

Folder eCC\_00018880 is in stage Collaboration\_Ongoing

**Name of the University, Hospital, Research Institute, Academy or Ministry**

University Hospital of North Norway (UNN)

**Name of the Division, Department, Unit, Section or Area**

Norwegian Centre for e-Health Research (NSE)

**City** Tromsø **Reference Number** NOR-18

**Title** WHO Collaborating Centre for Digital Health and Telemedicine

**Report Year** 09-2018 to 09-2019

**1. Annual report on the agreed workplan**

**Describe progress made on the agreed workplan. For each activity, detail (1) the actions taken, (2) the outputs delivered, as well as (3) any difficulties that may have been encountered. Three responses are expected. [maximum 200 words per activity]. Indicate, if an activity has been completed previously, has not yet started or has been placed on hold.**

**Activity 1**

Title: Support the delivery of country level activities for Digitalization of Health Systems

Description: Specialist technical expertise is often required by WHO as part of delivering support to Member States in their delivery of national programmes for health systems digitalization. Support from the collaborating centre will be used for selected missions to countries and in contributing to the production of reports and other publications by WHO.

Status: completed

- Czech Republic - eHealth strategy follow up - experts made available, request postponed

**Activity 2**

Title: Support the delivery of the WHO Digitalization of Health Systems symposium, Copenhagen, 2019

Description: Assistance in developing and delivering the WHO/Europe Digitalization of Health Systems symposium, Q1/2019 is being requested to help ensure a fruitful and technically relevant outcome is achieved.

Status: completed

NSE provided support for developing and delivering the WHO Future of Digital Health Systems symposium in Copenhagen 2019.

- Contributions to development of the programme
- Identification of speakers and presenters
- Technical materials
- Development of the webpages for the symposium
- Communications services before and during the symposium
- Documentation of the sessions, including notes and summaries

**Activity 3**

Title: Assistance for authoring/delivery of priority publications on the Digitalization of Health Systems

Description: Assistance is required for authoring/delivery of priority publications on the digitalization of health systems. WHO will use this input to ensure competent and accurate information is provided to Member States.

Status: completed

Publications from NSE in 2019 (registered in Cristin - national database of published knowledge according to affiliation):

Anne Helen Hansen, Tor Claudi, Eirik Årsand, "Use of Electronic Health and Its Impact on Doctor-Visiting Decisions Among People With Diabetes: Cross-Sectional Study", 2019, Journal of Medical Internet Research

Anne Helen Hansen, Meghan Bradway, Jan Brož, Tor Claudi, Øystein Henriksen, Silje C Wangberg, Eirik Årsand, "Inequalities in the Use of eHealth Between Socioeconomic Groups Among Patients With Type 1 and Type 2 Diabetes: Cross-Sectional Study", 2019, Journal of Medical Internet Research

Gro Karine Rosvold Berntsen, Frode Strisland, Kristian Malm-Nicolaisen, Berglind Smaradottir, Rune Werner Fensli, Mette Røhne, "The Evidence Base for an Ideal Care Pathway for Frail Multimorbid Elderly: Combined Scoping and Systematic Intervention Review", 2019, Journal of Medical Internet Research

Line Silsand, Gro-Hilde Severinsen, Gunnar Ellingsen, Bente Christensen, "Structuring Electronic Patient Record Data, a Smart Way to Extract Registry Information?", 2019, Reports of the European Society for Socially Embedded Technologies

Asbjørn Johansen Fagerlund, Maria Iversen, Andrea Ekeland, Connie Malén Moen, Per M Aslaksen, "Blame it on the weather? The association between pain in fibromyalgia, relative humidity, temperature and barometric pressure", 2019, PLOS ONE

Asbjørn Johansen Fagerlund, Inger Marie Holm, Paolo Zanaboni, "General practitioners' perceptions towards the use of digital health services for citizens in primary care: a qualitative interview study", 2019, BMJ Open

Ashenafi Zebene Woldaregay, Eirik Årsand, Taxiarchis Botsis, David Albers, Lena Mamykina, Gunnar Hartvigsen, "Data-driven blood glucose pattern classification and anomalies detection: Machine-learning applications in Type 1 diabetes", 2019, Journal of Medical Internet Research

Kerstin Denecke, Elia Gabarron, Rebecca Grainger, Stathis Th. Konstantinidis, Annie Y.S. Lau, Octavio Rivera-Romero, Talya Miron-Shatz, Mark Merolli, "Artificial Intelligence for Participatory Health: Applications, Impact, and Future Implications", 2019, Yearbook of Medical Informatics

Anne Helen Hansen, Tor Claudi, Eirik Årsand, "Associations Between the Use of eHealth and Out-of-Hours Services in People With Type 1 Diabetes: Cross-Sectional Study", 2019, Journal of Medical Internet Research

Meghan Bradway, Konstantinos Antypas, J. Lee, N. Wroblewska, Eirik Årsand, "Frameworks for evaluating mhealth technologies lack patient focus", 2019, Diabetes Technology & Therapeutics

Meghan Bradway, Håvard Kvalvåg Blixgård, Miroslav Muzny, Alain Giordanengo, Silje C Wangberg, Eirik Årsand, "What can be learned by analyzing patient-gathered data from a self-management diabetes app", 2019, Diabetes Technology & Therapeutics

Meghan Bradway, Silje C Wangberg, Håvard Kvalvåg Blixgård, Miroslav Muzny, Eirik Årsand, "Self-recruited T2D patients' engagement in a self-management tool: Feedback and suggestions", 2019, Diabetes Technology & Therapeutics

Pietro Randine, Miroslav Muzny, D. Micucci, Eirik Årsand, "System for automatic estimation and delivery of quickly-absorbable carbohydrates", 2019, Diabetes Technology & Therapeutics

Elia Gabarron, Berglind Smaradottir, Eirik Årsand, "Health promotion priorities for diabetes: Results of a Delphi study", 2019, Diabetes Technology & Therapeutics

Ellen Christin Arntzen, Bjørn Straume, Francis Odeh, Peter Feys, Paolo Zanaboni, Britt Normann, "Group-Based Individualized Comprehensive Core Stability Intervention Improves Balance in Persons With Multiple Sclerosis: A Randomized Controlled Trial", 2019, Physical Therapy

Alex S. Cohen, Taylor L. Fedechko, Elana K. Schwartz, Thanh P. Le, Peter W. Foltz, Jared Bernstein, Jian Cheng, Terje Holmlund, Brita Elvevåg, "Ambulatory vocal acoustics, temporal dynamics, and serious mental

illness", 2019, Journal of Abnormal Psychology

Mattias Georgsson, Nancy Staggers, Eirik Årsand, André William Kushniruk, "Employing a User-Centered Cognitive Walkthrough to Evaluate a mHealth Diabetes Self-Management Application: A Case Study and Beginning Method Validation", 2019, Journal of Biomedical Informatics

Eirik Årsand, Meghan Bradway, Elia Gabarron, "What are diabetes patients versus health care personnel discussing on social media?", 2019, Journal of Diabetes Science and Technology

Astrid Synnøve Buvik, Trine Strand Bergmo, Einar Bugge, Arvid Småbrekke, Tom Wilsgaard, Jan Abel Olsen, "Cost-Effectiveness of Telemedicine in Remote Orthopedic Consultations: Randomized Controlled Trial", 2019, Journal of Medical Internet Research

In addition: numerous lectures, posters and presentations as well as articles in non peer reviewed journals on related topics

#### **Activity 4**

Title: Provide assistance to WHO/Europe in developing expertise and outputs for developing digital and health literacy in Europe.

Description: Technical assistance is required for the development of a regional scoping paper that examines the potential approaches, dimensions, barriers and success factors for developing national digital health literacy programmes.

Status: completed

Main activity has been through the participation and support of the WHO Symposium in Copenhagen in February 2019.

## **2. Annual report on other activities requested**

**Should WHO have requested activities in addition to the agreed workplan, please describe related actions taken by your institution [maximum 200 words]. Please do not include in this report any activity done by your institution that was not requested by and agreed with WHO.**

Director of NSE, Dr Stein Olav Skrøvseth, participated in the AI for Health session at the AI for Good Summit as well as at the informal meeting on fundraising for the WHO Digital Health and Innovation Department in Geneva, 28-31 May 2019.

## **3. Resources**

**Indicate staff time spent on the implementation of activities agreed with WHO (i.e. those mentioned in questions no. 1 and no. 2 above). Do not include any data related to other activities done by your institution without the agreement of WHO. Please indicate staff time using the number of "full-day equivalents" – a day of work comprising 8 hours (e.g. 4 hours work per day for 7 days should be recorded as 3.5 full-day equivalents).**

**Number of staff involved (either partially or fully)**

Senior staff	Mid-career staff	Junior staff, PhD students
13	1	1

**Number of full-day equivalents, total for all staff involved**

Senior staff	Mid-career staff	Junior staff, PhD students
138	0	6



Implementation of the agreed workplan activities (i.e. those mentioned in questions no. 1 and no. 2 above) normally require resources beyond staff-time, such as the use of laboratory facilities, purchasing of materials, travel, etc. Please estimate the costs of these other resources as a percentage of the total costs incurred (e.g. if you incurred costs of USD 100 and the value of your staff time was USD 50 which makes the total of USD 150, please report 33.3% and 66.7%).

Percentage of costs associated with staff time	Percentage of costs associated with other resources	Total
74.00	26.00	100.00

#### **4. Networking**