5 TÄRNI ÕENDUS
5 STAR NURSING

Rahvusvahelise konverentsi toimetised
Proceedings of the International Conference

NOVEMBER 6 – 7, 2019
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North Estonia Medical Centre

TALLINN HEALTH CARE COLLEGE

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SISUKORD / *CONTENTS*
Suulised ettekanded / *Oral presentations*

SUULISED ETTEKANDED
ORAL PRESENTATIONS

3N-ist 5 tärni õenduseni

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2015. aastal korraldas Tallinna Tervishoiu Kõrgkool konverentsi „Õendusdiagnooside rakendamine õendushariduses ja -praktikas – perspektiivid ja võimalused / *Applying nursing diagnoses in nursing education and practice: perspectives and possibilities*" (Konverentsid). Tol korral oli tegemist esimese NANDA-I (*NANDA-International*) teemalise konverentsiga Eestis. Seda konverentsi võib pidada 2019. aastal toimuva konverentsi „5 tärni õendus / *5 Star Nursing*" eelkäijaks. Nelja aastaga oleme saanud teadlikumaks ja näeme, et kui tahame pakkuda patsientidele kvaliteetsemat õendusabi ja tõhustada õendus-dokumentatsiooni, jääb vaid NANDA-I-st väheks. Nii ongi ühest NANDA-I teemast saanud märkamatult oluliste teemade kogum: 3N (NANDA-I, NIC – *Nursing Interventions Classification*, NOC – *Nursing Outcomes Classifications*), standarditud õenduskeele rakendamine, e-tervis ja selle õpetamine, tervise infotehnoloogia, õenduskvaliteedi juhtimine ja kvaliteetne õendusabi ning patsiendi rahulolu ja ohutus. Ilma ühe teema lahenduseta ei ole võimalik lahendada ka teisi teemasid.

Eesti õed on näidanud, et neil on valmisolek otsida ja leida uusi arenguteid õendusabi efektiivsemaks osutamiseks. Kaks aastat tagasi toimus Tallinna Tervishoiu Kõrgkooli ja Põhja-Eesti Regionaalhaigla ühiskonverentsil „Õendusabi parim tava – standarditud õenduskeel" Eesti õenduse arengu jaoks märgiline sündmus. Konverentsi epiloo-gina allkirjastati pidulikult ühisdeklaratsioon, milles Tallinna ja Tartu tervishoiu kõrgkoolide rektorid, Eesti Õdede Liit, Eesti Õendusjuhtide Ühing ja 3N-i töörühm tunnustasid 3N-terviksüsteemi rakendamise vajadust riigiüleses elektroonses infosüsteemis (Ühine avaldus …,

2017). Konverentsil kutsus 3N-i töörühm üles kõiki töötama eesmärgi nimel, et saaksime olla aastaks 2025 riikide hulgas, kus rakendatakse 3N-terviksüsteemi. Kas olime liiga optimistlikud?

Oleme jõudnud aega, mil pidevalt toimuvad muutused. Iga sidusvaldkonna areng mõjutab paratamatult koheselt ka teisi vald-kondi. Enam ei piisa vaid enda valmisolekust muutustega kaasa minna. Aina rohkem oleme seotud ümbritsevaga. Hea töö nõuab head planeerimist ja dokumenteerimist. Eestis on alates 2012. aasta lõpust kasutusel eestikeelne NANDA-I õendusdiagnooside raamat. Kõrgkoolides on õendusõppe aluseks NANDA-I taksonoomia ning kõrgkoolid viivad läbi täienduskoolitusi töötavatele õededele. Juba on töökohtadel õedesid, kes õpetavad oma kolleege NANDA-I-d kasutama. Hinnanguliselt on pooled Eesti õed õppinud NANDA-I alusel või läbinud täienduskoolituse.

Tervishoiu kõrgkoolides tehakse NANDA-I, NIC-i ja NOC-i teemalisi lõputöid (raamatukoguprogramm RIKSWEB) ning valmivad rakendus-uuringud. Näiteks viis Tallinna Tervishoiu Kõrgkool läbi rakendus-uuringu „Õendusloo täitmise tulemuslikkusest SA-s Tallinna Laste-haigla" ja käimas on rakendusuuring „Õendusdokumentatsiooni kvaliteet AS-is Lääne-Tallinna Keskhaigla" (Tallinna Tervishoiu …, 2019). Tartu Ülikoolis on kaitstud magistritöö „Õendusdiagnooside, -sekku-miste ja -tulemuste dokumenteerimise kvaliteet Põhja-Eesti Regionaal-haiglas" (Naelapää, 2018). Meil on ka esmased kogemused NANDA-I rakendamisel töökohtadel. Näiteks on Ida-Tallinna Keskhaigla arendamas oma haigla infosüsteemis dünaamilist õenduslugu, mis baseerub NANDA-I valikulistel diagnoosidel ning neile vastavatel NIC- ja NOC-klassifikatsioonidest tulenevatel õendustulemustel ja -sek-kumistel.

Mis on puudu? Puudu on NIC-i ja NOC-i eestikeelne tõlge. Tundub lihtne, aga kas vaid tõlkimisest piisab? See on jäämäe veepealne osa. 3N on oma olemuselt palju suurem kui kolm selle akronüümi eraldiseisvat osa kokku. Kokkulepete sõlmimine tõlkivate inglise ja

eesti keele filoloogide ning vanast (iganenud) harjumusest ladina, vene ja inglise keelest tulnud laensõnu kasutavate erialaspetsialistide seas on rasked tulema. Seega tuleb eestikeelse NANDA-I, NIC-i ja NOC-i kasutuselevõtuks olla avatud uuendustele, varuda aega uue sõnadega harjumiseks ning anda vajalikku tagasisidet tõlkijatele vastavate arenduste tegemiseks. Vajame patsiendi vajadusi hinnates ja neid dokumenteerides just <u>üheselt mõistetavat ja ühiselt kasutatavat</u> standarditud õenduskeelt, mis aitab õdedel jagada patsiendi kohta käivat olulist infot. Kuigi Eesti on väike riik, töötab meil õdesid, kelle emakeel ei ole eesti keel. Ühtne õenduskeel ja terminoloogia aitavad meil kõigil ennast korrektselt väljendada ja üksteist ka efektiivsemalt mõista. Kui patsient liigub ühest tervishoiuasutusest teise, on patsiendi vajaduste ja ohutuse seisukohast ülivajalik, et temaga koos liiguks ka teda puudutav terviseinfo, mis on just standarditud keeles.

Tervishoiuteenuse kättesaadavus, sujuvus ja kogu teenuse kvaliteet sõltub üha rohkem tehnoloogilistest uuendustest. Info- ja kommunikatsioonitehnoloogia (IKT) ülikiire areng pakub aina uusi võimalusi efektiivsuse kasvuks tervishoius. Samas on tegemist otsekui paradoksiga, sest just tervishoiu spetsiifika, meditsiini kiire areng ja infosüsteemide organisatoorne keerukus raskendab nende IKT-süsteemide juurutamist ning rakendamist praktikas. Sellise järelduseni on jõudnud ka Poliitikauuringute Keskus Praxis 2014. aastal läbiviidud uuringus „Telemeditsiini laialdasem rakendamine Eestis" (Kruus jt, 2014). Kaasaegne tehnoloogia loob võimaluse, kuid töötavaks tulemuseks on peale kasutajate tahte vaja palju muud. Praxise uuringust selgus, et telemeditsiini rakendamisel esinevad barjäärid väga erinevatel tervishoiusüsteemi tasanditel. Riigi rolli nähakse eelkõige koosvõime rahastajana, võimaluste loojana või koordinaatorina ja ühtse lahenduse väljatöötajana. Oleme õdedena selgitanud 3N-i rakendamise ja sellega seonduvate infosüsteemide arendamise vajalikkust süsteemide arendajatele. Tagasiside on olnud positiivne ja lootust andev, kuid otsuseid, mis meid edasi viiks, ei ole sündinud.

3N-i kasutamine praktikas on võimalik vaid elektroonsel kujul. Seega peab siin olema õdedel kahekordne valmisolek: esiteks teadmised ja oskused õendusprotsessis 3N-terviksüsteemi rakendamiseks ning teiseks valmisolek elektroonse infosüsteemi kasutamiseks. Õed Eestis on näidanud, et selline valmisolek on olemas. Kuid 3N-terviksüsteem saab süsteemiks alles siis, kui see on kasutatav kõikjal üle riigi ja elektroonsena. Infokülluse maailmas on külluslikud ka meie terviseandmed. Selleks, et neist oleks võimalikult suur kasu ja andmeid saaks võimalikult kiiresti vahendada, analüüsida ja uurida, tuleb enesestmõistetavalt need andmed ka koguda ja elektroonselt säilitada. Et seda ellu viia, ootame endiselt riiklikku otsust infosüsteemi arendamiseks ning NIC- ja NOC-klassifikatsioonide eesti keelde tõlkimiseks.

Kui Eesti jõuab 2025. aastal 3N-terviksüsteemi kasutajate hulka, tuleb mõista, et süsteem on täiuslik vaid hetkel, mil see valmis saab. Selleks, et see kataks patsientide ootused ja õdede vajadused ning kõikide sidusvaldkondade uusima teabe ka edaspidi, on vaja süsteemi juurutada, täiendada, täiustada ja arendada. Uued võimalused loovad uued vajadused, mis on paljuski seotud nii areneva digivõimekuse kui ka jätkusuutliku digipädevusega. Ainult võimaluste olemasolu ei aita meid edasi. Õenduse arengus ja kvaliteedis uuele tasemele jõudmiseks tuleb astuda võimalustega koos ühte sammu, ja et mitte maha jääda, on vahel vaja sammu kiirendada. Sellest lähtuvalt oleme õdede õppes senisest suuremat tähelepanu pööramas e-tervise ja tervishoiutehnoloogia õpetamisele. Kuna vastav teave vananeb kiiresti, siis peab õpe olema ettenägelik ja interaktiivne, et tagada õppijatele valmisolek muutustega kiireks kohanemiseks ja vajadusel ümberõppimiseks.

Pidev infotehnoloogia areng sunnib ka juba töötavaid õdesid arvestama oma töös järjest rohkemate digivõimalustega. Näiteks saab 3N-i rakendamisel standarditud õenduskeelt kasutada ka õenduskvaliteedi indikaatorite valimisel eriala- või valdkonnaspetsiifiliselt. Nende alusel on õendusjuhtidel tulevikus oluliselt lihtsam planeerida meeskonda ja töökorraldust, et tagada kõrge kvaliteedimärgiga õendusabi ning

seda ka üleriigiliselt ühtselt hinnata ja võrrelda. E-õendusloost peab saama andmekogu, mis on patsiendi tervise teekonna lahutamatu osa ja teenib eeskätt patsiendi vajadusi. Kogu tervisega seotud informatsiooni kättesaadavus, järjepidevus ja üheselt mõistetavus suurendaks patsiendi ohutust kliiniliste otsuste tegemisel iga tervisemeeskonna liikme poolt. Olles teadlik oma terviseinfost, on ka patsient pidevalt tervisemeeskonda kaasatud ning rahul.

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From 3N to 5 star nursing

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The Tallinn Health Care College organised a conference, called „Applying nursing diagnoses in nursing education and practice: perspectives and possibilities" in 2015 (Konverentsid). It was the first conference in Estonia to be held on the NANDA-I (NANDA-International) topic by that time. This conference may be considered as a predecessor to the "5 Star Nursing" conference held in 2019. Within four years, we have become more aware and we see that if we wish to offer higher quality nursing care to the patients, and to improve the efficiency of nursing documentation, NANDA-I on its own is not sufficient. Hence, one of the topics in NANDA-I has been developed into a collection of important topics: 3N (NANDA-I, Nursing Interventions Classification (NIC), Nursing Outcomes Classifications (NOC)), implementation of standardised nursing language, E-health and teaching it, health information technology, management of nursing quality and quality nursing care, and patient satisfaction and patient safety. It is not possible to find solutions to other topics without solving each of them.

Estonian nurses have demonstrated their readiness to look for and to find new paths to provide more effective nursing care. There was a joint conference organised by the Tallinn Health Care College and the North Estonia Medical Centre entitled "Best Practices in Nursing – Standardised Nursing Language" two years ago, which resolved in landmark event for the development of Estonian nursing. As an epilogue for the conference, the joint declaration was solemnly signed, and the rectors of the Tallinn and Tartu Health Care Colleges, Estonian Nurses Union, Estonian Nurse Directors Association, and 3N working group recognized the necessity to implement the entirety of the 3N system as the supranational electronic information system (Ühine avaldus ..., 2017). The 3N working group encouraged everybody to work for the collective goal, so that by 2025 we could be among each of the other countries where the 3N system is being implemented. Were we too optimistic?

We have reached an era of constant changes. The development of every related area immediately and inevitably influences other areas. One's availability to embark on changes alone and in isolation is not enough anymore. The surroundings contexts have more and more substantive influence on the individual. Good work requires planning and documentation. Since the end of 2012, Estonia uses the NANDA-I book on nursing diagnoses in Estonian. Nursing studies within colleges are based on NANDA-I taxonomy, and the colleges conduct continuing professional training for working nurses. There are nurses at work at the hospitals who teach their colleagues how to use NANDA-I. It has been evaluated that half of Estonian nurses have have completed their basic education based on NANDA-I, or completed continuing professional training.

There are theses written in health care colleges on the topics of NANDA-I, NIC, and NOC (Library software RIKSWEB) and applied research has being completed. For instance, Tallinn Health Care College conducted applied research „About the effectiveness of nursing records in the Tallinn Children's Hospital", another applied research is in progress „The Quality of Nursing Documentation in West Tallinn Central Hospital (Tallinn Health ..., 2019). The Master's thesis, „The documentation quality of nursing diagnoses, interventions and outcomes in the nursing records of the North Estonia Medical Centre" (Naelapää, 2018) has been defended at the University of Tartu. We also have the start of experience in implementing NANDA-I at workplaces. For instance, East Tallinn Central Hospital is developing dynamic

nursing records in their hospital's information system, it is based on NANDA-I selective diagnoses and corresponding nursing outcomes, as well as nursing interventions derived from NIC and NOC classifications.

What is missing? A complete Estonian translation of NIC and NOC. It seems easy, but is translation itself sufficient? It is just the tip of the iceberg. 3N is much larger in scale and practice than the three separate parts of the acronym all together. Translation agreements between English and Estonian philologists, and the specialists in the field who use loanwords derived from Latin, Russian and English as an old (ancient) habit is not easy at all. Therefore, in order to respond to the NANDA-I, NIC and NOC in Estonian, one should be open for innovation, as it takes a lot of time to get used to new terminology and to give necessary feedback to the translators for corrections. When evaluating the needs of the patient and documenting them, we need a standardised nursing language which is <u>unambiguous and can be jointly used</u>, and which helps nurses share necessary information about patients. Although Estonia is a small country, there are nurses at work whose native language is not Estonian. A unified language and terminology would help us to express ourselves correctly, and to understand each other more effectively. If the patient moves from one healthcare institution to another one, it is essential from the point of patient needs and safety, that the healthcare information regarding the patient would move with them in a standardised language.

Availability, smoothness, and the quality of the whole of healthcare service today depends more and more on technological innovation. The rapid development of information and communication technology offers more and more new opportunities to improve the effectiveness of healthcare. At the same time, it is as if it's stuck in a paradox, because it is namely the specifics involved in healthcare, the rapid development of medicine, and organisational complicatedness of information systems which makes it more difficult to introduce and implement these systems in practice. The same result was achieved

in a study conducted in 2014 by think tank Praxis, entitled „Wider Implementation of Telemedicine in Estonia" (Kruus et al., 2014). Modern technology creates new options, but for working results they need a lot more than just a will of the users. Praxis study (Kruus et al., 2014) demonstrated that there are barriers on the implementation of telemedicine on very different levels of healthcare system. The role of the state is primarily seen as a financier of cooperation, a creator of opportunities or coordination, and as a developer of a uniform solution. As nurses, we explain the necessity of implementation of 3N and the development of information systems connected to it to system's developers. The feedback has been positive, and generates hope, but there have been no decisions which could take us further so far.

In practice, the use of 3N is possible only in an electronic form. In this way, nurses should have double availability. Initially, to have the knowledge and skills in the nursing process for using the overall 3N system, and secondly, availability to use an electronic information system. Estonian nurses have demonstrated that they are ready. However, 3N overall system will become realized only if it can be used electronically and all over the country. The sheer quantity of healthcare data is extensive. To profit from it as much as possible, and to make it possible for the data were to forward, analyse, and examine quickly; it goes without saying that the data should be collected and stored electronically. To implement this, we are still waiting for a state decision to develop an information system and to translate NIC and NOC classifications into Estonian.

Should Estonia become one of the users of the overall 3N system by 2025, it must be understood that it is perfect by that very moment it has been completed fully. To cover the expectations of the patients and needs of the nurses and the newest innovations of all connected areas onwards, it needs to be introduced, updated, and developed further. New opportunities create new needs, which are, to a great extent, connected to both the developing digital capability and sustain-

able digital competence. The presence of opportunities alone does not help us go further. To reach a new level in the development and quality of nursing, it is necessary to move at the same pace with these opportunities, and not to fall behind, and to do so it is sometimes necessary to be even faster. Based on that, we are paying greater attention to teaching e-health and healthcare technology in nursing education than before. Since the relevant information is outdated quickly, education should be prudent and interactive to provide the learners with readiness and the ability to adapt to changes quickly, and to retrain if necessary.

The constant development of information technology puts the working nurses under pressure to consider more and more digital options in their work. For instance, a standardised nursing language can also be used in the implementation of 3N by choosing the indicators of nursing quality particular to the specialty or the field. Based on that, it is much easier for the nursing directors to plan teams and in the organisation of work to ensure high quality nursing care, and to compare and evaluate it nationally with uniformity. Digital nursing records should become a database, which is an inseparable part of the patient's healthcare journey, and serves the needs of a patient first and foremost. The availability, consistency, and uniformity of understanding related to the whole of the whole information of patient`s health would improve patient safety by offering the clinical decisions of every member of the healthcare team. When the patient is aware of their healthcare information, then the patient is consistently included in the healthcare team, and ends up more satisfied, as well.

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NNN-iga seotud kogemused, tulemused ja väljakutsed Iirimaal

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NANDA-I õendusdiagnoosid (Herdman ja Kamitsuru, 2018), õendustulemuste klassifikatsioon (Moorhead jt, 2018) ja õendussekkumiste klassifikatsioon (Butcher jt, 2018) (NNN) toodi Iirimaal esimest korda õenduspraktikasse 2009. aastal. Ettevalmistav rakendusuuring ühes suure aktiivravihaigla osakonnas näitas, et NNN-i kasutamine suurendas õdede kontrolli praktika üle ja parandas õendusdokumentatsiooni standardite järgimist; õed võtsid NNN-i kasutamise positiivselt vastu (Murphy jt, 2018). NNN-i rakendamine kogu haiglas algas 2014. aastal ja on nüüdseks lõpule viidud.

NNN-i kasutamist Iirimaal soodustas tõsiasi, et haiglad võtsid vastu hoolika õenduse filosoofia ja professionaalse õenduse mudeli, mis tugineb ajaloolisel uurimusel 19. sajandi õenduspraktikast Iirimaal (Meehan, 2019). 1820. aastatel andsid iiri õed õendusele uue tähenduse kvalifitseeritud avaliku teenusena ning mõjutasid väga palju Florence Nightingale'i õenduspraktikat Krimmi sõja ajal 1853–1856.

Hoolika õenduse filosoofia näitab ette, kuidas õed peaksid rakendama NNN-i: nad peavad olema rahulikud, lahked, kaastundlikud ja austama inimväärikust nii oma hoolealuste kui ka enese ja kolleegide puhul. Hoolika õenduse praktika sisaldab NNN-i, sest juba minevikus tuvastasid iiri õed õendusprobleeme, arendasid välja õendussekkumisi ja hindasid tulemusi. Seega oli nende praktika eelkäijaks tänapäevasele NNN-i arengule.

Alates esmakordsest tutvustamisest on veel kaheksa haiglat rakendamas või juba rakendab NNN-i kui hoolika õenduse osa. Oodates riigi e-tervise tutvustamist, on NNN-il põhinevad õenduslood paberil, kuid need on pandud ka elektroonsesse formaati.

Suurem osa õdedest võttis NNN-il põhinevad õenduslood positiivselt vastu, kuigi mõne õe jaoks osutus oma töö muutmine NNN-i järgi raskeks. NNN-il põhinevate õendushooldusplaanide tegemist juhib kindel kliinilise arengu koordinaator, kes tegeleb korraga ühes või kahes osakonnas. Ta keskendub igale osakonnale ühe või kahe kuu jooksul, et arendada koos sealsete õdedega välja NNN-il põhinevad õendushooldusplaanid, mis vastavad konkreetse osakonna patsientide profiilile ja vajadustele. Rakendamise efektiivsuse kontrollimiseks viiakse osakonnas läbi dokumentatsiooniauditid pärast seda, kui NNN on kasutusele võetud.

Õdede andmetel muudab NNN nende praktika läbipaistvaks nii neile endile kui ka teistele multiprofessionaalse meeskonna liikmetele; selle abil saavad nad mõõta ja jälgida patsiendi õendustulemusi ja -sekkumiste efektiivsust. Võrreldes varasema dokumenteerimisviisiga vähendab NNN aega, mis kulub õendusdokumentide vormistamisele. NNN-i abil säästetud aega saavad õed kasutada toetava ja terapeutilise suhte loomiseks patsientidega.

Võrreldes riigi keskmisega on NNN-il põhinevate õendushooldusplaanide tulemusel ühe haigla õendushoolduse kvaliteet tõusnud 12 kuu jooksul 11% (Donohoe ja Dooley, 2017). Sarnaseid tulemusi on saadud ka teistes haiglates. Positiivse tulemusena on NNN-i kasutuselevõtt haiglates äratanud ka õenduskoolides huvi NNN-i ja selle kasutamise õpetamise vastu.

Sellest hoolimata on Iirimaal NNN-i rakendamisel jätkuvalt väljakutseid.

NNN-i esialgseks rakendamiseks on kõigepealt vaja, et haiglal oleks olemas vajalikud ressursid või et haigla leiaks rahastuse, mis toetaks hoolika õenduse / NNN-il põhineva praktika arendamist ajaperioodiks, mis kulub kõikidel haigla osakondadel NNN-i efektiivse kasutamise juurutamiseks.

Tavaliselt domineerib haiglate õenduspraktikas biomeditsiiniline mõtlemine. Kuigi tunnustatakse biomeditsiinilise ravi tähtsust ning õdede koostööd arstiteaduse ja teiste tervishoiu valdkonna töötajatega, nõuab hoolikas õendus / NNN, et õed „mõtlevad õendusele" ning tunnetavad ja väärtustavad just õendusele iseloomuliku professionaalse teenuse pakkumist. Selleks, et hoolika õenduse / NNN-i mõtteviisi kasutusele võtta, tuleb unustada mõned vanamoodsad õdede mõtlemisviisid. Muutus võtab aega ja võib mõne õe jaoks tähendada meeletut võitlust.

NNN-il on suur osatähtsus tervishoiuteenuste pakkumise liikumisel haiglatest enam kodudesse ja esmatasandi tervishoidu. Välja tuleb töötada sellised NNN-il põhinevad õendushooldusplaanid, mis kirjeldavad õdede toetavat rolli patsientide siirdumisel haigla aktiivravilt kodudesse ja kogukondadesse, kus patsiendid jätkavad oma tervise eest hoolitsemist. Õenduse planeerimine ja hindamine NNN-ist lähtudes aitab neid probleeme positiivselt lahendada.

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DOI: 10.1111/jonm.12542 (21.10.2019).

Experiences, outcomes and challenges implementing NNN in Ireland

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NANDA-I nursing diagnoses (Herdman & Kamitsuru, 2018), Nursing Outcomes Classification (Moorhead et al., 2018), and Nursing Interventions Classification (Butcher et al., 2018) (NNN) were primarily introduced to nursing practice in Ireland in 2009. An exploratory implementation study on one ward at a major acute hospital demonstrated that use of NNN increased nurses' control over their practice and adherence to nursing documentation standards, and that nurses perceived use of NNN positively (Murphy et al., 2018); hospital-wide implementation commenced in 2014, and is now complete.

Use of NNN in Ireland is driven by hospitals' adoption of the Careful Nursing Philosophy and Professional Practice Model (Careful Nursing), which is based on historical research documenting the practice of early 19th-century Irish nurses (Meehan, 2019). These nurses re-formulated skilled nursing as a public service in Ireland in the 1820s, and were a significant influence on Florence Nightingale and nursing practice at the Crimean War of 1853–1856.

The Careful Nursing philosophy serves as a guide for nurses to implement NNN, that is, with calmness, kindness, compassion, and respect for the inherent human dignity of the people they care for, for themselves, and for one another. NNN is embedded in Careful Nursing practice because the early Irish nurses identified nursing problems, developing nursing interventions, and assessed outcomes; their practice foreshadowed the contemporary development of NNN.

Following the first introduction of NNN, eight additional hospitals are in the process of, or have completed, implementing NNN as part of Careful Nursing. In anticipation of the introduction of a national eHealth record, NNN-guided nursing care plans are initially paper-based, transition into an electronic format.

Experiences in implementing NNN-guided care-planning are positive for most nurses, although some nurses find the adjustment to NNN challenging. Implementation of NNN-guided care planning is guided by a designated clinical development coordinator, and takes place within one or two wards at a time. Each ward is specifically focused on for one or two months, and the ward nurses develop a suite of NNN-guided care plans appropriate for patients on the given particular type of ward. As NNN is implemented, ward documentation audits are conducted to examine implementation effectiveness.

Nurses report that NNN makes their practice clearly visible to them and to other members of the multi-professional team; it allows them to measure and track patients' nursing outcomes and the effectiveness of nursing interventions. NNN reduces the time nurses spend documenting their practice relative to previous written documentation. The time saved using NNN is utilised by nurses to engage in supportive, healing relationships with patients.

Outcomes of NNN-guided care planning include an 11% average increase in national nursing quality care planning metrics over a 12-month period in one hospital (Donohoe & Dooley, 2017), and similar increases in metrics are reported in other hospitals. As an additional positive outcome, the hospital-driven use of NNN has generated wider interest from nursing schools in the instruction of NNN and NNN-guided care planning.

Nevertheless, there remain ongoing challenges with implementing NNN in Ireland.

For the initial implementation of NNN, it is necessary for a hospital to obtain, or have access to, appropriate funding to support a Careful Nursing/NNN practice development position for the period of time it takes for all hospital wards to implement the use of NNN effectively.

Biomedical thinking usually dominates nursing practice in hospitals. In recognising the importance of biomedical care and collaboration between nurses, medical researchers, and other health professionals, Careful Nursing/NNN requires that nurses "think nursing" and recognise and value that distinctive professional service that nursing provides. Some old ways of thinking by nurses must be unlearned to make way for Careful Nursing/NNN practice. Adjusting to this change takes time, and can be a demanding struggle for some nurses.

NNN has an important role to play in the movement of most healthcare provision from hospitals to homes and communities. NNN-guided care plans must be developed to demonstrate nursing's supportive role in the transition of patients from acute hospitals back to their homes and communities for on-going effective health maintenance. NNN-guided nursing care planning and evaluation has the capacity to meet these challenges.

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Hindamise küsimus – Marjory Gordoni Funktsionaalse Terviseseisundi Hindamise (1982) rakendamine patsientide vastuvõtul

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Mater Misericordiae University Hospital (MMUH) on 580 voodikohaga õpetav 4. taseme haigla, mis pakub kogu riigile spetsialistide teenuseid Dublini kesklinna põhjaosas. MMUH kuulub Iirimaa idahaiglate gruppi (*Ireland East Hospital Group*), osutades tervishoiuteenust enam kui 1,1 miljonile patsiendile aastas. „Meie visioon on olla juhtpositsioonil innovatsioonis, kvaliteetse ravi paremaks muutmises ja patsientide jaoks tipptasemel tervishoiu pakkumises" (Doing What …, 2018). Visiooni saavutamiseks ja tervishoiupoliitika järgimiseks õendushoolduses võeti vastu tähtis otsus rakendada hoolika õenduse filosoofiat ja professionaalse õenduse mudelit (*Careful Nursing Philosophy and Professional Practice Model*©).

Tervisedeterminandid, nagu rahvastiku vananemine, sellega kaasnevate haiguste sagenemine ja keerulisemad väljakutsed tervishoius vajavad õenduslikku hindamist, mis on arusaadav ja keskendub üksikisiku spetsiifilistele vajadustele. Hoolika õenduse filosoofia ja professionaalse õenduse mudeli põhimõtetest lähtudes tuli tegeleda kompetentse ja tipptasemel õenduspraktika nimel. „Jälgimine – hindamine ja äratundmine", kliiniline järeldamine ja otsuste tegemine, patsientide kaasamine eneseabisse ning diagnoosid, sekkumised ja tulemused võimaldasid õdedel näidata oma enesekindlust ja kompetentsi terviseseisundi hindamisel kriitilist mõtlemist ja kliinilist otsustamist kasutades.

Traditsiooniliselt kasutati hindamisel süsteemset lähenemist, mis kaldus pigem meditsiinilise diagnoosi määramise poole kui inimvastuse või „õendusele iseloomuliku panuse poole haigete, vigastatute ja nõrkade eest hoolitsemisel" (Meehan, 2019). Õenduslikku hindamist nähakse pigem dünaamilise, mitte staatilise viisina subjektiivsete ja objektiivsete andmete kogumisel. Õendusprotsessi defineeris ja arendas Ida J. Orlando 1958. aastal: protsessi käigus tuvastatakse patsiendi andmetest tulenevad tunnused ja seonduvad tegurid, mis võimaldavad õdedel kriitilise mõtlemise ja kliinilise otsustamise abil koostada patsiendikeskne õendushooldusplaan.

Patsiendi terviklikuks hindamiseks koostati hoolika õenduse dokument patsientide vastuvõtuks (*Careful Nursing Admission Document*), mis tugines Gordoni (1994) Funktsionaalse Terviseseisundi Hindamise raamistikul (esmakordselt publtseeritud 1982). See tunnistati kõige sobivamaks hindamise raamistikuks, sest see on õendus-spetsiifiline, terviklik, prioritiseerib patsiendi ohutust ja koondab andmeid, mis on vajalikud kvaliteetse õendusabi parendamiseks. Hea õendusabi sõltub kogutud info kvaliteedist (Urquhart jt, 2018). Õdedena oleme meie esimesed andmekogujad patsiendi raviteekonnal. Hindamise struktureeritud ja süstematiseeritud raamistiku tähtsustamine õenduses soodustab patsientide kaasatust ning kujundab õe ja patsiendi vahelist terapeutilist suhet raviteekonna jooksul. Raamistik võimaldab kasutada NANDA-I õendusdiagnoose (Herdman ja Kamitsuru, 2018), õendussekkumiste klassifikatsiooni (Butcher jt, 2018) ning õendustulemuste klassifikatsiooni (Moorhead jt, 2018). Standarditud õenduskeel (SNL – *Standardised Nursing Languages*) on tänu tõenduspõhisele praktikale avaldanud parendavat mõju patsiendi tulemustele, ohutusele ja õendusabi kvaliteedile ning on ühtlasi kooskõlas Iirimaa e-tervise stateegiaga (eHealth Strategy …, 2014).

Põhjalikku hindamist läbi viies õpib õde arendama ja kasutama kriitilist mõtlemist ning kliiniliste järelduste ja otsuste tegemist. Kliiniliste järelduste tegemine näitab õe oskust analüüsida nii objektiivseid kui ka subjektiivseid patsiendi andmeid ning seada prioriteedid patsiendile sobiva õendusdiagnoosi valikul (Herdman ja Kamitsuru,

2018). Oluline on tähele panna, et kliiniliste järelduste tegemine sõltub õe kogemusastmest. Spetsiifilistes osakondades saavad õed kogemusi jätkuva õppimise, mentorluse, taju ja täiendava eriala-koolituse abil, mis arendavad neid kasutama oma töös „kõrgemal tasemel mõtlemist". Näiteks võib intensiivraviosakonna patsiendi seisund järsult muutuda, mis eeldab kiiret otsustusvõimet. Kogenud õde saab andmed patsiendi kiirel vaatlusel, s.o „patsiendi voodi kõrval teda pealaest jalatallani hinnates". Andmeid analüüsides tuvastab ta patsiendi seisundi halvenemise, tuginedes oma „kõhutundele" või „intuitsioonile" (Benner, 1984). Abi suurendamiseks informeerib ta samal ajal ka vastavaid tervisemeeskonna liikmeid.

Patsiendi „jälgimine" kas varjatud või ilmselgete sümptomite märkamise eesmärgil tähendab, et õde peab täielikult valdama patsiendi hindamise kunsti. Patsiendi terviseseisundi uuesti hindamine ja pidev „jälgimine" on raviprotsessis ülioluline. Õed peavad koguma andmeid kiiresti, vahendama neid efektiivselt ja samal ajal tegutsema vastavalt plaanile – sellest sõltub väga tihti patsiendi elu või surm.

Õenduslik hindamine MMUH-is on kujundatud nii, et see võimestab patsiente osalema enese eest hoolitsemises. Patsiente julgustatakse olema aktiivsed oma ravi puudutavate otsuste tegemisel. Lisaks õige ravimeetme valimisele aitab patsiendilt saadud informatsioon õdedel leida vajalikke suuniseid patsiendi eest hoolitsemisel, aidates ühtlasi kaasa terapeutilise suhte loomisele õe ja patsiendi vahel. Õedena saame tihti teada väga isiklikke detaile inimese elust. Seda silmas pidades on Marjory Gordoni Funktsionaalse Terviseseisundi Hindamise (Gordon, 1994) kasutamine abiks õendusliku hindamise uuendamisel. Õed on tunnetanud, et nad on oma patsiente põhjalikumalt tundma õppinud, kirjeldades seda muu hulgas selliste narratiividega nagu *„hindamine on vägagi patsiendile fokusseeritud"*, *„nii õpin ma oma patsienti palju paremini tundma"* ja *„see tundub rohkem nagu vestlus, mitte aga küsimuse esitamine küsimuse järel"*.

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The Mater of Assessment – an implementation of Marjory Gordon's Functional Health Patterns (1982) for patient admission

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The Mater Misericordiae University Hospital (MMUH) is a 580- bedded level 4, teaching hospital located in Dublin's north inner city centre, providing specialist services at a National level. The MMUH is part of the Ireland East Hospital Group, serving over 1.1 million patients per year. "Our Vision: is to be a leader in innovation, quality care improvements and delivering excellence in care as perceived by our patients" ('Doing What …, 2018). To achieve this vision and align nursing care with healthcare policy, a key decision was made to implement Careful Nursing Philosophy and Professional Practice Model©.

Health determinants such as an aging demographic, increasing comorbidities, and more complex health care challenges require a Nursing assessment that is clear and focussed on the specific needs of the individual. To capture the principles of the Careful Nursing Philosophy and Professional Practice Model©, it was necessary to look within the Practice Competence and Excellence Dimension. The "Watching – Assessment and Recognition", Clinical Reasoning, and Decision-Making, Patient engagement in self-care and Diagnosis, Interventions and Outcomes enabled nurses to show confidence and competence within their assessment using critical thinking and clinical judgement.

Traditionally, assessment utilised a systems approach which strove more towards a medical diagnosis rather than the human re-

sponse or "nursing's distinctive contribution to the care of sick, injured and vulnerable people" (Meehan, 2019). Nursing Assessment is seen as a dynamic, rather than static, way of collecting subjective and objective data. The Nursing Process was defined and developed by Ida, J. Orlando in 1958. It recognises cues and inferences that are drawn from patient data, enabling the Nurses ability in critical thinking and clinical reasoning to develop a person-centred plan of care.

To obtain a comprehensive assessment, a Careful Nursing Admission Document was designed around Gordon's (1994) Functional Health Patterns (first published in 1982). The assessment framework was deemed to be the most appropriate because it is nursing-specific, comprehensive, prioritises patient safety, gathering data necessary for enhancing quality care. The delivery of good nursing care depends upon the quality of information collected (Urquhart et al, 2018). As nurses, we are the primary data collectors throughout the patients care journey. The importance of a structured, systematic framework for nursing assessment encourages patient engagement, evolving the nurse-patient therapeutic relationship during the patients care journey. It enables the nurse to use Nursing Diagnoses (NANDA-I) (Herdman & Kamitsuru, 2018), Nursing Intervention Classification (Butcher et al., 2018) and Nursing Outcome Classification (Moorhead et al., 2018). Standardised Nursing Languages (SNL) have been shown to improve patient outcome, quality and safety through evidence-based practice whilst also aligning to the eHealth Strategy for Ireland (2014).

A thorough assessment allows the nurse to develop and use critical thinking, clinical reasoning, and clinical judgement. The use of clinical reasoning demonstrates the nurse's ability to analyse the data, both objective and subjective, and place priority in selecting the appropriate nursing diagnosis for the patient (Herdman & Kamitsuru, 2018). It is important to note that clinical reasoning is dependent on the level of experience of the nurse. Within speciality wards, nurses gain experience through continuous learning, mentoring, preceptorship,

and further specialist education therefore developing a "higher thought" approach to their care. Within a Critical care setting, a patient's condition may change rapidly and require instant decision-making capabilities. The experienced nurse will gather information through a quick visual of the patient; an "end of bed, head-to-toe assessment". The nurse will analyse this data recognising a deterioration in the patients' condition based on "gut instinct" or "intuition" (Benner, 1984). It is at this point that the Nurse will inform the appropriate healthcare colleagues to escalate patient care.

"Watching" a patient for signs, whether subtle or more obvious, requires the Nurse to understand the full range of skilled assessment of the patient. As part of the patients journey re-assessment is paramount and designed to continuously "watch" the patient at all times. Nurses gather data quickly; communicate this data effectively, whilst implementing a plan very often dependent on life and death scenarios.

Our Nursing Assessment in the MMUH is designed to empower patient engagement in self-care. Patients are encouraged to take an active role in decisions relating to their treatment. Information that is gathered at admission is essential not only to determine, but to guide our patient care and to develop the nurse-patient therapeutic relationship. As nurses, we are very often provided with the most intimate details of a person's life. With this in mind, using Marjory Gordon's Functional Health Patterns Framework (Gordon, 1994) supports our new Nursing Assessment. Nurses have felt a greater depth to knowing their patients with narratives including *"the assessment is very patient focussed", "I get to know my patients so much better", and "it feels more like a conversation than question after question".*

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Tehnoloogilised uuendused toovad kaasa igapäevase personaal- ja täppismeditsiini rakendamise ning ravikvaliteedi tõusu

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Vereproov ehk vedelbiopsia on tänapäeval piisavaks materjaliks, et mitteinvasiivselt tuvastada patsiendil tuumor ja seda iseloomustada või kõrge täpsusega analüüsida loote kromosoomhaigusi lapseootel naisel. Vereproov sisaldab rakkudest väljas olevat DNA-d (*deoxyrib-onucleic acid*) ehk rakuvaba DNA-d, mis vabaneb rakkude program-meeritud surma ehk apoptoosi või nekroosi tagajärjel. Rakuvaba DNA on vereringes teel neerudesse ja maksa, kus see lagundatakse ja suunatakse organismis taaskasutusse. Oma teekonna käigus veres kannab rakuvaba DNA informatsiooni oma päritolu ja koostise kohta. Näiteks sisaldab tuumorist pärit rakuvaba DNA kasvajale omaseid DNA mutatsioone ja nekrootiliselt hukkunud rakkude spetsiifilist DNA mustrit. Raseda vereproov sisaldab 5–20% ulatuses platsentast pärit rakuvaba DNA-d, millel on loote päritolu. Seega, kui lootel peaks esinema kromosoomhaigus, näiteks Downi sündroom, siis vereproov ja rakuvaba DNA seda ka peegeldab (Krjutškov, 2016).

Rakuvaba DNA analüüsiks peab vereproovi võtma katsutisse, mille koostis pärsib rakkude edasist lagunemist ja omavahelist kleepumist. Kui veri võtta lilla korgiga K3-EDTA katsutisse, siis saab seda kvaliteet-selt analüüsida kuni 12 tunni jooksul. Kauem kestev viivitus või vere-proovi transport vajab katsutis spetsiaalset stabiliseerimiskemikaalide kokteili, mis stabiliseerib rakud pikemaks ajaks (päevadeks). Need kokteilide koostised on ärisaladused ja patenteeritud. Praegu pakuvad spetsiaalseid katsuteid firmad BD, Streck ja Roche (katsutid on veebis leitavad otsingusõnaga *Circulating Cell-Free DNA Blood Collection Tube*).

Tänapäeval kasutatakse rakuvaba DNA-d laialdaselt mitte-invasiivses sünnieelses loote kromosoomuuringus (*NIPT – Non-invasive Prenatal Testing*), kus ema vereproovist saab peaaegu 100-protsendilise täpsusega tuvastada enamlevinud kromosoomhaigused, nagu Downi, Edwardsi, Patau ja Turneri sündroomid (Žilina jt, 2018). Lisaks saab määrata näiteks loote sugu eksimatult juba 10+ rasedusnädalal. Aasta pärast seda, kui NIPT-analüüs käivitus Eestis Tervisetehnoloogiate Arenduskeskuse (Tervise-TAK) Täppismeditsiini laboris, on kuni 10 % kõikidest sündidest NIPT-testiga kaetud. Eelkõige kasutatakse testi esimese trimestri riikliku sõeluuringu täiustamiseks ning stressi ja riskiga seotud invasiivsete looteuuringute vältimiseks. Täppismeditsiini rakendus NIPT-i näol on jõudnud kõikidesse Eesti maakondadesse, kokku enam kui 30 kliinikusse. Enim on esimese aasta jooksul NIPT-testi tehtud Saaremaal, kus 30 protsenti kõikidest sündidest on analüüsitud täppismeditsiini sõeluuringuga. Järgnevad Hiiumaa, Tartumaa, Pärnumaa ja Võrumaa vastavalt 13, 11, 9 ja 8 protsendiga. Esimese aasta statistika näitab, et patsiendid ja naistearstid/ämma-emandad hindavad kõrgelt täppismeditsiini testi kättesaadavust väljaspool Tallinna ja Tartut, et tagada võimalikult kvaliteetne meditsiini-teenus kõikjal üle Eesti.

Tartu Ülikooli Lastefond viis 2018–2019 läbi uuringu, mille käigus toetati NIPT-testi 132-le kõrge ja keskmise riskiga rasedale. Testimise tulemusel selgus, et 91 protsendil juhtudest oli riiklik esimese trimestri loote kromosoomhaiguste sõeluuring hinnanud kromosoomhaiguse esinemise riski kõrgeks ja suunanud patsiendi invasiivsele protse-duurile. Sellegipoolest ei kinnitanud NIPT-test 91% juhtudel, et loode oli tegelikult terve (Lastefondi toel ..., 2019). Patsientidele, kellel NIPT tuvastas kromosoomhaigusega loote, teostati täiendav diagnostiline invasiivne uuring, mis kinnitas, et NIPT ei olnud raporteerinud ühtegi valepositiivset tulemust kromosoomides 13, 18 ja 21. Samuti ei ole seni teadaoleva informatsiooni põhjal esinenud ühtegi NIPT-i vale-negatiivset tulemust patsientidel, keda on analüüsitud Tervise-TAK

Täppismeditsiini laboris. Kokku on Tervise-TAK teostanud enam kui tuhat NIPT-analüüsi ning raporteerinud 13 kromosoomhaigust ning 5 juhuleidu kromosoomides 15 ja 16. See on naistearstile oluline informatsioon, mis aitab jälgida raseduse kulgu.

Kokkuvõtteks, täppismeditsiini NIPT-test on jõudnud kõikidesse Eesti maakondadesse, et pakkuda tulevastele emadele nende kodukohas äärmiselt kõrge täpsusega vereproovipõhist loote kromosoomhaiguste sõeluuringut. Patsiendid ja arstid/ämmaemandad on testi positiivselt vastu võtnud ning soovitavad NIPT-testi enamikus naistekliinikutes, sh Ida-Tallinna Keskhaiglas, Lääne-Tallinna Keskhaiglas, Pärnu Haiglas, Kuressaare Haiglas, Lõuna-Eesti Haiglas jm. Haigekassa täna NIPT-testi ei kompenseeri ja patsiendid peavad selle eest ise tasuma. Erandiks on TÜ Kliinikumi patsiendid, kelle NIPT-testi korvab TÜK Lastefond. Samuti kompenseerib NIPT-testi kõrge ja keskmise riskiga rasedatele Saare vald.

Huvide deklaratsioon: Kaarel Krjutškov töötab Tervise-TAK-is Täppismeditsiini labori juhatajana. Labor pakub kommertsiaalset täppismeditsiini NIPT-testi nimega NIPTIFY ja personaalmeditsiini testi nimega beREADY. Mõlemad teemad on ettekandes esindatud.

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Technological innovations will lead to implementation of daily personalised medicine and precision medicine, and increase in quality of care

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Blood sample or liquid biopsy has enough material nowadays to identify a tumour in a patient non-invasively, and to characterise it, or to analyse chromosomal conditions in fetus in a pregnant woman with high precision. Blood sample includes DNA (deoxyribonucleic acid), which is located out of cells or cell-free DNA, which is released after the programmed death of cells or apoptosis or due to necrosis. Cell-free DNA is in blood circulation on its way to kidneys and liver, where it is lysed and directed to reuse by the organism. On its way in blood, the cell-free DNA carries information about its origin and composition. For instance, cell-free DNA from a tumour consists of tumour-specific DNA mutations and specific DNA pattern of cells, which have died in a necrotic way. DNA of a pregnant woman consists of 5-20% cell-free DNA from placenta, which has an origin of a fetus. Therefore, should a fetus have a chromosomal condition, such as Down syndrome, then blood sample and cell-free DNA reflect it (Krjutškov, 2016).

To analyse cell-free DNA, the blood sample should be taken into a special blood collection tube, which composition inhibits further lyse of cells and particles sticking to each other. If to take a blood sample into the K3-EDTA blood collection tube with purple lid, it can be analysed in high-quality in up to 12 hours. Delay lasting longer or transportation of the blood sample needs a special stabilising coctail of chemicals in the tube, which stabilises the cells for longer period of time (for days). Composition of these coctails are commercial secrets, and are patented. Today there are special tubes, which can be found with search terms "*Circulating Cell-Free DNA Blood Collection Tube*", and are provided by companies like BD, Streck and Roche.

Nowadays, cell-free DNA is widely used in non-invasive prenatal screening method for chromosomes (NIPT – Non-invasive Prenatal Testing), in which blood sample of the mother allows to identify most common chromosomal abnormalities with almost 100% accuracy, such as Down, Edwards, Patau and Turner syndrome (Žilina jt, 2018). In addition, for example the sex of the foetus can be determined unmistakably already on 10+ gestational weeks. A year after the analysis of NIPT test was launched in Estonia Precision Medicine laboratory of the Competence Centre on Health Technologies (CCHT), up to 10% of all the births have been covered with NIPT test. Most of all NIPT test is used for improving national first trimester screening and to avoid invasive fetal procedures related to stress and risk. Implementation of precision medicine on an example of NIPT test has reached all Estonian counties, more than 30 clinics. Most of all NIPT test has been performed in Saaremaa during the first year, where 30% of all births have been analysed with precision medicine screening. Following Hiiumaa, Tartumaa, Pärnumaa and Võrumaa in accordance to 13, 11, 9 and 8 percentage. Statistics for the first year demonstrates that the patients and gynecologists/midwives highly value availability of precision medicine test outside Tallinn and Tartu, to provide the clients with as quality medical care as possible everywhere all over Estonia.

Tartu University Hospital Children's Foundation conducted research in 2018–2019, during which NIPT test was supported to 132 women of high and medium risk pregnancy. As a result of testing it was found that in 91% of the cases the national, first trimester screening for fetal chromosomal abnormalities had evaluated the risk of incidence high and referred the patient to invasive procedures. NIPT test however, did not confirm it in 91% of the cases and the foetus was

actually healthy (Lastefondi toel …, 2019). Patients with NIPT identification of fetal chromosomal abnormalities were provided with additional diagnostic invasive examination, which confirmed that NIPT had not reported any false positive results in chromosomes 13, 18 and 21. Also as far as the information goes, there have been no NIPT false negative results in a patient, who has been analysed in CCHT Precision Medicine Laboratory. Altogether, CCHT has performed more than a thousand NIPT analyses and reported 13 chromosomal disorders and 5 random findings in chromosomes 15 and 16, which is relevant information for the gynaecologist to observe the course of pregnancy.

In conclusion, precision medicine NIPT test has reached all Estonian counties to provide the future mother with a blood sample-based screening for fetal chromosomal abnormalities in high accuracy rate without leaving their locality. Patients and doctors/midwives have positive welcomed the test and recommend NIPT test in most women's clinics, incl. at East-Tallinn Central Hospital, West Tallinn Central Hospital, Pärnu Hospital, Kuressaare Hospital, South-Estonian Hospital etc. Cost of NIPT test is currently not covered by Haigekassa (Health Insurance Fund) and the patient have to pay for it themselves. With an exception of Tartu University Hospital's patients, whose NIPT test is paid by TUH Children's Foundation. Also, for women with high and medium risk pregnancies, NIPT test is compensated in Saare municipality.

Declaration of interests: Kaarel Krjutškov works as a Head of Precision Medicine Laboratory in the *Competence Centre on Health Technologies*, which offers precision medicine NIPT test called NIPTIFY and personalised medicine test called beREADY. Both topics have been presented in the presentation.

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Jätkusuutlik tipptehnoloogiline õppe- ja töökeskkonna arendus

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Tervishoiusüsteemi arenguid mõjutav taust ja trendid näevad vastavalt „Eesti tervishoiu arengusuundadele 2020" ette uue, spetsiifilist kompetentsi nõudvate, kuid samas efektiivsete ja patsienti säästvate meditsiinitehnoloogiate arengut (Eesti Tervishoiu …, 2014). Tehnoloogia kasutus tervishoiu valdkonnas on viimastel aastatel märkimisväärselt suurenenud. Jätkuvalt on suund õendustöötajate pädevuse maksimaalsele rakendamisele ja iseseisva õendusabi teenuste arendamisele, mis omakorda toob kaasa IT- ja innovatiivsete lahenduste enama kasutamise kohustuse. Eeltoodu põhjal võib väita, et antud muudatused tingivad olukorra, kus tööandjad, tervishoiu erinevad valdkonnad, tehnoloogia arendajad ning hariduse edendajad on omavahelises sõltuvuses. Uuenevate vajaduste jätkusuutlik areng eeldab tihedat koostööd valdkondade üleste lahenduste väljatöötamisel, arendamisel ja rakendamisel.

Vastavalt Tallinna Tervishoiu Kõrgkooli arengukavale (Arengukava 2017– …, 2017) on kõrgkooli missiooniks koolitada tervise valdkonnas innovaatiliselt ja kriitiliselt mõtlevaid tehnoloogiliste pädevustega töötajaid. Eesmärgi saavutamisel on üks peamisi prioriteete jätkusuutlik tipptehnoloogiline õppe- ja töökeskkonna arendus. Kõrgkooli tugevustena selles protsessis on välja toodud nii tipptehnoloogilise õppetaristu olemasolu kui ka võimekus arendada ja edendada õpet regionaalselt, mis omakorda seab kõrged nõudmised nii õppekava arendamisele kui ka õppetegevuse kavandamisele.

Eesti-sisesed regionaalsed arenguerinevused on üsna suured ja seetõttu on regionaalpoliitikal kaalukas roll piirkondliku arengu edendamisel ning piirkondlike arenguerinevuste vähendamisel. Nende väljakutsetega toimetulekuks püütakse leida lahendusi, mis tagaksid tervishoiusektori jätkusuutlikkuse, kättesaadavuse ja kvaliteedi ning parandaksid seda (Eesti regionaalarengu …, 2014). Toimetuleku ühe võimalusena nähakse tervishoiusüsteemi erinevate info- ja kommunikatsioonitehnoloogiate ulatuslikumat kasutamist ka õenduse valdkonnas.

Mitmete teiste autorite uurimused toetavad antud seisukohti. Kaye (2016), Rutledge jt (2017) ning Elliott jt (2018) näevad infotehnoloogia arendamises võimalust oluliselt parandada kogu õendusprotsessi tervikuna. Patsiendi terviseandmete süsteemsel kogumisel, automatiseerimisel ja tõlgendamisel paraneb andmete haldamise ja levitamise kvaliteet ning samaaegselt väheneb õdede töökoormus. Jeleč jt (2016) ning Barnoy jt (2018) on seisukohal, et tänapäevase tehnoloogia rakendamine õendustöös suurendab õendusabi efektiivsust, muutes samaaegselt selle toimimise printsiipe ja laiendades tervishoiuteenuse haardeulatust. Samuti on õed ise rõhutanud digioskuste osatähtsust hariduses, kuna sellised oskused aitaksid neid igapäevatöös ja uute süsteemide juurutamise protsessis (Öberg jt, 2017; Cho jt, 2018). Seetõttu on tänase õendushariduse lahutamatuks osaks õppekeskkonna innovaatilisus ja tehnoloogiale orienteeritus (Risling, 2017; Williamson ja Muckle, 2018; Bodur jt, 2019). Õdede koolitajad on aga kohustatud otsima võimalusi, kuidas kaasata üliõpilasi nendesse muutustesse tervishoius.

Erinevad autorid on ühisel seisukohal, et digipädevuse ja e-tervise alaste teadmiste omandamine ei tohiks olla töökohapõhine. Jätkuvalt püsib vajadus integreerida õenduse õppekavadesse pädevuse omandamine tehnoloogia ja e-tervise valdkonnas. Palju on erinevaid seisukohti ja ettepanekuid, kuidas õpet teostada, kuid selge

lähenemisviis ja piiritletud pädevusnõuded siiski puuduvad. Ollakse kindlal seisukohal, et pädevuse vajadus tuleneb praktikast ja kindlasti peab arendamisse kaasama erinevate erialade inimesi, et ära kasutada nende kompetentsus antud valdkonnas, sest vaid sel viisil on võimalik anda suur panus tervishoiusüsteemide arengusse ja edendada hariduse kaudu innovatsiooni tervishoius (Rutledge jt, 2017).

Õppijate digipädevuse arendamiseks alustati 2016. aastal Tallinna Tervishoiu Kõrgkoolis – ASTRA projekti raames – tehnoloogiaõppe mooduli loomist. Kaardistusuuring viidi läbi tervishoiu valdkonnas õpetatavate digitehnoloogiate analüüsi tulemina. Sarnaselt kaardistati ära Eesti tervishoius rakendatavate digilahenduste ja tehnoloogiliste vahendite kasutusulatus.
Mooduli taustraamistiku koostamisel lähtuti järgnevatest kriteeriumitest:
- haridusvajaduse diagnoosimine e-tervise ja tervishoiutehnoloogia valdkonnas;
- haridusvajaduse eesmärkide formuleerimine;
- õppesisu kaardistamine ja organiseerimine ning struktuuri loomine;
- õppeprotsessi kujundamise analüüs;
- õppeprotsessi metodoloogiline kujundamine.

Selle alusel loodi arendatava tervishoiutehnoloogia mooduli raamistik, mille tulemusena valmis õenduse õppetoolis 2018. aasta sügissemestril uus õppeaine „Tervishoiutehnoloogia ja e-tervis", mis kuulub kliinilise mooduli kohustuslike õppeainete hulka. Antud õppeaines antakse ülevaade Eesti tervishoiu infosüsteemidest, tervishoiu dokumenteerimise lahendustest, tervishoiu telemaatikast ja telemeditsiinist, andme- ja küberkaitsest, meditsiiniseadmete ohutusest ning radioloogilistest uuringutest.

Koostöös TalTechiga arendatakse õppeainet ning juurutatakse võimekust rakendada simulatsioonikeskuses digiloo, digiretsepti ja

pildipanga funktsioone. Eri valdkondade lõimimine ühe kindla infovälja ja õppesüsteemi piires võimaldab jälgida digipädevuse arengut nii tervishoiu kui ka insenertehnoloogia vaatenurgast. Nguyen jt (2017) rõhutavad, kuivõrd oluline on tervishoiu ja infotehnoloogia valdkonna koostöö arendamise ja testimise etapil, sest see võimaldab tõhusalt toetada muudatuste funktsionaalsust kliinilise töö protsessis.

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Sustainable development of high-tech learning and working environment

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Current developmental background and trends are influencing healthcare system developments for 2020 and beyond. They are determining the development of new medical technologies which require specific skills and, at the same time, are effective and patient friendly (Eesti Tervishoiu …, 2014). Because of this, the use of technology in healthcare has increased significantly in recent years. There is a continuous trend towards maximising competence and implementation in nursing staff and to develop independent nursing care services, which in turn leads to a responsibility to use IT and other innovative solutions even more. In the light of the above, it can be stated that these changes lead to a situation where the employers, different fields of health care, technology developers, and education promoters are closely interdependent. Sustainable approaches to developer needs requires close cooperation in research, development, and implementation of cross-discipline solutions.

According to the Tallinn Health Care College Development Plan (Arengukava 2017– …, 2017), the training of innovative and critically thinking health professionals with technological competences is the mission of the College, and in order to achieve this goal, the sustainable development of high-tech technological learning and work environment is one of the main priorities. As the strength of the College in this process is in highlighting both the existence of high-tech technology infrastructure, as well as the ability and need to develop and promote learning regionally, which in turn places high demands on both curriculum development and planning of learning processes.

Regional development disparities in Estonia are quite large, and regional policy therefore has a strong role to play in promoting development and reducing these regional development disparities. These challenges will be tackled by finding solutions that would ensure and improve the sustainability, availability and quality of the healthcare sector (Eesti regionaalarengu …, 2014). One of the options for that management can be seen as the increased use of the different information and communication technologies of the healthcare system in the nursing field as well.

Several other authors support these views in their research papers. Kaye (2016), Rutledge et al. (2017) and Elliott et al. (2018) see the development of information technology as an opportunity to significantly improve the overall nursing process as a whole. Systematically collecting, automating, and interpreting patient health data improves the quality of data management and distribution, while also reducing the workload of the nurses. Jeleč et al. (2016) and Barnoy et al. (2018) consider the application of modern technology in nursing contributes to the efficiency of nursing care, while also changing the principles of its functional capacity and extending the scope of healthcare services. The nurses themselves have also stressed the role of digital skills in education which can help them in their daily work, and in the process of introducing new systems (Öberg et al., 2017; Cho et al., 2018).Therefore, innovation in the learning environment and the technology orientation (Risling, 2017; Williamson & Muckle, 2018; Bodur et al., 2019) is an integral part of modern nursing education. Educators of nurses are, however, obliged to seek ways to involve students in these changes in healthcare.

Various authors share the view that the acquisition of digital competence and e-health knowledge should not be workplace-based. The need to integrate the acquisition of skills in the technology and e-Health fields continues to be necessary in the nurses' curricula.

There are many different views and suggestions on how to conduct studies, but there is no clear approach, and no specific requirements for competency. There is a strong belief that the need for competence stems from practice, and it is certainly necessary to involve people of different fields in the development in order to apply their skills in this field. Only with this approach is it possible to meaningfully contribute to the development of healthcare systems and promote innovation in healthcare through education. (Rutledge et al., 2017).

In order to develop learners' digital competences, development of a technology learning module was launched in 2016 in the context of the Astra project at the Tallinn Health Care College. A mapping research was carried out as a result of an analysis of digital technologies instructed in the field of healthcare. Similarly, the scope of digital solutions and technologies used in Estonian healthcare was mapped. The background framework to this module is based on the following criteria:
- Diagnosis of the need for education on e-Health and Health Technology;
- The formulation of goals in educational needs;
- Mapping and organisation of learning content and creating a structure;
- Analysis of the design of the learning process;
- Methodological design of the learning process.

This led to the creation of a framework of health technology module to be developed leading to a new subject 'Healthcare Technology and e-Health' in the autumn semester 2018 in the Chair of Nursing. It is part of the mandatory subjects of a clinical module. A general overview of Estonia's health information systems, health documentation solutions, healthcare telematics and telemedicine, data protection and cyber security, and the safety of medical devices and radiological studies will be given within this subject.

In collaboration with Tallinn University of Technology, and in addition to the subject development, the ability to implement the digital health record, the digital prescription and the functions of image bank in a simulation centre is to be introduced. The integration of specific sectors within one information field and learning system will allow the monitoring and development of digital competences from a healthcare, as well as from an engineering-technological, perspective. Nguyen et al. (2017), underline the importance of cooperation in the field of healthcare and information technology at the development and testing phase to provide effective support for the functionality of the changes in the clinical working process.

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Projekt „eMed-PASS" – digitaalne farmakoloogia ja ravimimanustamise praktikapäevik õdede õppes

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Uurimistööde tulemused näitavad, et ravimivead on tervishoius sagedased ning ohustavad patsientide tervist ja turvalisust (Cottney ja Innes, 2015; Elliott jt, 2018). Ravimivigu teevad sageli õed ning tihti tulenevad need õdede ebapiisavatest teadmistest ja oskustest farmakoloogias ja ravimite manustamisel (Hewitt jt, 2015; Perri jt, 2015; Andersson jt, 2018). Ebapiisavad teadmised ja oskused võivad aga olla tingitud farmakoloogia ja ravimimanustamise – nii teooria kui ka praktika – puudujääkidest õdede põhiõppes (Bruus jt, 2014; Sulosaari jt, 2015). Et suurendada patsientide turvalisust tervishoius, on tähtis seda valdkonda arendada. Kõigest sellest ajendatuna algatati Tartu Tervishoiu Kõrgooli ja *Turku University of Applied Sciences*'i (Soome) eestvedamisel rahvusvaheline projekt „eMed-PASS" (*The eMedication Passport – cultural adaptation of learning tool for ensuring the development of medication competence of graduate nurses*) (EMED-PASS – ...). Ühtlasi osalevad projektis *P. Stradins Medical College University of Latvia* (Läti) ja *Kauno Kolegija / University of Applied Sciences* (Leedu).

Projekti „eMed-PASS" peamine eesmärk oli kohandada Soome õendusüliõpilaste kliinilise praktika käigus kasutatav farmakoloogia ja ravimimanustamise õppimist toetav digiõppevahend „Farmakoloogia ja ravimimanustamise praktikapäevik" (*e-Medication Passport*) Eesti, Läti ja Leedu õendushariduse ja tervishoiu kontekstile vastavaks.

Farmakoloogia ja ravimimanustamise õppe arendamise kaudu püütakse parandada õdede põhiõppe kvaliteeti ning seeläbi potentsiaalselt suurendada ravimi- ja patsiendiohutust Baltimaades ja Soomes.

„eMed-PASSi" projekti ühe tulemusena valmis eesti-, läti- ja leedukeelne õenduse eriala üliõpilaste digiõppevahend „Farmakoloogia ja ravimimanustamise praktikapäevik", mille eesmärk on toetada üliõpilast farmakoloogia ja ravimimanustamise õppimisel ning teadmiste ja oskuste omandamisel kogu õppeprotsessi vältel. Praktikapäevik kajastab õpiülesandeid, mis kaasavad nii farmakoloogia ja ravimimanustamise üldpõhimõtteid kui ka spetsiifilisi erioskusi. Ühtlasi sisaldab see multiprofessionaalse koostöö ning patsiendi õpetamise ja ravisoostumise toetamise ülesandeid. Kirjeldatud ülesandeid peavad üliõpilased sooritama kliinilise praktika käigus praktikajuhendaja vastutusel ja järelevalvel. Praktikapäeviku eestikeelse versiooni loomiseks kohandasid Tartu Tervishoiu Kõrgkooli õppejõud soomekeelse õppevahendi Eesti õendushariduse ja tervishoiu kontekstile vastavaks. Seejärel hindasid Tartu Tervishoiu Kõrgkooli 30 teise kursuse õendusüliõpilast ning 29 kliinilise õppepraktika juhendajat päeviku asjakohasust ja kasutatavust ühe kliinilise õppepraktika jooksul. Kasutatavuse kohta tagasisidet andes oli suur osa üliõpilasi seisukohal, et praktikapäevik eesmärgistab ja toetab farmakoloogia ja ravimimanustamise õppimist ning kliinilise praktika käigus teadmiste ja oskuste omandamist.

Nii üliõpilaste kui ka praktikajuhendajate sõnul sobib „Farmakoloogia ja ravimimanustamise praktikapäevik" õppevahendiks ning selles sisalduvad õpiülesanded aitavad tuvastada teadmisi ja oskusi, mida üldõde vajab. Lisaks leiti, et päeviku kasutamine on pigem lihtne, kuid õpiülesannete sõnastus on kohati ebaselge. Praktikajuhendajad tõid kasutamise takistusena välja ajapuuduse.

Digiõppevahend „Farmakoloogia ja ravimimanustamise praktikapäevik" toetab õendusüliõpilasi farmakoloogia ja ravimimanustamise

õppimisel ning teadmiste ja oskuste omandamisel kliinilise õppepraktika käigus. Parandada tuleb aga praktikapäevikus sisalduvate õpiülesannete sõnastust. Projekti lõpptulemusena soovitakse võtta kolmes Balti riigi kõrgkoolis kasutusele uudne farmakoloogiat ja ravimimanustamise õppimist ning teadmiste ja oskuste omandamist toetav digiõppevahend, mis eeldavasti parandab õenduse põhiõppe kvaliteeti, suurendades seeläbi ravimi- ja patsiendiohutust. Lisaväärtusena tõhustub rahvusvaheline koostöö Baltimaade ja Soome kõrgkoolide vahel.

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Project eMed-PASS – Digital Pharmacology and administering medications practical training diary in training of nurses

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There have been findings in research papers which indicate that the most common errors in healthcare are medication related, wherein the health and safety of patients is seriously threatened (Cottney & Innes, 2015; Elliott et al., 2018). Medication-related errors are often made by nurses and errors often derive from insufficient knowledge and skills on behalf of the nurses in pharmacology and administering medications (Hewitt et al., 2015; Perri et al., 2015; Andersson et al., 2018). Insufficient knowledge and skills may be caused by the lack of proper theoretical and practical studies on pharmacology and medication administration during nursing basic education (Bruus et al., 2014; Sulosaari et al., 2015). It is important to develop the field to improve patient safety in healthcare. Driven by all that an international project was launched under the lead of Tartu Health Care College and Turku University of Applied Sciences (Finland) eMed-PASS ("The eMedication Passport – cultural adaptation of learning tool for ensuring the development of medication competence of graduate nurses") (EMED-PASS – ...). In addition the P. Stradins Medical College University of Latvia (Latvia) and Kauno Kolegija / University of Applied Sciences (Lithuania) participate in the project.

The main objective of eMed-PASS project was to adjust the digital learning tool supporting the instruction of pharmacology and administering medications for clinical practical placement of nursing students in Finland's „e-Medication Passport" into the context of Estonian, Latvian and Lithuanian nursing education and healthcare. Quality of nursing education is being improved by training of pharmacology and administering medications, and therefore potentially to increase medication and patient safety in the Baltic countries and in Finland.

As one of the results of eMed-PASSi project digital learning tool in Estonian, Latvian and Lithuanian „e-Medication Passport" for nursing students was completed. The aim of the Passport is to support the student in the learning process of pharmacology and administering medications, and to achieve knowledge and skills. Instruction is recorded in the Passport, which consists of the general principles of pharmacology and administering medications as well as specific skills. At the same time, it includes the tasks of multiprofessional collaboration and patient instruction, and the support of compliance. The learning tasks outline should be completed by the student during clinical practical training under the observance and responsibility of the practice supervisor. In order to create the Passport in Estonian, the lecturers at Tartu Health Care College adjusted the tool in Finnish into the context of Estonian nursing education and healthcare. After that, the relevance and usability of the Passport was evaluated by 30 second year students of Tartu Health Care College, and 29 supervisors of clinical practical placement during period of one clinical placement. According to the feedback, majority of the students found the Passport targets and supports learning of pharmacology and administering medications and achievement of knowledge and skills during clinical practical placement.

Both the students and supervisors agree that the „e-Medication Passport" is suitable as a learning tool, and the tasks it consists of

help to identify knowledge and skills needed by general nurse. In addition, it was found that the use of the Passport is rather easy, but the formation of tasks can sometimes be unclear. The supervisors high-lighted a lack of time as an obstacle in using the Passport.

The digital learning tool „e-Medication Passport" supports nursing students in learning pharmacology and the administration of medica-tions and the instruction of knowledge and skills in clinical practical placement. The primary area for improvement is the formation of wording for the learning tasks. As a final result of the project, it is desired that three higher educational institutions in the Baltic states would use it as an innovative digital learning tool supporting pharma-cology and administering medications and achievement of knowledge and skills, which presumably improves the quality of nursing education and therefore improves the medication and patient safety. An added value is seen the improvement of international cooperation between the higher educational institutions of the Baltic states and Finland.

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Digitervise eduka rakendamise takistuste ületamine

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Tervishoid on kasvavas joones muutumas meditsiiniteadusest infoteaduseks. Digitaalsete tervisetehnoloogiate kasutuselevõtu kiirus erineb nii riikide ja tervishoiusüsteemide kui ka haiglate, väikeste kliinikute ja patsientide lõikes. NICE (*National Institute for Health and Care Excellence*) kirjeldab digitaalseid tervisetehnoloogiaid rakenduste, programmide ja tarkvarana, mida kasutatakse tervishoiusüsteemides ja mis võivad olla nii eraldiseisvad kui ka kombineeritud teiste toodetega, näiteks meditsiiniliste seadmetega või diagnoosimiseks vajalike testidega (Evidence Standards ..., 2019).

Tervishoiusüsteemid muutuvad pidevalt ja nende ülesehitus või korraldus sõltub kindla riigi või piirkonna poliitikast. Ajaloost leiab tervishoiuteenuste pakkumisel mitmeid selgepiirilisi mudeleid. 21. sajandi tervishoiusüsteemid sõltuvad aga üha rohkem digitaliseerimisest ning uute ravimudelite ja -protsesside rakendamisest, kuid tervishoiusüsteemid ei ole digitaliseerimise võimaluste rakendamises õnnestunud.

Digitervise edukaks kasutulevõtuks on meil vaja innovatsiooni rakendamise võimalustes selgust ja läbipaistvust, kuidas uusi ideid ellu viia. Me vajame tervishoiu innovatsiooni ökosüsteemi, mis võimaldaks probleemi lahendamise viia reaalsesse tervishoiu keskkonda. Tervishoiusüsteemid peavad tervikuna paremini mõistma, kuidas kiirendada praeguste tehnoloogiate kasutuselevõttu igapäevaselt.

Digitaalsed tehnoloogiad, mis aitavad tervishoiusüsteemidel

eesmärke saavutada, on juba loodud (laborites, pilootjuhtumite kujul, veebis), kuid praeguste tervishoiusüsteemide rahastusmudelid soosivad 20. sajandi tehnoloogiate rakendamist 21. sajandi tehnoloogiate asemel. Ent just 21. sajandi tehnoloogiad on need, mis aitavad jõuda paremate tulemuste ja kvaliteedini.

Ükskõik, kas soovite haiguste väljaselgitamiseks luua ennetava *screening*'u algoritmi, intelligentse tervise nõu rakenduse või suhtlusrakenduse, mis ühendab tervishoiutöötajaid patsientidega või meditsiiniseadmetega – igal juhul tuleb läbida palju samme, enne kui tehnoloogiad leiavad laialt rakendamist ja need on paljudele kättesaadavad. Takistusi, mida ületada, enne kui hea idee saab reaalse rakenduse, on palju.

Vajalike sammude läbimine saab alguse tehnoloogia loomisest, ent veelgi olulisem on see, mis pärast toimub. Vajalik on tervishoiutöötajate, sh õdede ja arstide ning patsientide kaasamine innovaatilise lahenduse testimise faasi – arendamiseks, testimiseks ja suhtluseks on vaja ressursse. Suuremal osal juhtudest tuleb luua lahendus, mida oleks võimalik kasutada olemasolevate digisüsteemide raames ja EHR-is. Samuti on vajalik, et lahendus kehtiks teatud kontekstis, st tuleb luua valiidsuskavandid uuringute läbiviimiseks ja mõju mõistmiseks, koostada esialgsed uuringud ning leida tervishoiutöötajad, kes on valmis uuringutesse panustama.

Tervishoius ei iseloomusta innovatsiooni kiirelt liikumine ja asjade lõhkumine. Isegi juhul, kui eelnimetatud sammud on edukalt läbitud, on vaja äriplaani – viisi, kuidas uut lahendust rahastada. See tähendab, et digiteenuste arendajad (ja teised osapooled) peaksid ette nägema teenuse arenduse teekonda: prototüüp –> pilootfaas ja valideerimine –> integreerimine avalikku tervishoiusüsteemi (andmed ja protsess) –> jätkusuutlik ja laiaulatuslik rakendamine.

TalTechi tervishoiutehnoloogia õppekava keskendub digitervise rakendamise toetamisele nendes etappides. Kuidas rakendada kasulikke ja väärtust lisavaid digitaalseid tervisetehnoloogiaid? See on peamine küsimus, mille endile esitame, kui õpetame erineva taustaga üliõpilastele, kuidas ületada innovatsiooni rakendamise takistusi.

Õppekava üliõpilaste hulgas on palju õdesid; näeme, et neil on kõige aktiivsem roll digitaalsete tervisetehnoloogiate rakendamisel. Me arendasime välja koostöömudeli TalTechi IT-osakonna ja Tallinna Tervishoiu Kõrgkooli õenduse õppekava vahel selleks, et anda üliõpilastele võimalus suhelda ning katsetada digitaalseid tervishoiulahendusi päriselu imiteerivas keskkonnas ja võimaldada õenduse üliõpilastel harjutada uusimate (vahel veel arenduses olevate) digitaalsete lahendustega.

Tallinna Tervishoiu Kõrgkooli simulatsioonikeskuses viime läbi innovatsiooniseminare, mis võimaldavad testida uusi lahendusi tervishoiu valdkonnas ja saada väärtuslikku tagasisidet. Samuti avaneb erinevate erialade üliõpilastel võimalus üksteiselt õppida, näiteks võib uut digirakendust testida intensiivravi simulatsiooni seminaris. Rakenduse arendajad saavad aga väärtuslikku tagasisidet juba enne, kui rakendus võetakse näiteks kasutusele haigla intensiivravi keskkonnas, ning õed õpivad tundma uusi lahendusi (oma tulevikutööriistu), aidates samal ajal kaasa arendustööle.

Digitaalse tervishoiutehnoloogia arendamise lõppeesmärk on jõuda avatud kultuurini, mis aitab kaasa sellele, et uued digitehnoloogiad on kasulikud ja neid ka rakendatakse. See keskkond soodustab vajalikku tihedat koostööd ja vastastikust õppimist. Kui pakume üliõpilastele võimalust kogeda koostööd innovatsiooni rakendamisel juba õpingute varases faasis, siis on meil ka parem väljavaade saada üliõpilaste lõpetamise ajaks valmis uued kaasaegsed digitaalsed lahendused.

Kokkuvõttes peaks tervishoiusüsteemi järgmist arengufaasi iseloomustama olukord, kus ollakse avatud muutustele ja osatakse muutusi juhtida. Seega peavad tervishoiusüsteemid – rohkem kui kunagi varem – pidevalt õppima ja kohanema. Simulatsiooni digitaliseerimise koostööprojekt on sellise õppimise ja kohanemisvõime üks alustalasid.

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Overcoming implementation barriers for successful digital health implementation

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Healthcare is increasingly shifting from being a field of medical science to being a field of information science. The pace of adopting digital health technologies varies a lot between countries, health systems, hospitals, small clinics and patients. NICE (National Institute for Health and Care Excellence) describes digital health technologies as apps, programmes and software used in the health systems. They may be standalone, or combined with other products such as medical devices or diagnostic tests (Evidence Standards ..., 2019).

Healthcare systems are subject to constant change and the structure of health systems depends on the policies of a specific country or a region. Throughout history, there have been rather clear-cut models of delivering healthcare. This has changed due to various global economic, cultural, technological and political trends. In the 21st century, health systems increasingly come to depend on digitalization and the implementation of new care models and processes. Despite this, not all healthcare systems have been able to fully adapt to the digitization trends yet.

In order to find ways for successful digital health adoption, we need clarity in innovation implementation pathways, there needs to be an increased understanding of how new ideas can come to life and can be implemented. We need a healthcare innovation ecosystem, which

enables to connect an idea of solving a problem to scaling this idea into real healthcare environment. Health systems on a whole need to understand how to better accelerate the adoption of current techno-logies into everyday use.

The digital health technologies that can be used to help achieve the goals of health systems are already here (in laboratories, pilot sites, online), but the financing models of current health systems are promoting the technologies of the 20th century, not the 21st. But 21st century models are the ones which incentivize and create better outcomes and quality, as they incentivize value.

Whether you want to build a preventive screening algorithm, intelligent health advice app, a communication app connecting health workers with patients, or diagnostic tools which help to detect specific diseases – in all cases you need to make a lot of steps before the techno-logies can be widely used and are available to many – there are many barriers to be overcome before a good idea actually comes into reality.

To take the first steps you have to build the technology, but what happens after is even more critical. There is a need to involve health care workers, nurses, doctors, and patients in the development and testing phase of technological innovation just as there is a need for proper funding of development, management, and communication. In most cases, you have to probably make the solution interoperable with existing digital systems and EHRs. There is also a need to validate solu-tions in specific care contexts. This means designing validation plans, conducting studies, understanding the impact and drafting research papers, but also to find health workers ready to put time into such studies.

Moving rapidly and recklessly is not appropriate for innovation in healthcare. And even if you are able to do all of the above at a quick pace, you also need to find a business model. A way to finance the new solution. This means that developers (and other market players) of digital health services should be able to foresee the pathway of the

service development from prototyping to piloting and validation, to integration with the public health system (data and process) and, finally, to sustainable, broad implementation.

The TalTech healthcare technology curriculum focuses on digital health implementation through all the relevant steps. How to imple-ment useful and value-bringing digital health technologies is the main question we are asking ourselves while teaching health care students with various backgrounds in order to overcome the barriers.

With many nurses as our students, we see that nurses will have the most active role in the implementation of digital health techno-logies. We have developed a cooperation model between the TalTech School of IT and the nursing curriculum at Tallinn Healthcare College in order to provide an opportunity for technology students to interact and pilot digital health solutions in a real-life-like environment, and enable nursing students to learn the use of the newest (and sometimes still in development) digital health solutions.

In the simulation lab at health care college, we are implementing innovation-cooperation seminars which enable us to test new solu-tions in healthcare environment, receive valuable feedback, but also enable students of different specialties to learn from each-other. E.g. a new digital app can be tested in an intensive care simulation seminar. The developers of the app get valuable feedback before going to actual intensive care environment and nurses already learn about new possi-bilities (their future-work tools) and can contribute to the development process.

The final goal is a culture of open-mindedness in terms of digital health technologies. This helps to influence new digital technologies to be useful and usable. The environment enables the close interaction and mutual learning needed. If we start learning how to cooperate in innovation implementation from each-other in the early phase of studies, then we have more luck to have up-to-date digital solutions in use when students graduate.

In general, the next development phase of the whole health systems should be a 'system of accepting change and managing that change'. So now even more than ever, healthcare systems need to be constantly learning and adapting. The simulation-digitalization cooperation project is one of the building blocks of such learning and adapting ability.

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Mis on Tervis 3.0 ja uued trendid e-tervises

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Meie tervishoiusüsteemide edu või ebaõnnestumine on suurel määral seotud e-tervise valdkonnas toimuvate arengutega. Ma usun väga, et tehnoloogiline innovatsioon ja sellega kaasnevad ärimudelid võivad üsna varsti oluliselt muuta patsientide elu ja arstide tööd. Tuleviku mõistmiseks peame mõistma minevikku ja olevikku. Ma teen lühikokkuvõtte oma arvamusest selle kohta, kuidas e-tervis on arenenud Tervis 1.0-st Tervis 3.0-ks. Erinevad riigid on erinevas arengujärgus, mistõttu käesolev jaotus ei põhine ajal, vaid faktidel, kuidas ja kui palju teavet kasutatakse, jagatakse ja analüüsitakse.

Tervis 1.0 on digitaliseerimise esimene etapp – paberi asemel on andmed digitaalsed. Raviasutustes on kasutusel digitaalne haiguslugu (EMR – *electronic medical record*), milles on haigusepisoodi käigus dokumenteeritud inimese kohta oluline andmestik.

Tervis 2.0 on integratsioonide etapp. Raviasutustes kogutud andmeid jagatakse piirkonna, maakonna või mõnel juhul kogu riigi mitme tervishoiuasutuse vahel. Terviseandmete jagamist saab lahendada kahel viisil: ühise digitaalse haigusloo kasutamise kaudu (EHR – *electronic health record*) või kasutades andmete vahetamiseks tsentraalset andmekogu – digilugu (HIE – *health information exchange*). Eestis on andmete vahetamine raviasutuste vahel lahendatud just sel moel. Digilugude tõhusat rakendamist saab läbi viia pärast seda, kui tervishoiuorganisatsioonid on kasutusele võtnud EMR-süsteemid täies ulatuses.

Tervis 3.0 on isikustamise etapp. Haiguse andmetele lisaks kasutatakse täiendavaid andmeid: personaalsed sensorid ning andmed inimese füüsilise aktiivsuse, toitumise ja meeleolu kohta; lisaks geeniandmed ja keskkonna andmed. Tervis 3.0 rakendamisel on rida eeldusi. Lisaks Tervis 1.0 ja Tervis 2.0 realiseerumisele on vaja isiklikku tervisekontot (HA – *health account*), mis koosneb nii haigusepisoodide infost raviasutustes kui ka inimese enda kogutud andmetest. Oluline on märkida, et tervisekonto on inimese oma ning seda kontrollib ja juhib ta täielikult ise. Kodaniku seisukohast peab protsess olema lihtne ja seda peab olema kerge hallata, kuid samas peab olema tagatud andmete terviklikkus ja turvalisus.

Põhiidee on kasutada arvuti võimsust, algoritme ja masinõppe elemente, et koguda, tõlgendada ja analüüsida pidevalt kasvavat andmehulka, mida toodab inimkond, et töötada kiiremini ja arukamalt selleks, et haigusi ennetada ja ravida. Kui alustame uute vahendite hankimisega, võime lisada sekka ka genoomi andmeid. See tähendab võimalusi käegakatsutavaks personaalseks raviks, kuna me teame iga inimese kohta palju kordi rohkem kui praegu. Tehisintellekt (AI – *artificial intelligence*) aitab leida probleeme ja sobivaid teenuseid. See omakorda viib kiirema ravi alguseni. Otsuse langetamise tugisüsteemid ei ole sel juhul üksnes tervishoiuteenuse osutajate kätes, vaid neid saab igaüks kasutada ka individuaalselt, st inimestel on võimalus ise otsustada, milliseid andmeid jagada ja milliseid teenuseid on kõige rohkem vaja. Perearstide töö, mis on ühendatud tehisintellektiga, muutub inimeste tervist toetavaks ja juhtivaks ning aitab leida sobiva tervise- või raviteenuse.
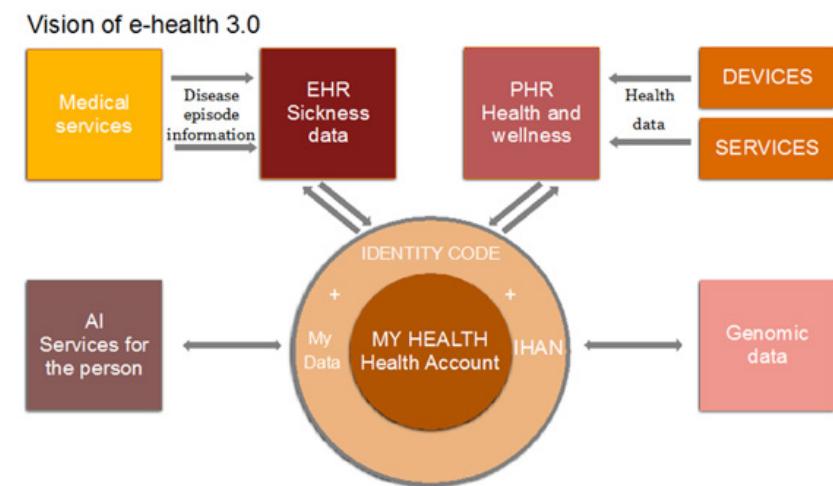
OoNiDa – liikumine kodanikukeksesse tervishoiuökosüsteemi

Meie visioon on aidata riikidel rakendada haiguste vältimisel kodanikukeskseid tervishoiualaseid ökosüsteeme.

- Saavutada tervisealase teabe vaba liikumine, suurendades usaldust ja turvalisust plokiahela tehnoloogiaga seotud andmete jagamisel.
- Olla kolmanda sektori infosillaks kodanike, avaliku sektori ja erasektori vahel, et suurendada tervishoiuteenuste innovatsiooni.
- Suurendada suhtluse lihtsust, väärtust ja tõhusust kõigi tervishoiu ökosüsteemi osaliste vahel ning vähendada raiskamist ja kulusid.

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What is Health 3.0 and new trends in eHealth

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The success or failure of our present healthcare systems is in big part related to the developments happening in the eHealth arena. I strongly believe that technological innovation and the underlying business models can make a tremendous difference in the lives of patients and in the work of doctors in the near future. To understand the future, we need to understand the past and present. In this text, I give a brief summary of how, in my opinion and definition, eHealth has developed from Health 1.0 to Health 3.0. Different nations are in different stages of development, so this distribution is not based on time, but on how and how much information is used, shared and analysed.

Health 1.0 is the first stage of digitalization. We go from paper to paperless. The now widely-deployed and popular computer application electronic medical record (EMR), is the most basic iteration of a digitized version of the regular traditional paper-based medical chart for each individual.

Health 2.0 is the integration stage. We go from different systems that can't, or won't, communicate with each other, to the sharing of data between them. An electronic health record (EHR) is shared instantly and securely among multiple healthcare facilities within a community, region, state or in some cases, the whole country. Effective implementation of EHRs can be done after healthcare organisations have adopted complete EMR systems

Health 3.0 is the stage of personalisation. We go from general knowledge to a personalised approach. The first preconditions for

Health 3.0 is a personal Health Account (HA), which consists of data generated from PHR and EHR and will be fully controlled and managed by citizens themselves. PHR and EHR service providers feed the HA with data. From the perspective of the citizen, the process must be simple and easy to manage.

The main idea is to use computer power, algorithms, and machine learning elements to collect, interpret and analyse this ever-growing amount of data mankind is producing, in order to act faster and smarter to prevent and cure diseases. As we start to possess these new tools, we can add genomic data to the mix. This introduces possibilities for real personalised care, as we know many times more about each person than we do now. Artificial intelligence (AI) will help to find problems and suitable services, which will lead to faster cure. Decision support systems won't be only in the hands of the healthcare providers, but will become tools for self-care. People can now decide for themselves what data to share, and what services they need the most. General practitioners work will transition to health coaching and assisting people in their treatments together with AI.

Vision of e-health 3.0
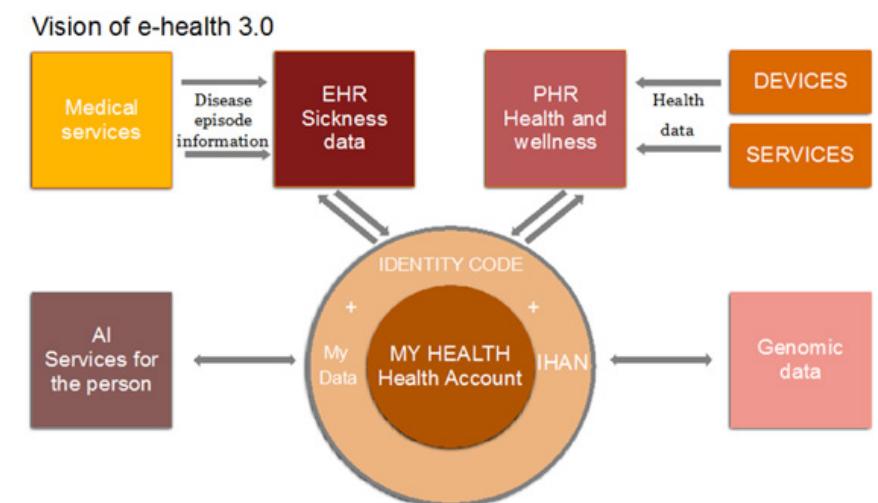
OoNiDa-Moving to a citizen-centric health ecosystem

Our vision is to help countries implement citizen-centric health ecosystems where preventable burden of disease is eliminated.
- To achieve the free flow of health information by increasing trust and security of data sharing with blockchain technology.
- To be a third sector information bridge between citizens, public sector and private sector to increase innovation of health services.
- To increase the ease, value, and effectiveness of interactions between all players in the health ecosystem and reduce waste and cost.

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Antwerp University Hospital'i teekond Magnet®-i tunnustuseni

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Tipptasemel õenduse tunnustus. Täna on Magnet® kõrgeim rahvusvaheline tunnustus, mida jagatakse haiglatele patsiendi kõrgekvaliteedilise hoolitsuse ja tipptasemel õenduse eest. *Antwerp University Hospital* (UZA) sai tunnustuse teekonna eest, mille käigus haigla pidi tõestama, et ta on meeskonnatöös ja patsientide (ravi)tulemustes parem kui keskmine rahvusvaheline õpetav ravikeskus.

Tunnustust annab välja Ameerika Ühendriikide sõltumatu organisatsioon ANCC (*American Nurses Credentialing Center* ehk Ameerika õdede tunnustamise keskus) neljaks aastaks. Koos Rahvusvahelise Ühiskomisjoni (JCI – *Joint Commission International*) akrediteerimisega, mis keskendus rahvusvaheliste standardite vastavuse kontrollimisele sellistes valdkondades nagu ohutud protsessid ja pidev kvaliteedi parandamine, tõestasime, et UZA on rahvusvahelisel tasandil tipptasemel haigla.

Patsiendi vaatenurk. Patsiendi vaatenurgast on Magnet®-i tunnustus väga oluline. Magnet® tagab, et meie patsiendid saavad tipptasemel õendusabi, mida kinnitavad mõõdetavad tulemused erinevates valdkondades. Ühe näitena võib tuua lamatiste esinemissageduse. Meil on see 2,8%, mis on pool Belgia keskmisest (6%) ja vähem kui keskmine rahvusvahelistes õpetavates ravikeskustes (3,1%). Meil esineb erinevusi ka patsiendi rahulolu tulemustes. Võrdluseks teiste haiglatega: meie patsientide sõnul tutvustab ennast 86% haigla töötajatest, samas kui flaami keskmine näitaja on 41%.

Rahvusvaheline uurimistöö näitas, et Magnet®-i haiglates ehk magnethaiglates on madalam suremus, väiksem tüsistuste arv jne. Võrdluses haiglatega, kes pole Magnet®-i tunnustust pälvinud, on magnethaiglates suurem osakaal kõrgelt kvalifitseeritud õenduspersonalil. Patsiendiga tegelevad eriala eksperdid, sest õenduspersonalil on võrreldes mitte-magnethaiglategarohkem võimalusi enda pidevaks koolitamiseks. Magnethaiglaid iseloomustab seegi, et õed teevad suurepärast koostööd arstide ja teiste tervishoiutöötajatega. Kõike seda kogeb ka meie patsient igapäevaselt.

Töötaja vaatenurk. Töötaja vaatenurgast lähtuvalt on kasutegurid patsiendi omadega võrdväärsed. Magnethaiglates töötamine erineb mitte-magnethaiglates töötamisest. Sel teemal on kirjutatud palju lehekülgi ja läbi viidud mitmeid uurimusi, aga meilt küsitakse ikka veel: „Mille poolest see täpsemalt erineb?" Proovime anda kokkuvõtliku vastuse.

- Magnethaiglates on kõrgelt kvalifitseeritud õdesid proportsionaalselt rohkem. Enam kui 80%-l UZA õdedest on bakalaureusekraad; flaami keskmine näitaja on 60–70%. Uurimused on tõestanud, et haiglates, kus on rohkem kõrgelt kvalifitseeritud õdesid, on ka suremus madalam. See tähendab, et lisaks õdede arvule on väga oluline nende kvalifikatsioon.
- Magnethaigla väärtustab õenduspersonali pidevat koolitamist: osaleda saab nii sise- kui ka väliskoolitustel. Praegu töötame me ümber sisseelamisprogrammi, milles arvestame nii õdedega, kes peavad pärast pikka eemalviibimist uuesti integreeruma, kui ka nendega, kes vahetavad haiglas osakonda. ANCC arendas õenduspraktikas välja spetsiifilise ülemineku tunnustamise programmi (PTAP – *Practice Transition Accreditation Program®*). Nimetatud programm eristati Magneti tunnustamisprogrammist (MRP – *Magnet Recognition Program®*), kuid MRP tõendusallikaid vaadates võib öelda, et need kaks programmi täiendavad teineteist.

- Õed kaasatakse otsustamisse ning neil on erinevaid võimalusi oma arvamuse avaldamiseks või ideede esitamiseks. Tulemusena näeme mitte ainult pühendumust, vaid ka innovatsiooni ja pidevaid parendusi. Järgmisteks aastateks strateegiliste plaanide tegemisse on alati kaasatud nii õed kui ka patsiendid.
- Meie organisatsiooni üks peamisi tunnusjooni on interdistsiplinaarne koostöö. Hetkel töötame me välja uusi algatusi, mis aitavad seda veelgi enam soodustada. Ühe teatud osakonna õed juba keskenduvad arstide ja õdede koostööle, mis on osa parendamisprotsessist.
- Magnethaiglates on oma tööle rohkem pühendunud ja sellega rahulolevaid õdesid. Sama kehtib *Antwerp University Hospital*'is töötavate õdede kohta. Pühendumuse näitajad on enamasti kõrgemad kui 8 punkti 10-st. Sellist tulemust kadestavad paljud organisatsioonid. *Antwerp University Hospital* on positiivselt tipus ka tööga rahulolu kõrgete ja kaadri voolavuse madalate näitajate poolest.
- Magnethaiglates pakuvad õed paremat õendusabi ja töötavad tõhusamalt kui teiste haiglate õed. Sellise järelduse võime teha, kui võrdleme oma tulemusi rahvusvaheliste näitajatega.
- Magnethaiglate õed loovad õpikeskkonna, kus kõik õpilased on oodatud ja saavad kõrgekvaliteedilise koolituse. See väide põhineb õpilaste tagasisidel: õppivad õed tulevad meelsasti *Antwerp University Hospital*'isse praktikale, sest asutus pakub sooja vastuvõttu ja häid õpivõimalusi.

Need ongi olulisemad omadused, mis eristavad *Antwerp University Hospital*'i teistest haiglastest. Ilmselgelt soovime edasi tegutseda samal viisil ja teha veelgi enam edusamme. Kõik see on võimalik vaid tänu **kõigi** meie õdede pühendumusele.

Magnet® Recognition for Antwerp University Hospital

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Recognition of nursing excellence. Magnet® recognition is currently the highest international recognition a hospital can achieve when it comes to nursing excellence and high-quality patient care. It is the recognition of a journey, during which the Antwerp University Hospital had to demonstrate that they are better than the average international academic centers when it comes to patient outcomes and teamwork.

The recognition is awarded for a period of 4 years by an independent American organization called American Nurses Credentialing Center (ANCC). In combination with the Joint Commission International (JCI) accreditation, focusing on compliance to international standards with regard to safe processes and continuous quality improvement, we have demonstrated that UZA is a top notch hospital on an international level.

Patient perspective. From a patient perspective, the Magnet® recognition has a special significance. Magnet® recognition guarantees that our patients receive excellent care which is substantiated by measurable results in various domains. One example is the prevalence of pressure ulcers. Our percentage is 2.8, which is half of the Belgian average (6 %), and less than the international average for academic centers (3.1 %). Also when it comes to patient satisfaction we make

the difference. A comparison with other hospitals shows that our patients indicate that 86 % of hospital staff will introduce themselves. The Flemish average is 41 %.

International research has shown that there is a lower mortality rate in Magnet® hospitals, a lower complication rate, etc. Compared to non-Magnet® hospitals, there is a higher ratio of highly skilled nursing staff. The patient is in expert hands, as the nursing staff has an increased opportunity to take part in ongoing training than in non-Magnet® hospitals. A further characteristic of a Magnet® hospital is the excellent cooperation with physicians and other healthcare providers. This is what patients experience every day.

Employee perspective. The advantages as seen from an employee perspective are equivalent to those of the patient. Working in a Magnet® hospital is a different experience than working in a non-Magnet® hospital. Many pages have been written on this topic, plenty of research has been carried out, yet we still get the question: "What exactly makes the difference?". To summarize:

- Proportionately, there are more highly qualified nurses in a Magnet® hospital. Over 80 % of the UZA nurses have a degree at the bachelor level. The Flemish average is 60 to 70 %. Research has shown that this results in a lower mortality rate which means that not only the amount of nurses yet also their qualification is of importance.
- A Magnet® hospital puts effort in the ongoing training of nursing staff. Both internal as external training programs can be attended. We are currently reworking our onboarding program. In this program, we are taking into consideration any nurses who reintegrate after a long absence, and nurses who are switching between hospital departments. The ANCC has developed a specific program related to this subject: the Practice Transition Accreditation Program®. This latter program is separated from the Magnet Recognition Program® (MRP), but is very comple-

mentary when looking to sources of evidence from the MRP.
- Nurses are involved in decision making. They have various ways of sharing their opinions or sparking their ideas. This does not only result in deeper commitment, but also allows for involvement in innovation and continuous improvements. When setting up our strategic plan for the next few years, both nurses and patients have been involved.
- Interdisciplinary collaboration is considered one of the main characteristics of our organization. We are currently working on new initiatives to further stimulate collaboration. Nurses of one particular department have already focused on physician nurse collaboration as part of an improvement process.
- Nurses in a Magnet® hospital are more committed and have higher job satisfaction. This also applies to the nurses of the Antwerp University hospital. Commitment scores are mostly higher than 8 out of 10. Many organizations envy this. Also when it comes to results in job satisfaction and turnover, the Antwerp University Hospital is a top performer.
- Nurses in a Magnet® hospital provide better care and work more efficiently than nurses in other hospitals. This we can conclude by comparing our results on an international scale.
- Nurses in a Magnet® hospital create a learning environment where students feel welcomed and receive a high quality training. This is based on the feedback received from students. Due to the warm welcome and the learning opportunities offered, the Antwerp University Hospital is desirable hospital for trainee nurses to do their internship.

These are the main ways in which Antwerp University Hospital distinguishes itself from other hospitals. We would like more than anything to continue our progress and improve even further. This is only possible thanks to the commitment of **all** our nurses.

Õendusabi arendamine Magnet®-i haigla põhimõtetest lähtudes

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Magnet®-i tunnustust jagab *American Nurses Credentialing Center* (ANCC) haiglatele tipptasemel õendusabi eest. Tunnustuse saamine eeldab tipptasemel pühendumist õendusele nii õdedelt kui ka õendusjuhtidelt. Tulemusena tõuseb patsientide eest hoolitsemise kvaliteet üle keskmise ning patsiendid on rahul õendusega ja õed oma tööga.

Helsingi Ülikooli haiglate osakond (HUS) otsutas 2014. aastal järgida maailma parimate haiglate eeskuju ja asus end välja arendama vastavalt Magnet®-i raamistikule. HUS koosneb 17 haiglast, seega otsustati, et esimestena hakkavad magnetstaatuse nimel aktiivselt tegutsema vähikeskus, laste ja noorukite haigla ning südame- ja kopsuhaiguste keskus. Sel aastal on magnetstaatuse potentsiaalse kandidaadina lisandunud psühhiaatriakeskus. Siiski on kogu HUS-i õendust arendatud Magnet®-i programmi tingimuste suunas ja see tähendab rohkeid ümberkorraldusi.

Magnet®-i programmi keskmes on õed, kes on õendusele pühendunud ning kaasatud kõigesse oma tööga seonduvasse. Magnet®-i üheks positiivseks väljundiks peetakse seda, et õed tajuvad oma autonoomsust. Haiglates on rajatud ümberkujundava eestvedamise ja jagatud juhirollidega (*shared governance*) struktuurid, et toetada õdede võimalusi ning muuta nende igapäevast tööd. HUS-is moodustub jagatud juhirollidega struktuur järgmiselt: igas üksuses on ekspertgrupp, kes arendab õendusabi üksuse piires; igas haiglas on koordinaatorite grupp; lisaks on moodustatud HUS-i ekspertgrupid, kes arendavad kogu haiglasüsteemi puudutavat õendusabi.

Autonoomne käitumine ja vastutuse võtmine oma igapäevase töö parandamise eest pole just see, mida tahaks käsukorras tegema hakata. Meie haiglasüsteem on ajalooliselt üsna bürokraatlik: käsud antakse ülevalt alla. Kaasaegne juhtimine peab olema toetav ja julgustama õdesid tegutsema erialaekspertidena, kes nad tegelikult ju on. Nii õdedele kui ka õendus- ja teistele juhtidele võib see olla suur muutus: selle asemel, et kõigile öelda, mida peab tegema, tuleb osata näidata üldisi eesmärke ja lasta õdedel otsustada, kuidas eesmärgini jõuda ning lahendada teele kerkivad probleemid.

Pärast esimese ekspertgrupi rajamist hakkasime peagi märkama selle mõju õdede võimestatusele. Rühmades olevad õed murdsid oma osakondades pead samade probleemide üle – probeemid olid neid pikemat aega häirinud, aga keegi ei olnud neid lahendanud. Võimalusest muuta oma igapäevases õendustegevuses midagi positiivses suunas omandasid nad edukogemuse ja tundsid uhkust, et saavad oma tööd mõjutada. Ekspertgrupi õdede esindajad on uhked, kui esitlevad meie iga poole aasta tagant korraldataval HUS-i õendusarengu sümpoosiumil kõiki üksuse arenguid. Praeguseks on esinemissoove kogunenud nii palju, et oleme loonud posterite sessiooni, kus kõigil on võimalus esitleda õenduse arendamises tehtud tööd.

Magnet® eeldab, et head õendust tunnustatakse. Tunnustamine algab iga õe tänamisest ja positiivsete kommentaaride ütlemisest kolleegidele iga kord, kui selleks avaneb võimalus. HUS-is proovime me õdesid julgustada, et nad oleksid positiivsed ja toetaksid üksteist kadestamise asemel. Meil on siiski ühine eesmärk: tipptasemel õendus patsientide jaoks. Seega arendasime õenduses välja tunnustamise töövahendi asutuse ja õendusjuhtidele, et neil oleks meeles, kuivõrd oluline on avaldada oma kolleegidele kiitust suurepärase töö eest. Samuti aitab see neil otsustada, mil viisil tuleks suurepärast õendustegevust tunnustada.

Õenduse valdkonda peab kujundama professionaalse õenduse mudeli põhjal. Esimese HUS-i mudeli arendasime me välja 2015. aastal ning siis tegelesid sellega enamasti õendusjuhid. Täna on meil rohkem teadmisi ning me soovime kuulda kliinilistelt õdedelt, mis on nende arvates HUS-i õenduse aluseks. Muu hulgas küsisime üle 13 000 õelt kirjalikult, mis on nende töös tähenduslik ja kuidas nad sooviksid, et nende lähedaste eest hoolt kantaks. Vastuste hulgast loodame leida HUS-i õenduse tuuma ja arendada järgmise versiooni oma professionaalsest õenduse mudelist.

Öeldakse, et oluline pole Magnet®-i tunnustus, vaid kõik need positiivsed muutused, mis leiavad aset selleni jõudmise käigus. Viimase kolme aasta jooksul oleme Magnet®-isse väga palju panustanud ja oma kogemuse põhjal Helsingi Ülikooli haiglas nõustume kindlasti, et eeltoodud väide käib paika!

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Developing nursing care by the principles of Magnet® Hospital

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The Magnet® Hospital is a recognition of excellent nursing care awarded by American Nurses Credentialing Centre ANCC. Magnet® recognition requires a commitment to excellence in nursing from nurses and nurse leaders. As a result, patient care is above average, patients are satisfied with nursing care, and nurses are content with their work.

In 2014, the Helsinki University Hospital HUS decided to follow the lead of the best hospitals in the world and start to develop HUS according to the Magnet® framework. As HUS consists of 17 hospitals, it was decided that the first ones to work actively towards Magnet® status were Cancer Center, Hospital for Children and Adolescents, and the Heart and Lung Center. This year, the Psychiatric Center has also come forward as a potential applicant for Magnet® status. However, all nursing in HUS is being developed towards Magnet®, which means many changes are required.

At the heart of Magnet® are nurses who are committed to nursing and who are also involved in everything concerning their work. Nurses' perception of how autonomous they are is one of the positive results found in Magnet®. Shared governance/leadership structures are built in hospitals in different ways to support nurses' opportunities and to make a difference in their daily patient care. In HUS, the shared governance structure consists of an expert working group in every unit to develop nursing care locally, a coordinating group in each hospital, and HUS expert groups developing nursing care that concerns the whole hospital system.

Electing to act autonomously and taking charge of improving one's daily work is not something that everybody can immediately begin to do when told so. Historically, the hospital system is quite bureaucratic, lead from top down. Today's leadership should be supportive and encouraging of nurses to be the experts of patient care that they truly are. This is a change for nurses, but also to nurse leaders and managers, who instead of telling everybody what to do, must be able to identify their common goal and let the nurses decide how to address it, and how to solve the problems that may arise on the way.

We started to notice the effect of nurses' empowerment quickly after the first expert working groups were established. Nurses in these groups tackled some problems in their own units that had bothered them for a long time, that nobody else had solved. From this possibility to enact positive change with something involved in their daily nursing care they got to experience success and the pride in having an impact on their work. The nurse representatives of these expert working groups have been proud to present in our semiannual HUS nursing development symposium of all local developments they have done. At present, we get so many suggestions for presentations that we also have a poster session for everybody to be able to present their nursing development work.

Magnet® expects good nursing to be recognized. This starts with every nurse thanking and giving positive comments to their colleagues whenever there is a place for it. In HUS we try to encourage nurses to be positive and supportive of each other, not jealous or envious. After all, we all have a common goal – excellent nursing care for our patients. We have developed a nursing recognition toolkit for our nurse leaders and managers to remind them about the importance of recognizing the excellent work their fellow nurses do. It also helps them to decide how to recognize excellent nursing.

Nursing care should be founded on a professional practice model. We developed the first HUS model in 2015, and at that time it was

mostly done by nurse leaders in different positions. Today we know better, and want to hear more from our clinical nurses what is the basis of HUS nursing. We have asked from all of our over 13000 nurses to write to us, and tell us what they find meaningful in their work and how would they want their loved ones to be cared for, among a few other questions. From these answers we hope to find the core of HUS nursing and to develop the next version of our professional practice model.

They say that it is not the Magnet® recognition that matters, but all the positive changes that happen along the way. We have invested heavily in Magnet® for the last three years, and from the experience in Helsinki University Hospital, we definitely agree!

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Julgus kui õenduse väärtus: iga õde ja ämmaemand on võimestatud organisatsiooni liider!

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raamatu „Kliiniline juhtimine: A–Z" autor

Julgus on õenduses hoomamatu, kuid samas on see õenduse aluse osa nii kliinilises praktikas, teaduses-hariduses kui ka juhtimises. Siiski mainitakse julgust erialases või muus kirjanduses harva. Samuti on seda harva märgatud ja toetatud praktikas või kõrgemate juhtide poolt. Elus vajavad õed ja ämmaemandad julgust, et saada igapäeva-töös hakkama ning soodustada tipptasemel tööd, otsida tunnustust (nt Magnet®) ja kaitsta teatud patsiente, et esitada väljakutse vananenud õenduspraktikale ja isegi selleks, et avaldada vähepopulaarne või vastu-oluline uurimus või arvamuslugu.

Esitlus keskendub julguse olulisusele õenduses ja ämmaemanduses ning annab ülevaate erialasest kirjandusest, mis aitab sügavamalt mõista julguse tähendust kaasaegses praktikas. Seejärel keskendub esitlus praktilistele sammudele, mida õed ja ämmaemandad saavad

teha julgeks saamisel, millest suure osa moodustab professionaalne enesekindlus. Selleks vaatame veidi Marie Manthey tööd ülemaailmselt tuntud võimestatud organisatsiooni juhtimise programmi (LEO – *Leading an Empowered Organization*) väljaarendamisel. Viimase kahekümne aasta jooksul on programmi läbi teinud kümned tuhanded õed ja ämmaemandad (ja teised tervishoiutöötajad) üle kogu maailma ning on leitud, et programmis osalejad omandavad juhtimises praktilisi oskusi, mida nad vajavad, et saada julgeks ja panustada tõhusalt tervishoiuteenuse paranemisse.

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Courage as a nursing value: every nurse and midwife is a leader in an empowered organisation!

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Courage is an elusive but fundamental component of nursing, whether in clinical practice, research, education, or leadership. However, it is seldom mentioned in professional texts and other literature, nor is it often recognised and supported in practice or by senior leaders. In reality, nurses and midwives need courage to face practice on a daily basis but also to promote excellence, seek recognition (such as Magnet®), to advocate for certain patients, to challenge outdated practice, and even to publish unpopular or controversial research or opinion pieces.

This presentation will focus on the importance of courage in nursing and midwifery and will provide an overview of the literature.

The literature, such as it is, helps to assist a deeper understanding of the meaning of courage in contemporary practice. However, the presentation will then focus on practical steps that nurses and midwives can take to be courageous. Much of this is about professional confidence. To this end, some of the work of Marie Manthey in developing the world renowned 'Leading an Empowered Organization' (LEO) programme will be explored. This programme has been completed by tens of thousands of nurses and midwives (and other health care professionals) worldwide over the last twenty years, and has been found to provide people with the practical skills in leadership that they need to be courageous and to effectively contribute to an improved health service.

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Perhmagnetikum: täna ja homme

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Õendustegevuse arendamine Põhja-Eesti Regionaalhaiglas on olnud innovatsioonirohke. Alustasime 2005. aastal õendusjuhtimise ja kvaliteedi süsteemse arendamisega. Oma tegevuses oleme lähtunud piirkonna kliinilistest vajadustest, haigla arengukavast ja eetika-koodeksist ning riiklikest projektidest. „Perhmagnetikum" on programm, mis esmakordselt kirjeldab regionaalhaigla õendus-valdkonna arengusuundi, kvaliteeti ja juhtimist, eestvedamist, inno-vatsioone ning soovitud tulemusi. Programmi alusel püstitatakse regionaalhaigla õendusvaldkonna tööeesmärgid aastani 2030. „Perhmagnetikumi" koordineerib meeskond haigla õendusdirektori eestvedamisel. Programmi koostamisel võeti aluseks järgmised strateegilised dokumendid ja juhised: „SA Põhja-Eesti Regionaalhaigla arengukava aastateks 2019–2021" (2019), Magnet®-i rakenduse käsi-raamat (2019 Magnet® … , 2019), „Rahvastiku tervise arengukava 2020–2030" (2019) ja „Kaheksa sammu inimese tervise heaks. Eesti õenduse ja ämmaemanduse arengustrateegia 2011–2020" (2011).

„Perhmagnetikumi" idee tugineb *American Nurses Credentialing Center*'i (*ANCC*) programmile *Magnet Recognition Program®*. Tegemist on ainulaadse mudeliga tervishoiuorganisatsioonidele, kes hindavad ja tunnustavad õendustalente ning tipptasemel tervishoiu- ja õendusabiteenust. Magnet®-i haigla (edaspidi magnet-haigla) ideoloogia alguseks võib pidada 1983. aastat, mil Ameerika Õenduse Akadeemia (*American Academy of Nursing* juhtimisel selgitati üleriigiliselt välja haiglad, mis olid õdede värbamisel edukad ja kus

tööjõu voolavus oli väike. Neid haiglaid eristas teistest 14 omadust, mida hakati käsitlema magnetismi tunnustena (*forces of magnetism*). Magnethaigla kontseptsiooni tuntakse kõige rohkem kvaliteedimudeli põhjal, millesse on koondatud 5 kvaliteedikomponenti ja 14 magnetis-mitunnust (sh indikaatorid). (Gaidajenko jt, 2019).

Regionaalhaigla õenduse professionaalsus tugineb mitmele kutsealale: õde, hooldustöötaja, ämmaemand, bioanalüütik, tegevus-terapeut ning radioloogia, sterilisatsiooni ja erakorralise meditsiini tehnik. Me kõik kanname endas regionaalhaigla ühiseid väärtusi, milleks on pühendumine ja professionaalsus, hoolivus ja vastutus-tundlikkus, avatus ja koostöövalmidus. Haigla missioonile tuginedes investeerime koos inimese tervisesse professionaalse õenduse kaudu, mis toetab inimest tema terviseteekonnal. Kvaliteediprogrammi „Perhmagnetikum" elluviimisega soovime saada õenduse valdkonna tõmbekeskuseks ja usaldusväärseks partneriks nii patsiendile koos tema lähedastega kui ka kogukonnale ja kolleegidele – seda kõike haigla, Eesti Vabariigi ja rahvusvahelisel tasandil. Me tegutseme süste-maatiliselt selle nimel, et patsient saaks meie haiglas ohutut ja tipp-tasemel õendusabi ning et meie töövõtted oleksid alati patsiendi-kesksed, ohutud ja tõenduspõhised, samal ajal kui me ise säilitame igas olukorras kollegiaalsuse. Lisaks tagame kogemus- ja teadmis-põhise koolitamisega õenduse arengu ja jätkusuutlikkuse kogu riigis.

„Perhmagnetikumi" raames ning esimesena Eestis töötasid regionaalhaigla õed ja õenduse võtmeisikud välja Professionaalse Õenduse Mudeli (PÕM). Tuginedes õendusjuhtimise ja arendustöö parimale maailmapraktikale (Duffy, 2016) ja kohalike erialaekspertide kogemustele, määratleb PÕM meie haiglas õenduse prioriteetsed eesmärgid: inimkesksus, eestvedamine, innovatsioon ja tulemused. Nende eesmärkideni jõudmiseks on „Perhmagnetikumi" programmi raames koostatud vastavad arendusprojektid, mis kokkuvõtlikult jagu-nevad kolme arengusuunda:

- **Õendusjuhtimine ja -eestvedamine.** Oleme eestvedajad tervishoidliku, ohutu ja võimestava töökeskkonna kujundamisel ning koostöö arendamisel. Pöörame tähelepanu töökultuurile ja professionaalsele suhtlemisele organisatsioonis koostöös teiste institutsioonide ja organisatsioonidega. Muudatuste juhtimisel võtame vastutuse ja teeme meeskonnatööd. Eestvedamise protsessi arendamiseks õpime ja juurutame praktikasse trans-formeeriva ehk ümberkujundava eestvedamise (*shared gover-nance*) juhtimisstiili õenduses. Õendusjuhtide kompetentside tõstmiseks ja säilitamiseks lähtume tervishoiujuhtide tunnustatud ja kohandatud kompetentsimudelist.
- **Õendusinnovatsioonid.** Oleme avatud uuendustele, raken-dame innovaatilisi lahendusi ning koostame vastavad arendus-projektid, nt „Perhmagnetikumi Akadeemia" ja „#5tärniõendus". Osaleme teadustöös, selle juhendamises ning tulemuste raken-damises koostöös Tallinna Tervishoiu Kõrgkooli, Tartu Tervishoiu Kõrgkooli, TalTechi, Tallinna Ülikooli ja Tartu Ülikooliga.
- **Professionaalsus õendusabis, selle kvaliteedis ja tulemus-tes.** Õenduspraktikas järgime rahvusvaheliselt tunnustatud kvaliteedinõudeid. Arendame ja rakendame õendustegevusest tingitud kvaliteediindikaatorite, patsiendi ohujuhtumite ja vigade juhtimise süsteeme. Suurendame õdede autonoomsust ja ise-seisva vastuvõtu teenust ning teeme perearstide ja tütarhaigla-tega koostööd patsientide nõustamisel ja koolitamisel. Õendusprotsessi dokumenteerimisel juurutame standardi-tud õenduskeelt (NANDA-I, NOC, NIC). Panustame tööalasesse õppesse ja kogukonna tervisehariduse. Aitame kaasa atrak-tiivse värbamispoliitika kujundamisele regionaalhaiglas ja ratsio-naalsele inimressursi planeerimisele.

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Perhmagnetikum:
today and tomorrow

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The development of nursing practice at the North Estonia Medical Centre has seen a lot of innovation. We began in 2005 with the systematic development of nursing management and quality. Our work is based on the clinical needs of the area and the development plans of local hospitals, in addition to national projects and the code of ethics. The „Perhmagnetikum" at the North Estonia Medical Centre is a first-of-its-kind programme in which developmental management, trends, and quality with respect to innovation and desired results in nursing research are described. The operational objectives of the „Perhmagnetikum" programme will be set to continue until 2030. The programme is coordinated by a team under the leadership of the Director of Nursing of The Medical Centre. The following strategic documents and instructions were the basis for compiling the programme: the Development Plan of the Medical Centre (SA Põhja-Eesti …, 2019), 2019 Magnet® Application Manual (2019), Public Health Development Plan 2020–2030 (Rahvastiku Tervise …, 2019) and Estonian Nursing and Midwifery Development Strategies 2011–2020 (KAHEKSA SAMMU …, 2011).

The „Perhmagnetikum" programme's concept is based on the American Nurses Credentialing Center (ANCC) Magnet Recognition Program®. It is a unique model for healthcare organisations, which values and recognizes nursing talents and high-quality healthcare and

nursing care services. The basis for the Magnet® hospital ideology is believed to be from 1983, under the management of American Academy of Nursing, in which hospitals all over the country that were successful in recruiting nurses with low staff turnover were identified. These hospitals were distinguished by 14 features, described as 'magnetic' forces, distinct from other hospitals. The concept of a 'magnet hospital' is based on the quality model, which combines 5 quality components with 14 forces of magnetism (including their indicators). (Gaidajenko et al., 2019).

Professionalism in nursing at the North Estonia Medical Centre is based on a number of professions: a nurse, a care worker, a midwife, a bioanalyst, an occupational therapist, as well as radiology, sterilisation and emergency medical technicians. We all carry the common values of the North Estonia Medical Centre region-wide: a commitment to professionalism, care, responsibility, openness, and a willingness to cooperate. Based on the mission of the hospital, we collectively invest in healthcare through professional nursing, in the support of a person on their way to health and wellness. We would like to become a magnet hub in nursing through the implementation of the „Perhmagnetikum" programme. And in doing so, to become a reliable partner to patients and their loved ones, to the community as a whole, and a colleague, at the level of the hospital, with the Republic of Estonia and the international community. We are acting systematically to ensure that the patient receives safe and excellent nursing care in our hospital, and that our working methods are always patient-centred, safe, and evidence-based; and we would maintain collegiality in all circumstances. In addition, we will ensure the development and sustainability of nursing across the country with training, which is based on experience and knowledge.

In the „Perhmagnetikum" framework, the nurses and key people in nursing at the North Estonia Medical Centre were the first to compile a Professional Nursing Model (PNM) in Estonia. Based on the best practice in nursing management and development in the world (Duffy, 2016) and the experience of local professional experts, the priority of the objectives of nursing in our hospital will be in accordance to the PNM: person-centredness, initiative, innovation, and results. To reach these objectives, the „Perhmagnetikum" programme consists of these corresponding development projects, divided into three main trends, in brief:

- **Nursing management and initiative** – we are the initiators of health-sustaining, safe, and empowering work environments, and of cooperative development. We will pay attention to the work culture and professional communication within the organisation, and in cooperation with other institutions and organisations. We use teamwork and we take responsibility in the change of management. We are to learn and put into practice the shared governance management style in nursing to develop the initiative process. The recognized and adjusted competence model of health care directors is the basis to improve and maintain the competence of our nursing directors.
- **Nursing innovations** – we are open to innovation implementation of innovative solutions of appropriate development projects like the „Perhmagnetikum Academy" and „#5starnursing". We participate in research, coaching, and the implementation of the results in collaboration with Tallinn and Tartu Health Care Colleges, TalTech, Tallinn University, and University of Tartu
- **Professionalism in nursing care**, its quality and results – we follow the internationally recognized quality requirements in nursing practice. We develop and implement quality indication systems, patient safety cases, and error management due to nursing practice. We increase the autonomy or nurses and the availability of nurses' independent appointments, and we collaborate with general practitioners and subsidiary hospitals in patient counselling and education fields. We introduce

standardised nursing language (NANDA-I – NOC – NIC) as a basis for documentation of nursing process. We contribute to work-related training and health education of the community. We help to develop attractive recruitment policy at the North Estonia Medical Centre and in rational human resource planning process.

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Personaalmeditsiini kliinilised projektid rinnavähi ja südame-veresoonkonnahaiguste ennetamisel ja varajasel avastamisel

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2003. aastal teatas Inimgenoomi Projekt (*Human Genome Project*) inimese genoomi esmakordsest järjestamisest (The Human …, 2019). Bioloogia valdkonnas on tõenäoliselt tegu maailma suurima uurimis-projektiga, mille tulemusel leiti, et inimese genoom koosneb umbes 20 500 geenist, mida on tunduvalt vähem, kui algselt arvati. Lisaks leiti geenide asukohad ja paigutus genoomis (Venter jt, 2001; Corrections and …, 2001; Corrections and …, 2002). Dekaad hiljem käivitusid maailmas mitmed projektid, mille eesmärgiks oli aru saada, kuidas mingid kindlad geenid ja nende mutatsioonid varieeruvad, põhjustades inimeste erinevat väljanägemist, haigestumist ja ravimi-tele reageerimist. Kõik see sai võimalikuks tänu geenide järjestuse kindlaksmääramisel rakendatavate uute tehnoloogiate (*next gene-ration sequencing*) kasutuselevõtule, mis on muutunud aasta-aastalt odavamaks ning võimaldanud kasutada teadusuuringutes suurema hulga inimeste geeniinfot (The Cost …, 2019).

Sajandivahetusel võttis Eesti Riigikogu vastu inimgeeniuuringute seaduse (2000), mis lõi aluse Eesti Geenivaramu loomisele (käivitus 2001) ning geenivaramusse kogutavate koeproovide ja andmete kasuta-misele teaduse edendamise ning rahva tervise parandamise eesmärgil. Seadus sätestab ka geenidoonorite õigused ja nende kaitse. Varem oli rahvastikupõhistest biopankadest käivitunud vaid Islandi biopank, mis aga – erinevalt Eestist – kuulus äriettevõttele. Eestiga sama-aegselt alustas tegevust biopank Inglismaal (*UK Biobank*). Eestis käivitus

paralleelselt geenivaramu loomisega riiklik andmevahetusplatvorm X-tee, mõned aastad hiljem hakati arendama üleriiklikku terviseinfo-süsteemi (TIS/Digilugu). Kõik see avas võimaluse järkjärgulisele arengule, mis on tänaseks viinud plaanini rakendada personaalmedit-siini Eesti tervishoius rutiinselt. Kuigi personaalmeditsiini rakendamise seisukohalt on eeltoodu äärmiselt oluline, on geeniandmete kasu-tuselevõtu peamine komponent info kliiniline usaldusväärsus. Selleni jõudmine on nõudnud oluliselt kauem aega, kui algselt arvati, kuid tänaseks on hulgaliselt uurimistöid, mis kinnitavad geneetiliste faktorite olulisust haiguste ennetamises, täpsemas ravis ja diagnos-tikas. Täna on Tartu Ülikooli Eesti Geenivaramus (Tartu Ülikooli …) 200 000 Eesti inimese (20% täisealisest elanikkonnast) geeniproovid ning tegu on ühe suurema rahvastikupõhise andmekoguga maailmas. Eesti teadlased osalevad edukalt uue genoomika-alase teadmuse loomisel. Muu hulgas on uuritud ka personaalse geeniinfo tagasiside andmist inimestele ja selle mõju.

Tuginedes tõenduspõhisusele, haiguste levimusele ja muudele teguritele, otsustati 2017. aastal Sotsiaalministeeriumi eestvedamisel valida kliinilise personaalmeditsiini rakendamise piloteerimiseks kaks haigusseisundit: rinnavähk ja südame-veresoonkonnahaigused. Kliinilisi uuringuid viivad läbi Tartu Ülikooli Kliinikum, Tartu Ülikool, Põhja-Eesti Regionaalhaigla ja TalTech; uurijatena osalevad perearstid, onkoloo-gid ja meditsiinigeneetikud. Piloteerimise peamine ülesanne on välja selgitada, kuidas viia geeniinfo võimalikult turvaliselt arsti töölauale, saavutada arstide personaalmeditsiinialase nõustamise valmidus ning mõista, mil moel patsiendid arstilt saadud info vastu võtavad. Uuringul on mitmeid eeltingimusi alates seadustes kirjapandust kuni füüsilise keskkonnani, mille kaardistamisega kliinilised pilootprojektid samuti tegelevad. Uuringu lõpus pakutakse välja personaalmeditsiini teenuste mudel kahes uuritud valdkonnas, milles igapäevameditsiini raken-damine vajab poliitilisi otsuseid.

Aastatel 2018–2020 viiakse läbi uurimisprojekt „Personaalmeditsiini kliinilised juhtprojektid rinnavähi ja südame-veresoonkonnahaiguste täppisennetuses".

Rinnavähi pilootprojekti eesmärgiks on välja töötada ja uurida personaalset geneetilist eelsoodumust arvestav mudel rinnavähi õigeaegseks avastamiseks ning vältimiseks. Praegune mammograafia sõeluuring kaasab naisi vanuses 50–69 eluaastat, kuid teadustööd on tõestanud, et naistel esineb oluliselt kõrgem haigestumisrisk väljaspool seda vanusegruppi või siis on vaja täiendavaid meetmeid haiguse avastamiseks ja vältimiseks (Siu, 2016). Uuritavate valik põhineb seni teadaolevate kõrget rinnavähiriski kandvate pärilike üksikgeenide (BRCA1, BRCA2 jt) muutustel, aga ka maailma kliinilises praktikas uuenduslikul, paljude geenide väikeseid muutusi summeerival nn polügeensel riskiskooril. Uuringus rakendatava riskiskoori töötasid TÜ genoomika instituudi teadlased välja pilootprojekti alguses (Läll jt, 2019). Onkoloogide ja meditsiinigeneetikute konsultatsioonile kutsutakse kokku 952 uuringus osaleda soovivat naissoost geenidoonorit vanuses 22–79 aastat. Lisaks analüüsitakse geeniandmeid 50–69-aastastelt naistelt, kes on vähemalt korra osalenud Eesti populatsioonipõhises mammograafia sõeluuringus aastatel 2016–2020. Uuringu lõpus hinnatakse geneetilise tagasiside ja kliinilise sekkumise vastuvõetavust, mõju uuritavatele ning kasutatud meetmete ja protsessi rakendatavust Eesti meditsiinisüsteemis.

Südame-veresoonkonnahaiguste pilootprojekti raames uuritakse, kuidas ennetada personaliseeritud haigusriske ja geneetilist infot arvesse võttes võimalikult efektiivselt südame-veresoonkonnahaigusi nii rahvastiku kui ka üksikisiku tasemel. Uuendusena lisatakse Euroopas ja Eestis südamehaiguste riski määramiseks kasutatavale SCORE-meetodile paljude geenide väikeseid muutusi summeeriv polügeenne riskiskoor. Projektis kasutatakse spetsiaalselt Eesti andmetele kohandatud IT-tööriista, mis aitab arvutada südame-veresoonkonnahaiguste kompleksriski geneetilist riski arvesse võttes. Patsiendid saavad seeläbi visualiseerida, kuidas riskitegurid mõjutavad nende soodumust saada müokardiinfarkti ja millise riskifaktori vähendamisele tuleks neil tähelepanu suunata. Rakendusuuringusse kaasatakse kokku 1000 Eesti Geenivaramu geenidoonorit: mehed vanuses 30–64 ja naised 40–70 aastat, kellest pooled jaotatakse sekkumis- ja teine pool kontrollrühma. Uuringus osalemiseks nõusoleku andnud geenidoonoritele annab nende personaalsete südame-veresoonkonnahaigustega seotud riskide kohta tagasisidet, nõu ja ravisoovitusi perearst. Sekkumisgruppi jälgitakse 12 kuud, mille jooksul toimub 3 uuringuarsti konsultatsioon. Projekti läbiviimises osaleb üle 70 perearsti, kes on läbinud spetsiaalse koolituse. Uuringu tulemusi hinnatakse sarnaselt rinnavähi alaprojektiga.

Paralleelselt kliiniliste personaalmeditsiini pilootprojektidega viiakse Eestis läbi ka IT-taristu rakendamise koolitusprojekt ning otsustustugede arendamise ja rakendamise projekt, mis üheskoos loovad olulised eeldused tulevikku vaatava, personaalse, ennetava ja inimest kaasava tervishoiusüsteemi väljatöötamiseks. See on vastand süsteemile, mis tegeleb tagajärgedega, lähtub nn keskmisest inimesest ega jaga vastutust inimesega.

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Clinical projects of personalized medicine on disease prevention and early detection of breast cancer and cardiovascular diseases

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In 2003, the Human Genome Project announced the first successful completion of the human genome sequence as a result of probably the largest research project in the history of the biology field (The Human ..., 2019). It was found that the human genome consists of approximately 20,500 genes, which is far less than was initially postulated. In addition to this, the locations of the genes were determined, as well as their position in the genome (Venter et al., 2001; Corrections and ..., 2001; Corrections and ..., 2002). A decade later, several projects across the globe were launched with the aim to understand how specific genes mutate and vary depending on different people; generating their different looks, tendency to fall ill, and their reaction to medications. It was now possible due to new technologies used in determining the sequence of the human genome (next generation sequencing), which have decreased in price every year and allowed to reach genetic information of more people to use in research studies (The Cost ..., 2019).

In 2000, the Parliament of Estonia adopted the Human Genes Research Act (Inimgeeniuuringute seadus, 2000), which was the basis for creating Estonian Genome Center (launched in 2001), and underwent research for collecting tissue samples and using the data with the aim to improve public health. The act outlines the rights and protections of gene donors. Before Estonia, only the UK had launched a nation-based bioban, which, unlike in Estonia, belonged to a

commercial company. The UK Biobank was launched at the same time as Estonian one, and in parallel with creating Estonian Genome Centre, a national data exchange platform, X-tee, was launched in Estonia, and some years later the development of national health information system was started (TIS/Digilugu). It paved the way for step-by-step development, which reached a plan today to implement personal medicine in Estonian healthcare as routine. Although everything mentioned above is critically important in the implementation of personal medicine, the clinical credibility of information is the most important component of launching the use of genetic information. The onset has taken more time than originally planned, but there are many research papers by now which confirm the importance of genetic factors in disease prevention, and more specifically, the cure and diagnostics. There are gene samples of 200,000 people of Estonia (20 % of adult population) in the Tartu University Estonian Genome Center (University of Tartu: …), and it is one of the biggest population-based databases in the world. Estonian researchers have successfully participated in creating unique genome-based knowledge. Among others, it has been studied to give feedback on personal genetic information back to the people and solidify its influence.

Relying on its evidence base, the prevalence of diseases, and other factors, it was decided under the lead of the Ministry of Social Affairs in 2017 to choose 2 conditions for piloting clinical personal medicine implementation – breast cancer and coronary diseases. Clinical study is conducted by Tartu University Hospital, University of Tartu, the North Estonia Medical Centre, and TalTech. General practitioners, oncologists and medical geneticists participate in it as researchers. The main objective of piloting is to find out how it could be possible to forward genetic information to the desk of the doctor, and how doctors can achieve readiness in the counselling of personal medicine, and how the information offered by a doctor is received by the patients. There are several necessary prerequisites for the research,

starting with legislation up to physical environment, the mapping of which is one of the tasks of clinical pilot projects. By the end of the research, it was presented the service model of personal medicine in two of the studied fields, which works as a benefit since implementation of daily medicine requires political decisions.

There is a research project being carried out between 2018–2020 entitled: "Personal Medicine Pilot Projects in Precision Prevention of Breast Cancer and Cardiovascular Disease".

The objective of the breast cancer pilot project is to develop and study models, taking into consideration the personal genetic predisposition for the detection of breast cancer in time and for prevention. Mammogram screening includes women aged 50–69, but research confirms that some of the women who have a higher risk of breast cancer are excluded from this age group, and additional measures are necessary to detect and prevent the disease in them (Siu, 2016). In the process of selecting the participants, it used changes in known hereditary single genes carrying a high risk of breast cancer (BRCA1, BRCA2 etc.), as well as innovations in clinical practice, combining minor changes in many genes into a so-called polygenic risk score. The risk score implemented in the study was developed by the scientists of University of Tartu Institute of Genomics at the beginning of the pilot project (Läll et al., 2019). 952 female gene donors wishing to participate in the study were invited for the consultation of oncologists and medical geneticists aged 22–79. In addition the data from female gene donors aged 50–69, who has participated in an Estonian population-based mammography screening in 2016–2020 at least once, is being analysed. At the end of study, the receivability of genetic feedback and clinical intervention, the influence on the participant, and the implementation options of applied intervention and processes in Estonian healthcare system are being evaluated.

Within the framework of the coronary-vascular diseases pilot project, it is studied how it can be possible to more effectively prevent

coronary-vascular diseases on the levels of both the individual and the wider population by taking personalised disease risks and genetic information into consideration. as an added innovation, this is a unique study both in Europe as well as in Estonia in that it added the SCORE method used in determining risk of coronary diseases polygenic risk, to the method of summing minor changes in many genes. It specifically adjusted its IT tools used for Estonian data specifically to the project. These help to calculate complex risks of coronary-vascular diseases by also taking into account genetic risk. It allows patients to visualise how various risk factors change their risk to experience myocardial infarction, and which aspect is the most important risk factor to pay attention to modifying. Applied research includes 1000 gene donors in total. From the Estonian Genome Center; there are males aged 30–64 and females aged 40–70, half will be in the intervention group, and the other half in a control group. A general practitioner gives feedback to the gene donors accepted to participate in the study about risks regarding their personal risk factors on coronary-vascular diseases, advice, and treatment recommendations. The intervention group is observed for 12 months, during which there are 3 consultations by a research doctor. There are more than 70 general practitioners who each completed special training to carry out the project. The results of the study are evaluated similarly to the subproject of breast cancer.

In parallel to clinical and personal medicine pilot projects, it is conducted alongside an IT-infrastructure implementation and training project, and the development and implementation of decision-making-supports in Estonia. These projects together create important prerequisites for creating a healthcare system looking into the future, as personal, preventive, and inclusive of the patient. It is the opposite of the current system, which deals with consequences, which is based on a so-called genetically average person, and which does not share any responsibility with the patient.

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Vähktõvega ambulatoorsete patsientide informatsioonivajadus ja informeerimine – küsitlusuurimus Põhja-Eesti Regionaalhaigla onkoloogia- ja hematoloogiakliinikus

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Igal patsiendil on õigus saada tervishoiutöötajatelt piisavalt informatsiooni, et ise oma tervenemisele või seisundi leevendamisele kaasa aidata (Võlaõigusseadus, 2001). Paraku näitavad senised uurimistööd, et vähktõvega patsiendid vajavad haiguse, ravi ja kõrvaltoimete kohta rohkem informatsiooni, kui abiandjad seda pakuvad. Seetõttu lisandub vähihaigel tervisemurele ka rahulolematus informatsiooni hulga ja kvaliteedi suhtes ning süveneb arusaam, et tervishoiutöötajad ei mõista patsientide infovajadusi. (McCaughan ja McKenna, 2007; Matsuyama jt, 2013; Goss jt, 2015). Kuna Eestis ei ole seni süsteemselt uuritud, millist informatsiooni, millisel kujul ja kelle poolt vähktõvega patsiendid vajavad, viidi koostöös Tartu Ülikooli ja Põhja-Eesti Regionaalhaiglaga oktoobrist 2018 kuni veebruarini 2019 läbi patsientide küsitlusuurimus ühes vähiravikeskuses.

Uurimistöö eesmärk oli kirjeldada Põhja-Eesti Regionaalhaigla (PERH) onkoloogia- ja hematoloogiakliiniku ambulatoorsete patsientide rahulolu saadava informatsiooniga haiguse, selle ravi ja kõrvaltoimete kohta ning patsiendi vajadusi lisainformatsiooni ja eriõde-nõustaja järele.

Uurimistöö on kvantitatiivne, empiiriline ja kirjeldav. Käepärase valimi moodustasid 146 vähktõvega patsienti, kes käisid 2018/2019 nelja kuu jooksul PERH-i onkoloogia- ja hematoloogiakliinikus ambulatoorsel vastuvõtul. Andmeid koguti Jaal'i ja Jugar'i koostatud küsimustikuga (Jugar jt, 2017), mida kohandati vastavalt uurimistöö eesmärgile. Andmeid analüüsiti arvutiprogrammis Microsoft Excel 2010, tulemuste esitamiseks kasutati kirjeldavat statistikat ja mõõdiku usaldusväärsuse hindamiseks Cronbachi alfa koefitsienti.

Uurimistööst selgus, et enim oldi rahul info saamisega diagnoosi ja selle tähenduse ning kasvaja paiknemise kohta. Kõige vähem oldi rahul informeerimisega haiguse põhjus(t)est ning haigusega seotud majanduslikest ja sotsiaalsetest muutustest. Üle 80% patsientidest tõdes, et nii haiguse, ravi kui ka kõrvaltoimete puhul oli nende peamiseks infoallikaks eriarst. Ligi pooltel küsitletutest oldi infoallikana märgitud ka õde, eriõde-nõustaja, infovoldik ja/või inforaamat. Võimalikest infoallikatest kõige vajalikumaks peeti eriarstilt saadavat informatsiooni (olenevalt teemast 82–84% küsitletutest). Õedelt saadud teave ja infovoldikud või -raamatud osutusid teabeallikatena võrdväärselt vajalikuks keskmiselt 80%-le küsitletutest. Lisainformatsiooni saamiseks oldi 75% uuritavatest nõus pöörduma eriõde-nõustaja vastuvõtule. Eelistatud kommunikatsioonivormiks oli silmast silma vestlus.

Pakkumaks kvaliteetset tervishoiuteenust, on oluline rakendada uurimistööga saadud teavet selle kohta, millist informatsiooni, kuidas ja millal vähktõvega patsientidele jagada. Uurimistulemustele tuginedes tehakse uurimiskeskkonnas vajalikke muudatusi õdede ambulatoorsete vastuvõttude ning seal jagatava informatsiooni paremaks

korraldamiseks. Üheks ettepanekuks on koostada õdede iseseisvaks vastuvõtuks konkreetne vestlusteemade kontroll-leht veendumaks igal visiidil, et patsient on vajalike teemade kohta infot saanud ja seda ka mõistnud. Informatsiooni edastamine peaks toimuma silmast silma vestluse käigus, kuid soovitatav on sama info patsiendile kaasa anda ka kirjalikult. Vestlust ei ole hea pidada protseduuride ajal ning patsiendile tuleb jätta piisavalt aega rahunemiseks, küsimuste esitamiseks ja vastuste peegeldamiseks. Arusaamatuste ja teadmatusest tingitud ärevuse vähendamiseks on soovitatav informeerida patsienti tema lähedaste juuresolekul.

Kasutatud kirjandus

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Need for information and informing outpatients – poll study in the Oncology and Hematology Clinic of the North Estonia Medical Centre

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Every patient has a right to receive enough information from the healthcare employee tending to them, in order to help themselves with recovery or to alleviate their condition (Võlaõigusseadus, 2001). However, contemporary research papers demonstrate that patients with cancer need more information about the disease, treatment, and side effects than is typically provided by the healthcare professionals. Therefore, the cancer patient is inevitably unsatisfied with the amount and quality of information, in addition to their existing health problems, and the deepening understanding that healthcare workers do not understand the informational needs of the patients. (McCaughan & McKenna, 2007; Matsuyama et al., 2013; Goss et al., 2015). Since there is no systematic research of which information, in what form, and by whom the cancer patients need in Estonia, a poll study was carried out in collaboration with University of Tartu and the North Estonia Medical Centre from October 2018 – February 2019 among the patients of a cancer centre.

The aim of the research was to describe the satisfaction of out-patients of the North Estonia Medical Centre in the Oncology and Hematology Clinic as to the information received about the disease, the treatment and side effects, and their needs about additional information and a special nurse-counsellor.

It is a quantitative, empirical, and descriptive study. The consecutive sample consisted of 146 cancer patients who visited the North Estonia Medical Centre the Oncology and Hematology Clinic as out-patients in 2018/2019 during a four month period. The data was collected by questionnaires compiled by Jaal and Jugar (Jugar et al., 2017), which were adjusted according to the objective of the study. Data was analysed in Microsoft Excel 2010, and descriptive statistics was used for presenting the results, and the Cronbach alfa coefficient was applied to evaluate the credibility of the instrument.

In the study, it was found that most patients were satisfied with receiving further information about the diagnosis and its implications, and the location of the tumour. They were the least satisfied with information regarding the causes of the disease and disease-related economic and social changes. More than 80% of the patients noted that their main information source was a specialist doctor about the disease, treatment, and the side effects. Almost half of the respondents had noted a nurse, special nurse-counsellor, an information leaflet, and/or a books as an additional information source. They found the information gained from a specialist doctor to be the most important of all informational sources (depending on the topic, and in the opinion of 82–84 % of the respondents). Nurses and information leaflets or books were necessary, as sources were equally used for an average of 80 % of the respondents. In order to gain additional information, 75 % of the participants were ready to turn to special nurse-counsellor. The preferred communication form was an eye-to-eye conversation.

In order to provide quality healthcare service, it is important to implement the information gained through this research concern-ing what information, when, and how it is to be shared with cancer patients. Based on the study's results, necessary changes will be made in the study environment to more efficiently organise outpatients' appointments by the attending nurse, and share the information there. One of the suggestions was to compile specific checklist with conversation topics for nurses' use during their independent appointments, in order to be convinced that the patient has received and understood necessary information at every appointment. Forwarding the information should take place at face-to-face conversations, but it is recommended to also give the same information in a written form to the patient. Conversations should not be carried out during any procedures, and the patient should be given enough time to calm down, to ask questions, and to reflect on the answers. In order to avoid misunderstandings and anxiety caused by ignorance, it is recommended to inform the patient while in the presence of their close ones.

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Õde-koordinaator kui oluline lüli vähiravi teekonna patsiendikesksel kujundusel

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Artikkel käsitleb avaliku sektori innovatsioonitiimi ja Põhja-Eesti Regionaalhaigla ühisprojekti, mille käigus tuvastati vähiravi teekonnal patsiendi jaoks kriitilised puutepunktid ning töötati välja lahendused, mida asuti piloteerima. Artiklis mainitakse ära olulisemad tähelepanekud ja lahendused.

Projekti eesmärk oli kaardistada kuue enamlevinud vähipaikmega (rinna-, emakakaela-, naha-, kopsu-, jämesoole- ja eesnäärmevähi) patsientide raviteekonnad ning tuvastada nendes võimalikud kitsaskohad, mille olemasolul teha ettepanekud patsiendikogemuse parendamiseks. Koostöös Põhja-Eesti Regionaalhaigla ja teiste osapooltega piloteeritakse ettepanekutele tuginevaid lahendusi. Projekt hõlmab patsiendi jaoks terviktekeonna probleemide kaardistust, mille etappideks on: sümptomite esimesed märgid; esimene visiit; diagnoosi saamine, ravi ja järelravi/-kontroll. Projekt kattis ka lahenduste väljatöötamist ning ettepanekuid perearstide, eriarstide, palliatiivravi jt osapoolte tegevuse parendamiseks patsiendi teekonnast lähtuvalt.

Toe vajadus algab diagnoosi ootamisest. Ühe esimese olulise tõdemusena tõid patsiendid välja, et nende jaoks algab kriitiline periood juba enne diagnoosi saamist. Perioodil, kui patsiendid on ära andnud oma analüüsid ja jäävad ootama nende tulemusi (10–14 päeva), hakkavad nad tekkivatele küsimustele vastuseid otsima internetist, tutvusringkonnast või alternatiivmeditsiinist. Mõned olulisemad tsitaadid, mis seda ilmestavad: *„Mida ma saaksin iseenda heaks teha?", „Otsisin abi kõikjalt – dr Google'ist ja alternatiivmeditsiinist", „Mida tohib ja mida ei tohi teha – keegi ei andnud selgeid juhiseid".*

Patsiendid ja nende lähedased soovivad olla teadlikud kõigest, mis toimub, sh oma ravivalikutest ning ka sellest, mida nad ise saavad teha oma olukorra parendamiseks. Vestlustest nii patsientide kui ka lähedastega tuli välja, et tegelikkuses ei oska patsiendid ega lähedased pöörduda kellegi poole, kui mure on käes. Kriitilises olukorras olles ei suuda nad kõike ise meeles hoida ega süsteemi rägastikus orienteeruda. Ka arstid nentisid, et nad peavad üsna sageli tegelema patsiendi elukorralduslike probleemidega, tehes seda kõigi teiste vajalike toimingute, sh raviotsuste arvelt.

Lahendusena töötati välja paikmepõhine õde-koordinaatori ametikoha kontseptsioon, mille testimistega käesoleval hetkel tegeletakse. Õde-koordinaator oleks patsiendile ja lähedastele suunatud kontaktisik, kes toetaks ja oleks abiks kogu raviprotsessi vältel, olles osa multidistsiplinaarsest ravimeeskonnast, kes vähendab patsiendi ja tema lähikonna koormust erinevate osapooltega suhtlemisel, pakkudes patsiendile proaktiivset nõustamist ja tuge.

Patsiendi multidistsiplinaarne käsitlus. Vestlustest arstidega selgub, et patsiendid, kes väidavad, et nad ei vaja abi ja saavad ise hakkama, on need, kes hiljem tuge kõige enam vajavad. Teiselt poolt ei oska inimesed sageli oma abivajadusest rääkida, nt kuidas hakkama saada igapäevaeluga hajaasustusega piirkondades vms. Seda ilmestab ka tsitaat *„Võtan sotsiaaltöötajaga ühendust siis, kui keemiaravi saab läbi“*. Sellest tulenevalt oleks õde-koordinaatori üks ülesanne hinnata vajadust palliatiiv- ehk toetus- ja taastusravi järele. Isegi kui patsient väidab abi mitte vajavat, võib tema mure seisneda selles, et ta on ainsaks toeks oma lähedasele (nt lapsele, eakale vanemale) ja vajab seega abi oma lähedase tõttu. Ka teadmised, kuidas ära tunda ärevushoog või depressioon ning mida sellisel juhul teha, on olulised patsiendi võimestajad. Proaktiivsed visiidid õde-nõustaja, sotsiaaltöötaja, psühholoogi või hingehoidja juurde, mille käigus antakse patsiendile nõu, kuidas oma olukorraga toime tulla, on olulised ravisoostumuse

tagamisel ning ravi kõrvaltoimetega ja kaasnevate teguritega (toitumine, sotsiaalsed, majanduslikud ja psühholoogilised mõjurid) toimetulekul. Vaid sel moel saab patsient abi just siis, kui ta seda vajab.

Kõigeks selleks tuleb aga välja töötada hindamisinstrumendid, mis aitaksid õde-koordinaatoril hinnata patsiendi abivajadust. Samuti tuleb täpsustada ja täiendada paikmepõhiseid käsitlusjuhendeid tugiteenustele ning toetus- ja taastusravile. Lisaks tuleks hoolikalt kaaluda patsiendi edastatud tulemus- ja kogemusnäitajate (*Patient Reported Outcome Measurement / Patient Reported Experience Measurement*) kasutuselevõttu digitaalse lahenduse kaudu, olgu selleks vähidiagnoosi spetsiifiline (nt Noona, Kaiku Health vms) või enamaid diagnoose hõlmavad tarkvara.

Kokkuvõtvalt võib öelda, et just õde-koordinaator on oluline lüli, kes võtab koormust ära nii patsientidelt, nende lähedastelt kui ka arstidelt. Proaktiivselt nõustades ning varustades patsienti informatsiooniga, mis on vajalik olukorraga toimetulekuks, aitab ta kaasa paremale ravisoostumusele ning kõrvaltoimetega hakkama saamisele.

Nurse-coordinator as an important link on designing patient-centered journey of cancer care

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This paper is about a joint project conducted by public sector innovation team and the North Estonia Medical Centre. Critical contact points for the cancer patient on their journey were identified and solutions, which were piloted, were developed during the project. Most important observations and solutions are mentioned in the paper.

The aim of the project was mapping the health journeys of patients of six most common cancer locations (breast, cervical, skin, lung, large bowel and prostate cancer), identifying possible bottlenecks in it, and if finding any to make suggestions for the improvement of patient experience. Solutions based on suggestions are being piloted in cooperation with the North Estonia Medical Centre and other parties. For the patient the project involves mapping the problems of the whole journey, which phases are: first signs of the symptoms, first visit, receiving a diagnosis, treatment, follow-up treatment/check-up. Scope of the project also covered developing the solutions and suggestions for improvement of activities of general practitioners, specialist doctors, palliative care and other parties depending on patient's journey.

Need of support begins with waiting for the diagnosis. One of the first important facts notified by the patients was that for them the critical period begins already before receiving the diagnosis. During the period after the patient has performed the tests and and is waiting for the results (10-14 days), they turn to look for the answers to every possible questions arising from the Internet, their circle of friends or alternative medicine. Some most important quotes illustrating it *"What could I do for myself?", I was looking for help everywhere - dr. From Google and alternative medicine", "What is allowed and what is not allowed - no one gave clear instructions"*.

Patients and their close ones would like to be aware of everything, what is going on, incl. their treatment options and about, what they could do to improve their situation. When talking to the patients and their close ones, it was found that in reality the patients and their close ones do not know whom to turn to in case of a problem. When in critical situation, they are not able to remember everything nor to orientate in the jungle of the system. On the other hand, the doctors mentioned that they often had to handle the aspects of organisation of patient's life. For them everything that happens reduces the time meant for other activities, incl. making decisions for treatment.

As a solution a location-based nurse-coordinator position concept was developed, which testing is in process at the moment. It would mean a contact person referred to the patient and his next of kins, who would support and help during the whole treatment process. She would be a part of a multidisciplinary treatment team, who reduces the workload of the patient and their closest relatives when communicating to different parties. Offering proactive counselling and support is also important.

Multidisciplinary patient management. When talking to the doctors, they highlight that the patients that claim not to need help but to manage themselves, are the ones needing it the most later. On the other hand people very often do not know how to talk about their problems, for example about how to cope with daily life in rural areas with dispersed settlement etc. It is illustrated by a quote, "*I will contact the social worker after the end of chemotherapy*". Based on that one of the tasks of the nurse-coordinator would be to assess the need for palliative or supporting treatment. Even if the patient claims not needing help, their problem can be that they are the only support for their close

ones (e.g. child, elderly parent) and therefore they need help because of their close ones. Also, how to identify an anxiety attack, depression, and what to do in that case, are important to empower the patient. Proactive visits to the nurse-counsellor, social worker, psychologist or someone similar, where the patient is provided with advice how to cope with their situation, are important in ensuring the treatment consent and with better management of side effects of the treatment (treatment, nutrition, social, economic and psychological effects). This way the patient would get help exactly when he needs it.

It would require developing an assessment instrument, which could help the nurse-coordinator to evaluate patient's need for help. Also, location-based management instructions to support services and supporting treatment would need speficiations and updating. In addition it should be considered to implement Patient Reported Outcome Measurement/Patient Reported Experience Measurement, with the help of digital solutions. Either it is cancer-diagnosis-specific software (e.g. Noona, Kaiku Health, etc.) or software involving more diagnoses.

In conclusion it can be said that the nurse-coordinator would be an important link who reduces the workload of patients, their closest relatives and the doctors. Also, when counselling proactively and providing needed information to the patient with management of their situation, he/she helps with better treatment consent and management of side effects.

stendiettekanded
(originaalkeeles)

poster presentations
(*in the original language*)

Õendusdiagnooside, -sekkumiste ja -tulemuste dokumenteerimise kvaliteet Põhja-Eesti Regionaalhaigla õendusdokumentatsioonis

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Taust. Põhja-Eesti Regionaalhaigla rakendab õendusdokumentatsiooni elektroonilist keskkonda, arendades standarditud õenduskeelt NNN (NANDA-I, NOC – *Nursing Outcomes Classification*, NIC – *Nursing Interventions Classification*). Alustuseks viidi 2017. aastal läbi õendusdokumentatsiooni kvaliteedi vaatlus, et otsustada vajalike muutuste üle dokumentide sisus ja vormis ning määratleda personali koolitusvajadus.

Eesmärk. Kirjeldada Põhja-Eesti Regionaalhaigla õendusdokumentatsiooni õendusdiagnooside, -sekkumiste ja -tulemuste dokumenteerimise kvaliteeti.

Meetod. Empiiriline retrospektiivne läbilõikeline kvantitatiivne ja kirjeldav uurimus. 150 õendusdokumentatsiooni struktureeritud vaatlus Q-DIO (*Quality of Diagnoses, Interventions and Outcomes*) vaatlusprotokolli alusel. Kirjeldav ja analüüsiv statistika programmis MS Excel 2016.

Tulemused. Õendusdiagnooside, -sekkumiste ja -tulemuste dokumenteerimise kvaliteet PERH-i õendusdokumentatsioonis oli halb, sest ei andnud kvaliteetset ülevaadet kogu õendusprotsessist tervikuna. Patsiendi terviseseisundi hindamine oli osaliselt dokumenteeritud, sõltuvalt õendusanamneesi vormist. Õendusdiagnoosid ise ja nende seotus õendussekkumiste ja -tulemustega olid dokumentatsiooniti kirja pandud väga ebaühtlase kvaliteediga. Kõige rohkem kvaliteetseid dokumenteeringuid oli õendussekkumiste kirjeldamisel. Õendussekkumiste efektiivsus oli enamasti dokumenteeritud puudulikult. Õendustulemused olid pooltes dokumentides vähemalt osaliselt NOC-i järgi mõõdetavalt dokumenteeritud, õendustulemuste kvaliteedi kohta olid sissekanded väga erineva tasemega.

Ettepanekud. Tulemustest lähtuvalt muuta õendusanamneesi vastavalt Gordoni Funktsionaalse Terviseseisundi Hindamise skeemile. Lisada õendusloo täitmise juhenditesse NNN-i kasutamine. Arendada õenduskoolitust: 1) õendusjuhtidele standarditud õenduskeele rakendamisest; 2) õdedele protsessipõhisest ja analüütilisest mõtlemisest; 3) õdedele oodatud ja saavutatud õendustulemuste regulaarsest määratlemisest ning patsientide kaasamisest otsustamisprotsessi. Planeeritud arendustöö tõhususe hindamiseks on soovitatav teha hiljem uus vaatlus samas uurimiskeskkonnas.

Professionaalse õenduse mudeli koostamine Põhja-Eesti Regionaalhaiglas

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Taust. Professionaalse õenduse mudel (edaspidi PÕM) on strateegiliseks lähtekohaks, mis toetab õdesid nende igapäevatöös ning on ainulaadne iga organisatsiooni jaoks. Mudeli visuaalne skeem kirjeldab ära rollid ja näitab, kuidas õed praktiseerivad, teevad koostööd, suhtlevad ja arenevad erialaselt selleks, et tagada kõrge kvaliteediga õendusabi oma organisatsioonis. Eestis ei ole professionaalse õenduse mudelit (*Professional Practice Model*) varem koostatud.

Eesmärk. Koostada Põhja-Eesti Regionaalhaigla professionaalse õenduse mudel.

Metoodika. Mudeli koostamisel kasutati kvalitatiivset meetodit: fookusgruppi ekspertide arvamuste kogumiseks ning strateegiliste suundade ja nende sisu välja selgitamiseks konsensuse põhimõttel. Mudeli koostamisel on arvestatud Põhja-Eesti Regionaalhaigla arengukava, magnethaigla tunnustuse programmi (*Magnet Recognition Program®*), „Rahvastiku tervise arengukava 2020–2030" ning „Eesti õenduse ja ämmaemanduse arengustrateegiat 2011–2020".

Tulemused. Regionaalhaigla professionaalse õenduse mudelis on määratletud meie prioriteetsed eesmärgid: eestvedamine – töökeskkond ja -kultuur, koostöö; tulemused – kvaliteet ja ohutus, õppimine ja õpetamine, teenuse järjepidevus ja kättesaadavus; innovatsioon – teadus- ja arendustegevus, arendusprojektid. Mudeli keskmes on inimesed rõhutamaks, et kõigis oma tegevustes ja hoiakutes lähtume inimkesksusest. Me hoolime patsiendist ja tema lähedastest, hoolime kaastöötajast ja iseendast.

Rakenduskava.
- PÕM-i rakendamine koolitustel aastatel 2020–2023.
- Rakendamise efektiivsuse hindamine õdede rahulolu uuringuga aastatel 2024–2030.
- Õdede kaasamine igale PÕM-i tegevussuunale vastavate arendusprojektide väljatöötamiseks ja läbiviimiseks alates aastast 2020.
- Töörühmade arendusprojektide hindamine lähtuvalt seatud eesmärkide täitmisest.

Documentation of Nursing Care and Need for Training in Institutions Offering Home Nursing Services in Estonia

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Background. The documentation of nursing care is not homogeneous within the home nursing services. Documentation is often lacking continuity which leads to the worsening of a patient's condition. This, in turn, increases the cost of both human and financial resources. It also results in additional patient suffering and potential further deterioration in quality of life.

Aim. The aim of the study is to describe the documentation of nursing care and need for training in institutions offering home nursing services. The study is quantitative describing study.

Method. For data collection, a Google form was used which included a questionnaire with a possibility to ask both open and closed questions. The sample of respondents included institutions that have contracts with Estonian Health Insurance Fund for offering home nursing services in Estonia. The sample consisted of 48 home nursing services, 22 home nursing services responded to the questionnaire. For data analysis, Social Sciences Statistics Package SPSS 19.0 was used. Descriptive statistics were used to describe and analyse the results of the study.

Results. The results of the research showed that nursing cases are documented differently in different institutions, there is no commonly agreed on or understood starting point. Both NANDA-I taxonomy and patient health problems are used. Documentation is done both electronically and on paper. On the other hand, it cannot be denied that there is an interest to change documentation more convenient and unambiguous. Most of the institutions offering home nursing services are wishing for more trainings about nursing cases documentation.

Conclusions. According to the results, the project will be initiated to assess the quality of nursing documentation in Estonia and to harmonize the quality of nursing care in the whole country.

Documentation of the information needs of oncology patients

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Background. Nurses function as one of the most important information sources for patients, dealing with documentation up to 25% of their working time. Data gaps are often found in nursing documentation, making it difficult to understand and provide consistent patient-focused nursing. The process of meeting the information needs of oncology patients has not been studied in Estonia, and there is insufficient information on how to inform patients and how to document it. Therefore, in 2017, a collaboration between health care college and hospital was established.

Aim. The desirable outcome of the project is providing the patients with the necessary information in the required amount of daily clinical work.

Method. Nursing records of 28 patients at the oncology undergoing inpatient treatment were observed. Data extraction was performed using the observation form. Undocumented information needs were assessed based on the Nursing Intervention Classification. From the observation forms, data was aggregated into a Microsoft Excel spreadsheet, grouped according to the observation form and analyzed by content analysis.

Results. Nursing records of 24 female and 4 male patients were observed. The mean age of patients was 63 years. An average of 2.9 documented information needs per patient and 5.9 episodes of undocumented information need were documented. The documented information needs were addressed by the following topics: Organizational demands, self-management, medication, home treatment and monitoring. There was an undocumented need for information in the following areas: comorbidities and morbidity, oping, nutrition, treatment process and medication.

Conclusions. Nursing documentation is uneven. Nurses need to become more aware of the importance of documenting as an important communication tool between nurses, providing quality nursing care.

Impact of training on the quality of nursing documentation in the Psycho-gerontology department

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Background. The purpose of nursing documentation is to ensure communication between health professionals, continuity of activities, and patient safety. High-quality nursing documentation must be patient-centered. Nursing documentation is often of uneven quality, which hinders the availability and continuity of nursing care.

Method. The purpose of the study was to describe the quality of nursing documentation. The nurses received for 16 hours of NANDA-I Nursing Diagnosis Training. 19 nursing records were observed 3 months before training, and 16 nursing records 3 months after. Data was analyzed by content analysis.

Results. A total of 82 nursing diagnosis were used prior to training (an average of 4.3 nursing diagnosis per nursing record). However, there were only 34 well-worded and valid nursing diagnosis (1.8 nursing diagnosis per nursing record) and 48 false nursing diagnosis. There were 13 correctly formulated and valid problem-focused and 21 risk diagnosis, no health-promotion diagnosis. The most commonly used problem-focused diagnosis was acute pain (8) and risk diagnosis was risk for falls (19). A total of 53 nursing diagnosis were used after training (3.3 nursing diagnosis per nursing record). There were 50 well-formulated and valid nursing diagnoses (3.1 nursing diagnosis per nursing record): 8 problem-focused nursing diagnosis, 30 risk diagnosis, 12 syndromes and no health promotion diagnosis. The most commonly used problem-focused diagnosis was acute pain (3) and risk diagnosis was risk for falls (8). In all 12 cases, the frail elderly syndrome was reported as syndrome.

Conclusions. The results of the research show a clear benefit of training. After the training, a frail elderly syndrome, which did not exist before the training, was brought out as a new one. The proper use of nursing diagnosis had improved markedly. From now on, greater attention must be paid to the use of health promotion nursing diagnosis.

Impact of training on the quality of nursing documentation in a nursing care department

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Background. Assessing and documenting the patient's condition is crucial to ensure appropriate nursing interventions. Applying nursing diagnoses is important to ensure evidence-based nursing care. The quality of nursing care suffers from the lack of appropriate documentation. Nursing documentation is of uneven quality in Estonia, which hinders the availability and continuity of nursing care. In addition, quality requirements and indicators are not used to assess and compare nursing care consistently.

Aim. To describe the quality of nursing documentation.

Method. 35 nursing records were observed 3 months before and 31 nursing records 3 months after the training (16 hours) of NANDA-I nursing diagnosis. Data were analyzed by content analysis.

Results. A total of 142 nursing diagnosis were used prior to training (an average of 4.1 nursing diagnosis per nursing record). However, there were only 91 well-worded and valid nursing diagnosis (2.6 nursing diagnosis per nursing record) and 51 false nursing diagnosis. There were 45 correctly formulated and valid problem-focused and 43 risk diagnosis, 3 syndromes, no health-promotion diagnosis. The most commonly used problem-focused diagnosis was self-care deficit (10) and risk diagnosis was risk for falls (15). A total of 103 nursing diagnosis were used after training (3.3 nursing diagnosis per nursing record). There were 99 well-formulated and valid nursing diagnoses (3.2 nursing diagnosis per nursing record): 28 problem-focused nursing diagnosis, 49 risk diagnosis, 22 syndromes and no health promotion diagnosis. The most commonly used problem-focused diagnosis was chronic pain (5) and risk diagnosis was risk for falls (11). In all 22 cases, the frail elderly syndrome was reported as syndrome.

Conclusions. The training had clear benefit: after training, the frail elderly syndrome was used more often. Also, the proper use of nursing diagnosis had improved markedly. From now on, greater attention must be paid to the use of health promotion nursing diagnosis.

The influence of NANDA-I nursing diagnoses training on practice in home care nursing

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Background. Growing interest in using NANDA-I nursing diagnoses has been observed in health care facilities due to the fact that it ensures the use of a common terminology for patient's health assessment and in planning nursing care.

Aim. The aim of the research was to describe the influence of NANDA-I nursing diagnoses training on practice in home care nursing. Participants: Participants were recruited from one of the largest home care facilities in Tallinn, Estonia. All home care nurses (N=27) participated in the study.

Method. Study is empirical, quantitative and descriptive. Data was collected from 27 home care nurses from OÜ Koduõde by anonymous questionnaire during the period of 20.05.2015 –19.06.2015.

Analysis: To analyse data, SPSS 19.0 was used. Descriptive statistics, frequency contributions and chi-square test were used for data analyses.

Results. 53% of home care nurses were using NANDA-I nursing diagnoses every day. 70,4% of home nurses considered it to be important to use the NANDA-I as one possibility to use the "same language". All participants agreed that using NANDA-I in nursing documentation needs special training. 50% of them said that using NANDA-I demands more patient-centered nursing care. 71,4% of home care nurses agreed that the domain that has undergone the most change in nursing documentation is terminology.

Conclusions. Results of the study showed the importance of training in the process of introducing new documentation requirements into nursing practice. This study helps nursing teachers to enhance the training process and therefore to improve the quality of nursing care.

Nursing support for the breast cancer patient's quality of life in the North Estonian Medical Centre

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Background. A patient's quality of life being supported by nurses is essential for professional development. Society expects health services to be more patient-centered, but there is more of a health service authority-directed than a patient-centered approach in Estonia, meaning that the needs of patients are not always taken into account. Each year, about 600 cases of breast cancer are diagnosed.

Aim. To describe nursing support for the breast cancer patient's quality of life in North Estonian Medical Centre, and to establish correlations between the patient's background variables and nursing support given to patients.

Method. The research is of quantitative, empirical, and descriptive nature. The sample consisted of adult outpatient breast cancer patients of the North Estonian Medical Centre. The data was collected using a B-fact questionnaire. Statistical data processing was performed with the SPSS 22.0 package. The Spearman correlation analysis and χ2-test were used to describe correlations between patient's background and nursing support.

Results. The results showed that patients often did not get enough information and practical support from nurses, and the lowest rating of nursing support was given to sexuality related issues. Breast cancer patients gave the highest ratings to emotional support.

Conclusions. The research findings show that patients do not get enough support from nurses. It can be also due to the nurses' duties at the workplace, but nurses should be more independent in encouraging patients and providing information.

The Quality of Nursing Documentation in Tallinn Children's Hospital

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Background. Growing interest in using NANDA-I nursing diagnoses ensures using common terminology for patient's health assessment and in planning nursing care. Nursing documentation is uneven in quality in Estonia, and this hinders the availability and continuity of nursing care. In addition, quality standards and indicators are not used for consistent assessment and comparison of nursing care. Nurses tend to keep records of clinical care offered to patients and do not consider them to be part of the entire nursing process. It leads to poor-quality nursing documentation, which prevents communication between professionals. This in turn affects the quality of patient care.

Aim. To describe the quality of nursing documentation in the Tallinn Children's Hospital.

Method. The research is based on quantitative, descriptive study.

Sample: Nursing records before and after NANDA-I nursing diagnoses training for nurses were used for evaluation. The selection criteria were: patients had to be in the hospital for at least 3 days, and there was an individual nursing care plan for the patient. For data collection the D-Catch instrument was used, which is established to evaluate the correctness and accuracy of nursing documents. The evaluation is performed on the 4-score Likert-type scale, and the subjects of evaluation are the structure of nursing documents, nursing anamnesis, nursing diagnoses and interventions, evaluation of the progress and results and legibility of documentation. The data was collected from nursing records during the period September 2016 – March 2017. SPSS 19.0 was used. Descriptive statistics, means and t-test were used for comparison of the differences in nursing record quality before and after NANDA-I nursing diagnoses training for nurses.

Results. 87 nursing record from 8 departments were evaluated (42 before and 45 after training). The results showed statistically reliable differences in the improvement of the quality of the structure of nursing record ($t(85)=-3.004$, $p=0.004$), quality of nursing anamnesis ($t(85)=-2.915$, $p=0.005$), quantity of nursing diagnoses ($t(85)=-4.387$, $p<0.0001$), quality of nursing diagnoses ($t(85)=-5.768$, $p<0.0001$), quantity of nursing interventions ($t(85)=-2.982$, $p=0.004$), quality of nursing interventions ($t(85=-4.343$, $p<0.0001$), quantity of assessment ($t(85)=-2.439$, $p=0.017$) and quality of assessment ($t(85)=-3.209$, $p=0.002$). No statistically reliable differences were found for the quantity of nursing anamnesis and the legibility of documentation.

Conclusions. Results of the study showed the importance of training in the process of the application of new documentation requirements into nursing practice.