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

Universitat Oberta de Catalunya (UOC)

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

Faculty of Health Sciences

City Barcelona **Reference Number** SPA-50

Title WHO Collaborating Centre in eHealth

Report Year 04-2021 to 04-2022

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: Development of training courses in Telemedicine

Description: In collaboration with the PAHO Telemedicine Program, the UOC will develop 1 virtual course on the implementation of Telemedicine projects, free of charge for WHO and directed exclusively to external participants selected and contributed by PAHO/WHO. To this end, the UOC will use the PAHO document "Marco de Implementación de un Servicio de Telemedicina" ("Framework for the Implementation of a Telemedicine Service") (Novillo-Ortiz, David [ed.], 2016) in order to enhance its use throughout the Region of the Americas. The UOC will adapt the reference material to useful learning units for the course (seven didactic units, one per chapter of the reference document) and will contribute its teaching methodology and the UOC virtual campus to the students proposed by PAHO (a total of 20 per group). The WHO name and emblem will not be used on certificates of attendance, diplomas or similar awards to participants in training or other courses, organized as part of this activity.

Status: completed

The curriculum of the virtual course on the implementation of Telemedicine projects has been submitted to the PAHO. This virtual course uses the PAHO document "Framework for the implementation of a telemedicine service" and consists of seven didactic units, one per chapter of the reference document. It follows the teaching methodology of the UOC and makes the UOC virtual campus available to the students proposed by PAHO.

Our WHO Collaborating Centre actively participated in the development of the following technical notes that PAHO undertook to help Latin American countries to overcome the pandemic through the appropriate use of ICTs: "Introduction to Semantic Interoperability" <https://iris.paho.org/handle/10665.2/55417>, "Artificial Intelligence in Public Health" <https://iris.paho.org/handle/10665.2/53732>.

Our WHO Collaborating Centre together with RITMOS network has helped other institutions to develop virtual courses on the implementation of Telemedicine projects using the PAHO document "Framework for the Implementation of a Telemedicine Service" (i.e., <https://sites.google.com/a/uoc.edu/ritmos/project-updates/newcursointernacionaldetelemedicina>).

Activity 2

Title: Promote the use of eHealth in the countries of the region of the Americas

Description: In collaboration with the PAHO Digital Health Strategy in the Region of the Americas, the UOC will design and validate a shared health model (Sharing Health) and study how it could contribute in reducing social inequalities in health.

In addition, the UOC will collaborate with PAHO on regional eHealth reports and contribute to the analysis, results and conclusions of PAHO's First Regional Report on eHealth during the designation period. To this end, PAHO will provide the UOC with access to the necessary database(s) so that the UOC can proceed with the corresponding analysis. The WHO name and emblem will not be used on certificates of attendance, diplomas or similar awards to participants in training or other courses, organized as part of this activity.

Status: completed

The final study about the main motivations of people and their trust in robotics and artificial intelligence devices in healthcare [see 2n Annual Report SPA-50 WHO CC] has been published in an IF journal [<https://www.mdpi.com/1660-4601/18/23/12519>]. This study together with the published model of Sharing Health [<https://doi.org/10.3390/ijerph18084270>, see 3rd Annual Report SPA-50 WHO CC] complete the development of the second Activity.

On the other hand, our WHO CC has been actively involved in the development of the tool "Rapid Assessment Tool for Critical Data Gathering", designed for rapid assessment of health and health-related institutions and evaluates their capacity to gather critical, high-quality data in the COVID-19 pandemic response. The tool assesses institutional commitment to the timeliness and quality of data used for decision-making at all levels. It facilitates self-assessment to redefine pandemic priorities, identifies the capacity gap within international, national, and subnational data systems, and assesses the ability to provide reliable and constructive data. <https://iris.paho.org/handle/10665.2/53614?locale-attribute=en>

Activity 3

Title: Study on the adoption and use of mobile health (mHealth) between and with the countries of Latin America and the Caribbean

Description: To contribute to the work of PAHO / WHO in the implementation of health policies in the Region of the Americas, the UOC is committed to working on the identification of the main variables related to the development of mobile health (mHealth) in Latin America and the Caribbean, with special emphasis on health problems that can be addressed through the use of mobile technology, and the factors that either drive and weaken its progress.

Additionally, in order to strengthen this regional collaboration, two virtual debates will be developed, led by the UOC on the PAHO ICT4Health Community platform. Participants will be selected by PAHO and will include members contributed by PAHO itself, as well as those members of health governments, experts and health professionals who are interested in the adoption and use of mHealth in the Region of the Americas. The WHO name and emblem will not be used on certificates of attendance, diplomas or similar awards to participants in training or other courses, organized as part of this activity.

Status: completed

Two tools have been developed to contribute to the PAHO's work in the implementation of health policies related to mobile health, the one aimed at guiding the evaluation of the development processes of mobile health applications, and the one aimed at assessing the suitability of mobile health applications. Both tools to be part of the IS4H toolkit for the region developed by the PAHO have also been tested and assessed and the results are ready to be published.

Additionally, in the framework of the RITMOS network, a session called "Lessons from the pandemic: more international collaboration, better health" of the eHealth What If Forum 2021 "What if the digitalization accelerated by COVID-19 enabled us to transform health systems?" took place on December 1 at the UOC eHealth Center with the aim of strengthening collaboration between and with the countries of Latin America and the Caribbean region. This session was broadcast over the Internet and included several interviews with experts from the Central American Health Informatics Network (RECAINSA); the Continental University in Peru, the Ministry of Health of Colombia, and the Italian Hospital of Buenos Aires.

[<https://www.uoc.edu/portal/en/news/actualitat/2021/308-ehealth-WhatifForum-COVID19.html>]

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.

The report requested by the WHO Regional Office for Europe about the application of data and digital solutions to support surveillance strategies and draw implications for surveillance in the context of the COVID-19 pandemic and beyond [see 3rd Annual Report SPA-50 WHO CC] has been published in an IF journal [<https://doi.org/10.3389/fdgth.2021.707902>]

On December 20th, the development of a Telemedicine needs assessment checklist tool for Georgia was requested by the WHO Regional Office for Europe. This tool provides an assessment of the needs and readiness of the healthcare institution (gap analysis). This allows to highlight the needs and identify possible obstacles and problems faced by the institution when implementing a new telemedicine service program (financial, lack of staff or skills, inadequate IT infrastructure, lack of IT support, etc.), guiding the institution towards the sustainable development of the telemedicine service it needs.

A systematic review of telemedicine progress in Europe in response to COVID-19 was requested by the WHO Regional Office for Europe. This systematic review will provide a descriptive analysis of the current state of telemedicine in Europe through a systematic review of recent literature on European telemedicine projects using the PubMed, Google Scholar and Springer databases.

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
4	3	4

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

Senior staff	Mid-career staff	Junior staff, PhD students
45	25	65

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
80.00	20.00	100.00

4. Networking

Describe any interactions or collaboration with other WHO Collaborating Centres in the context of the implementation of the agreed activities. If you are part of a network of WHO Collaborating Centres, please also mention the name of the network and describe your involvement in that network [maximum 200 words].

During the preparation of the different technical notes (see Activity 1), we have interacted and collaborated with the PAHO/WHO Collaborating Center for Information Systems and Digital Health (Hospital Italiano de Buenos Aires, Department of Medical Informatics) and with the PAHO/WHO Collaborating Center for Information Systems and Digital Health (Center for Health Informatics, University of Illinois USA).

The development of a Telemedicine needs assessment checklist tool for Georgia has been carried out in collaboration with the WHO CC for Digital Health and Telemedicine (Norwegian Centre for E-health Research).