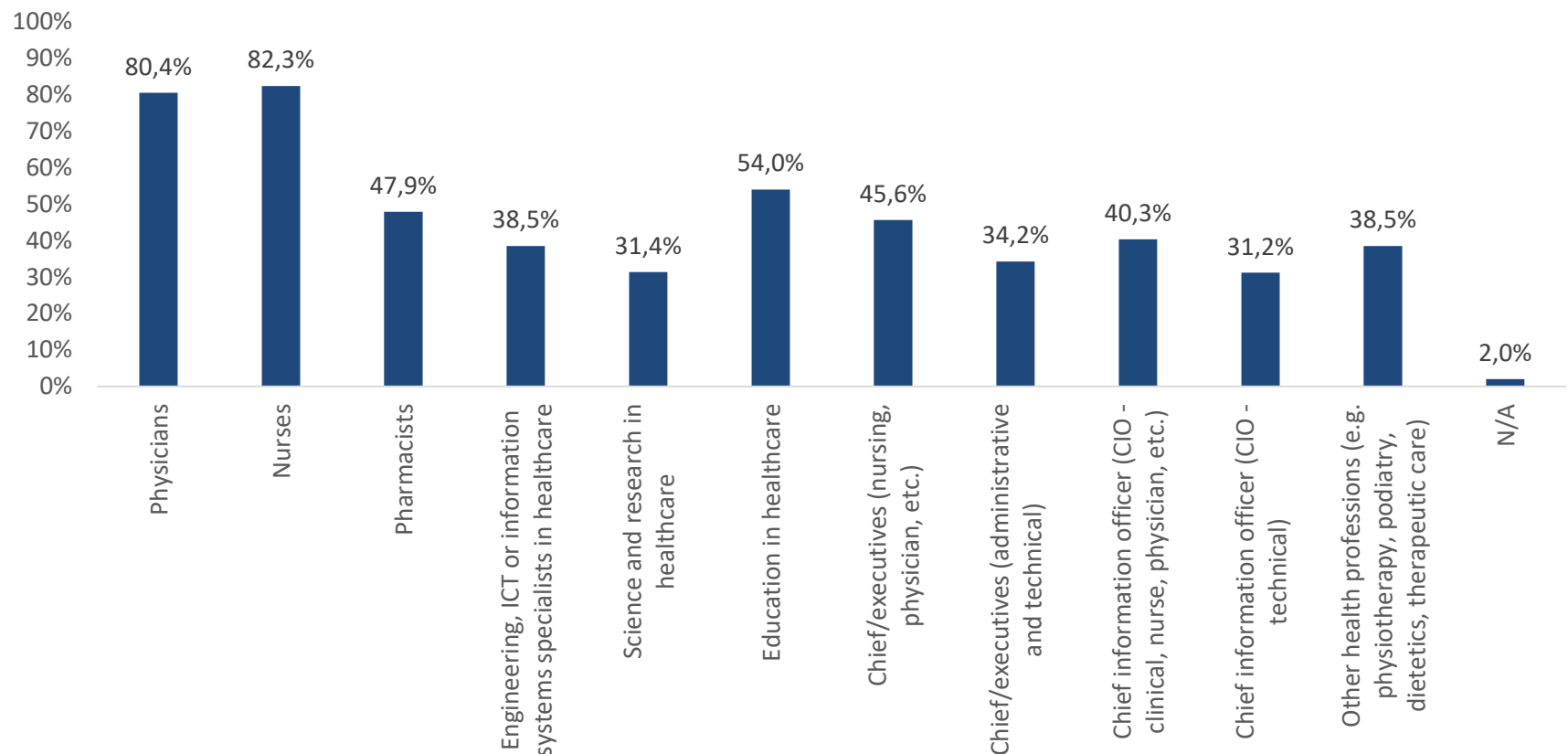
# Survey of Current Status and Needs – Preliminary Results



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**Which professional groups have the most pressing needs for eHealth training? [worldwide; n=491]**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 727552 EUUSEHEALTHWORK

# Main results of the GAP analysis (1)



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1. Missing eHealth knowledge and skills of health professionals (direct patient care), informal care givers and educators,
2. Quantity and quality of the courses and programmes
3. Missing availability of the courses at various levels
4. Missing integration of eHealth competencies into job descriptions and missing adaptation to changing requirements
5. Deficient eHealth infrastructure and
6. Deficient eHealth usage.

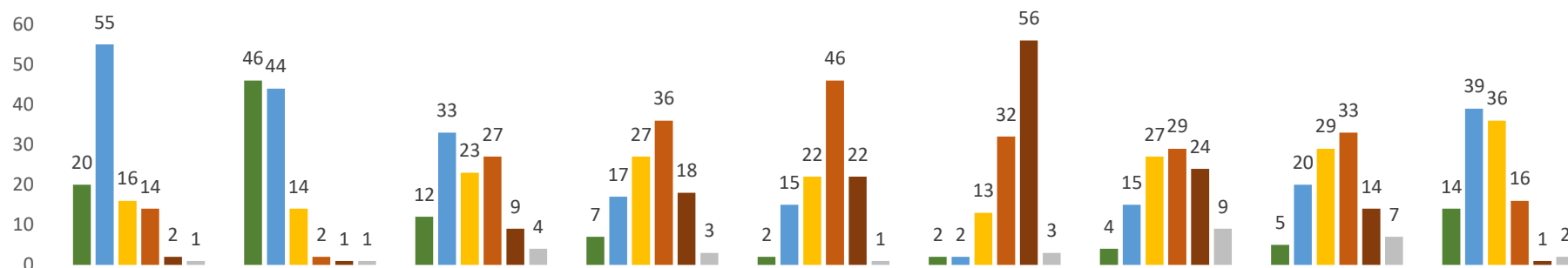
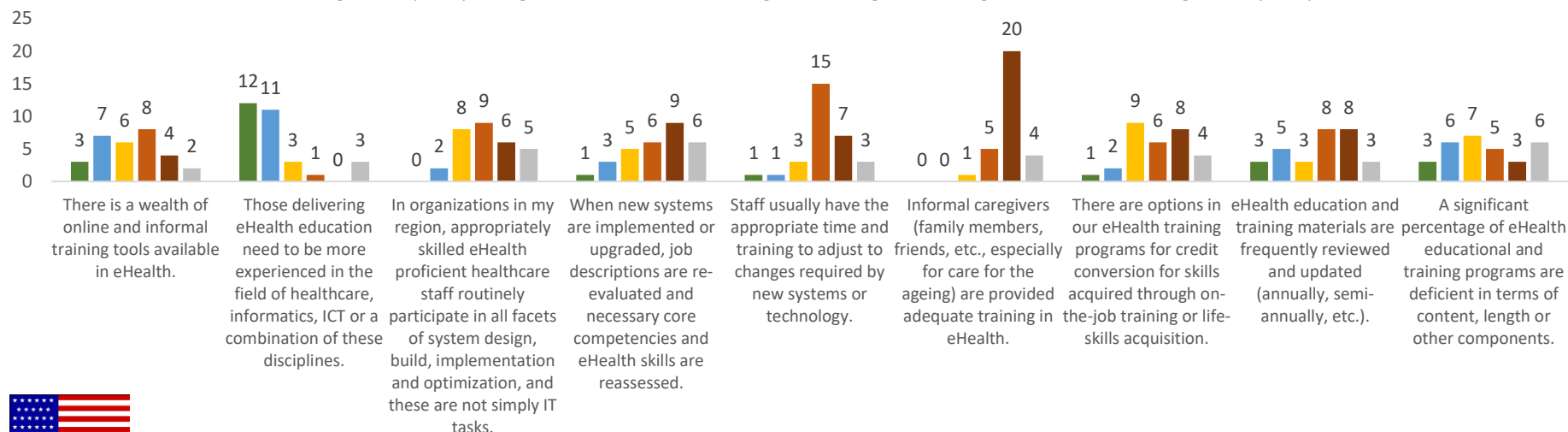
# Main results of the GAP analysis (2)



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■ Agree completely ■ Agree somewhat ■ Neither agree nor disagree ■ Disagree somewhat ■ Disagree completely ■ N/A

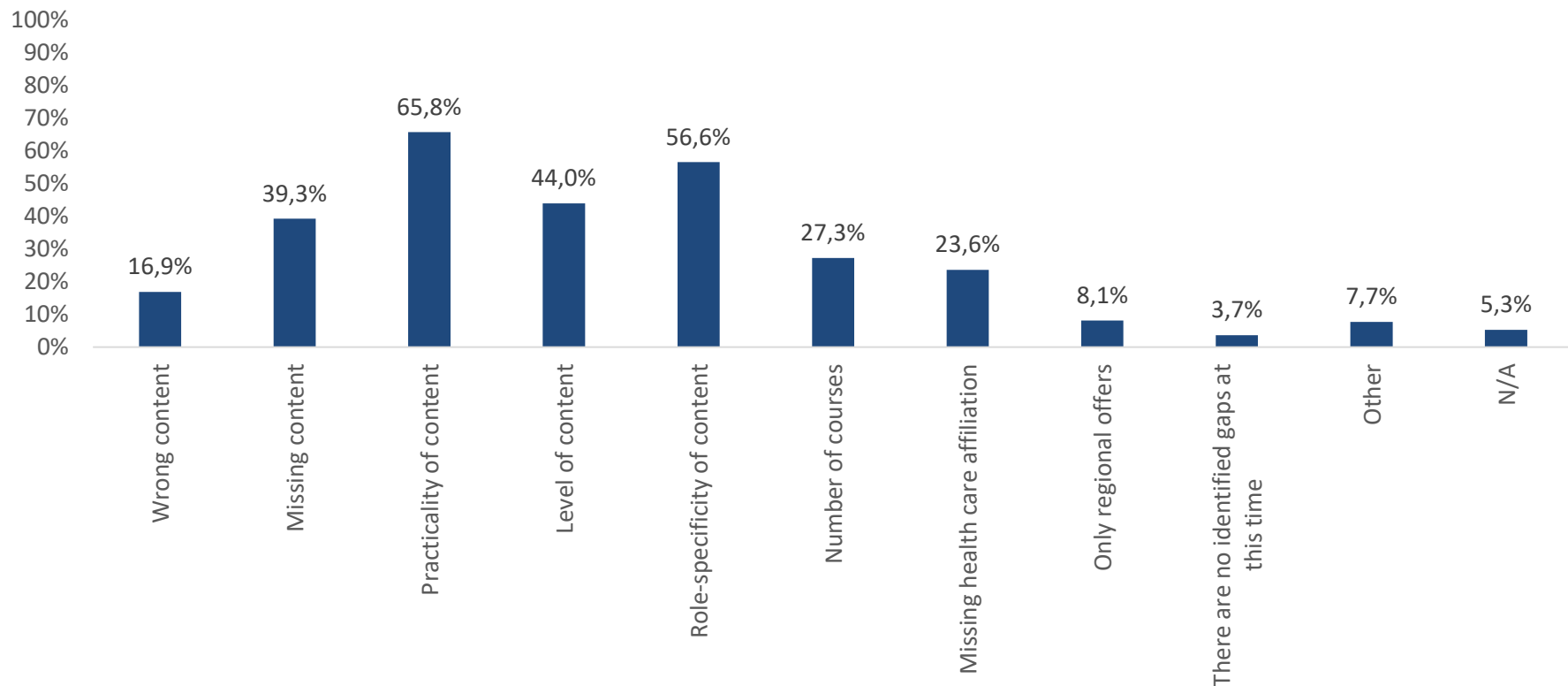


This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 727552 EUUSEHEALTHWORK



# GAP analysis of eHealth courses

**What are the major gaps? Please help us identify needs that are not presently being met by current eHealth courses. [worldwide; n=491]**



# Main results of the GAP analysis (3)



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Many experts from different countries believed that

1. The content of the training should be better tailored to the needs of the profession, the role, the scenario, the workflow, the task and the prior level of knowledge.
2. The training should be very practically oriented with up-to-date content and directly usable in the job, also in new application fields such as clinical decision support systems, analytics and business intelligence, telehealth and other emerging topics.
3. Experts reported that vendor based training was biased and that standardized courses often did not fulfil the needs.
4. The approach of “one size fits all” was rejected by a very large majority and was reverberated in many comments.
5. The majority seemed to opt for a certificate, credit points (for continuing education as well as for an academic degree) and a formal approach.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 727552 EUUSEHEALTHWORK



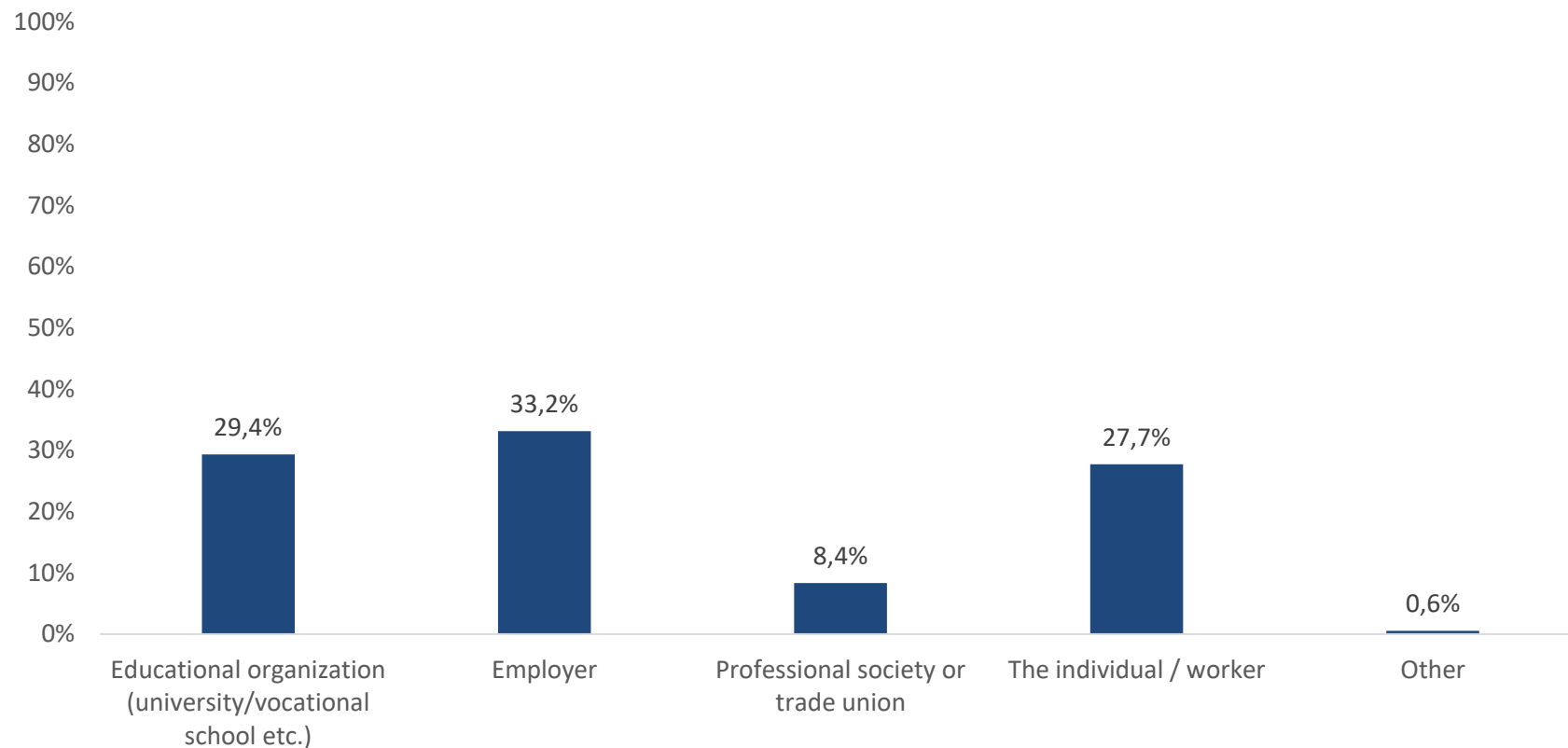
# Further Preliminary Results



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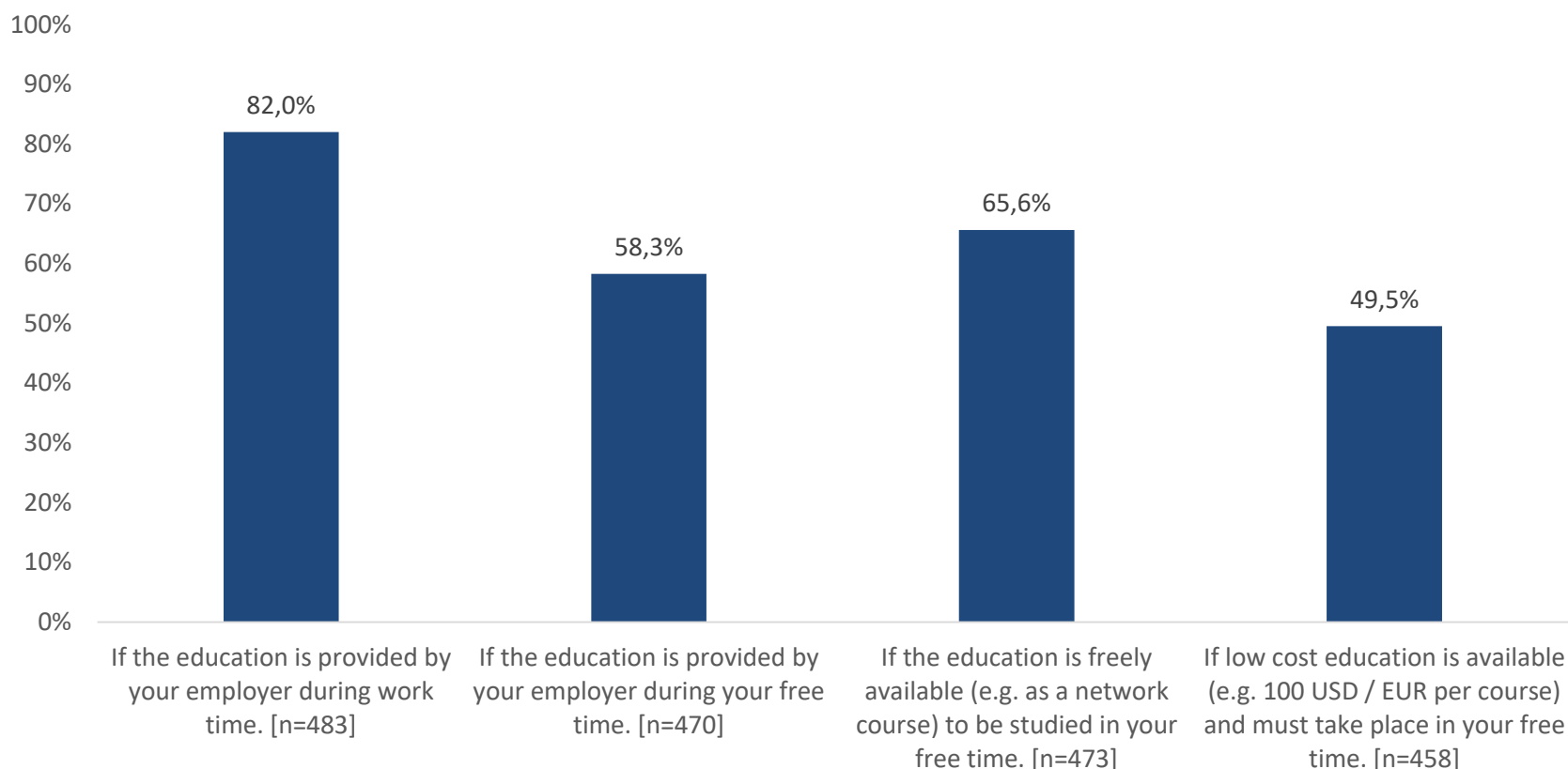


**In your opinion, who is responsible for a worker's eHealth education? [worldwide; n=491]**



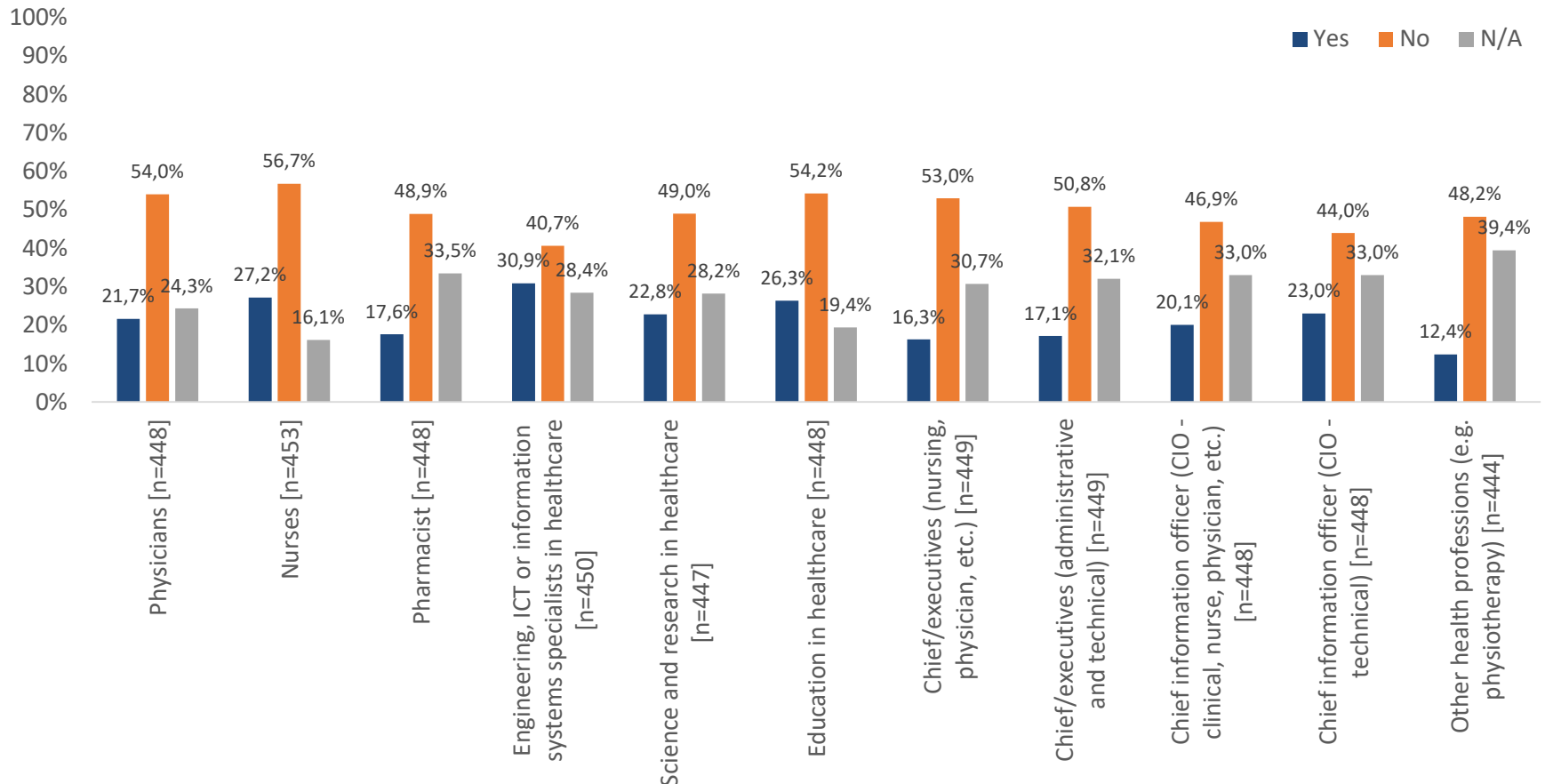
# Further Preliminary Results

**How motivated are you in furthering your eHealth education? [worldwide; 100% = high motivation]**



# Further Preliminary Results

There are enough online training tools / courses available in eHealth for... [worldwide]



# Forecast



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- Many potentials in the survey
- Survey closed this month
- Further GAP analysis if the survey is closed
- Development of an case study template based on the GAP analysis results and similar to the example from Osnabrück

**Next stakeholder event in Osnabrück / Oldenburg in September 2017**





## Contact Us

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**Thank you for  
your attention!**

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