Quality assurance report Nº 4

D8.1

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Work package	WP8: Quality assurance
Nature	Report
Dissemination Level	Project consortium members
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Elaboration and edition of the document	Universidad de Buenos Aires (UBA) – Quality Auditor
Document description	Fourth quality audit report. This document describes the evolution in the implementation of the project activities, as well as the quality assurance activities carried out and the compliance of the project deliverables with the quality standards set in the Quality Management Plan.

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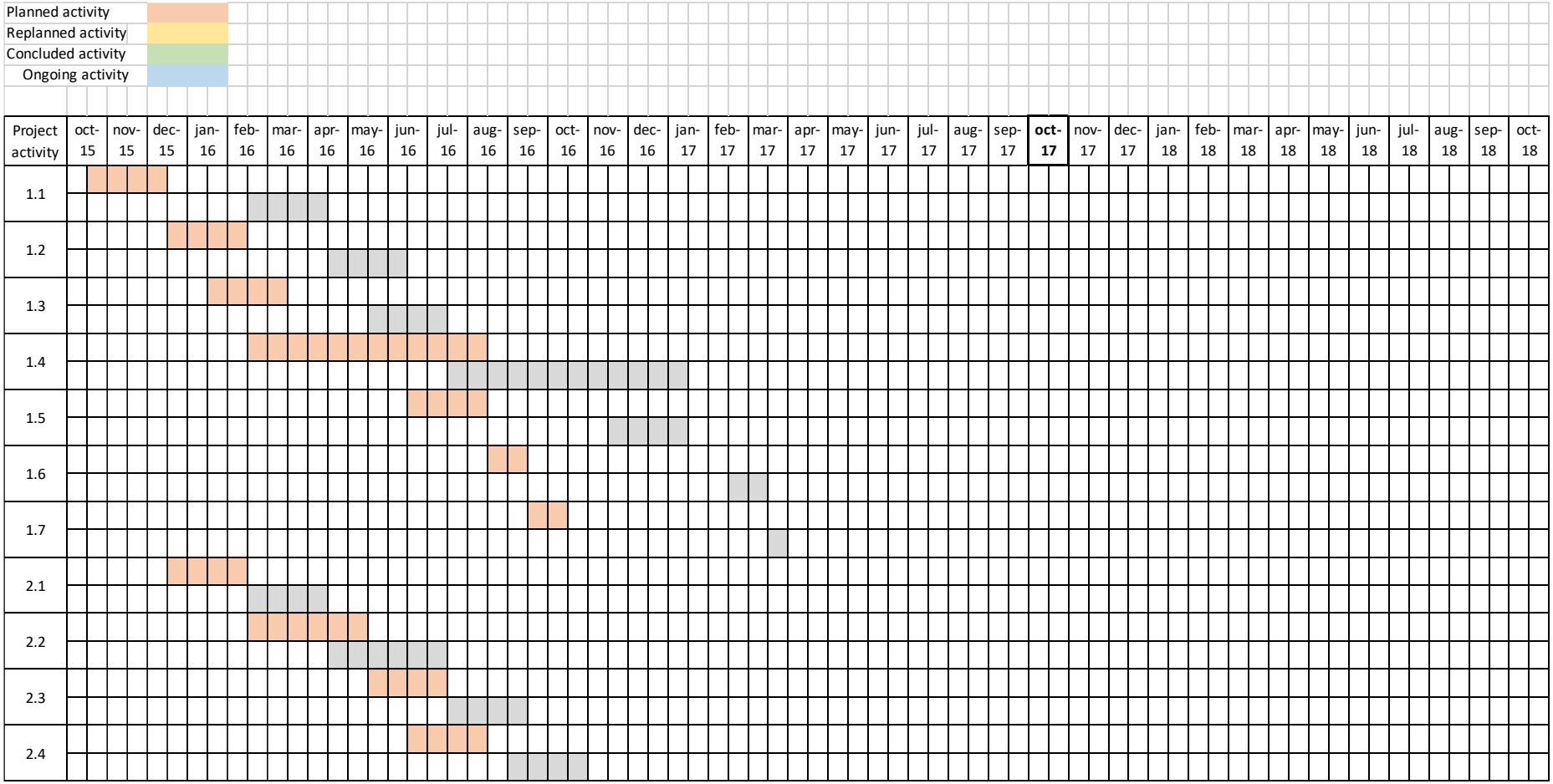
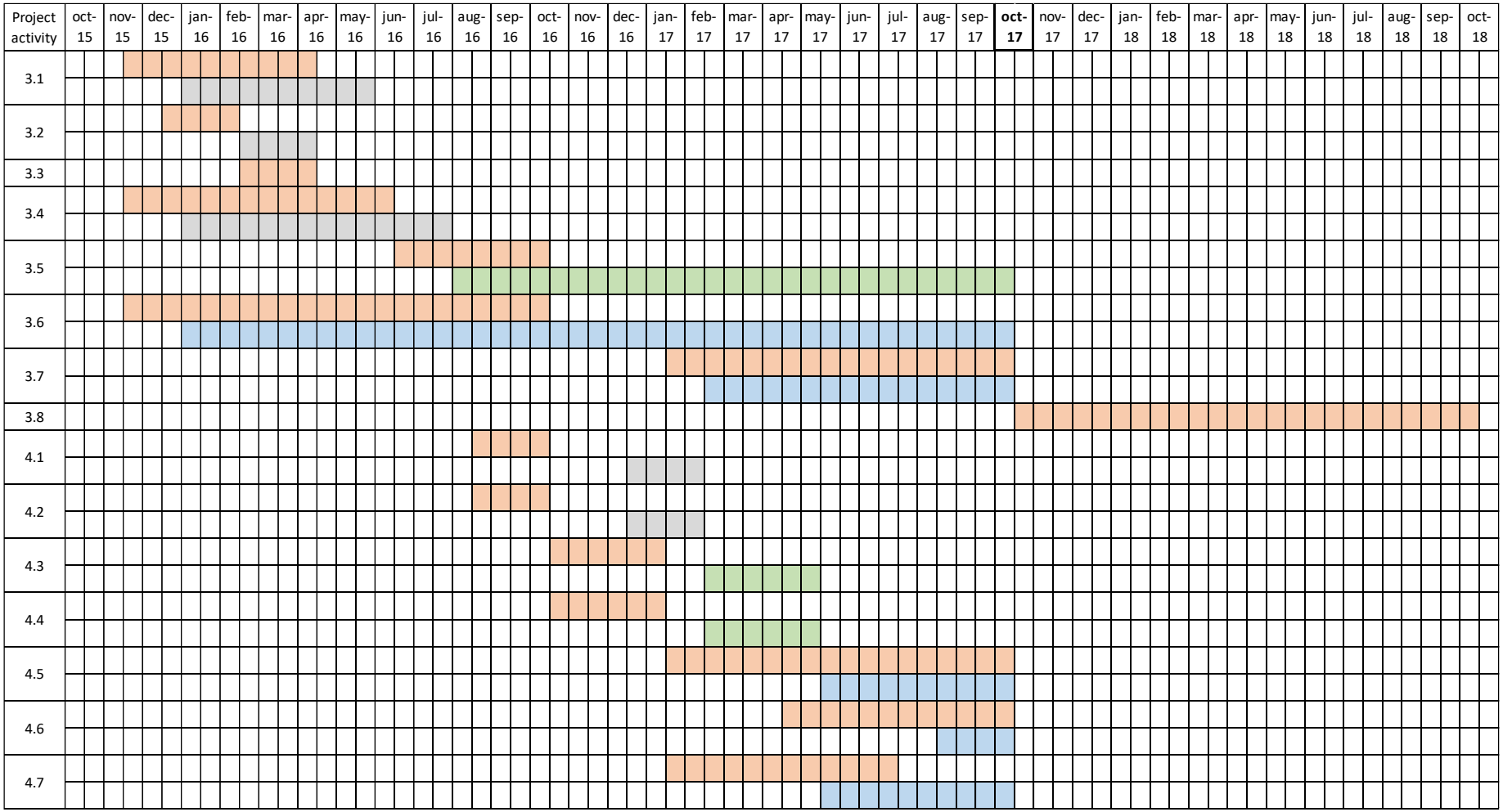
1. Progress in the Project execution

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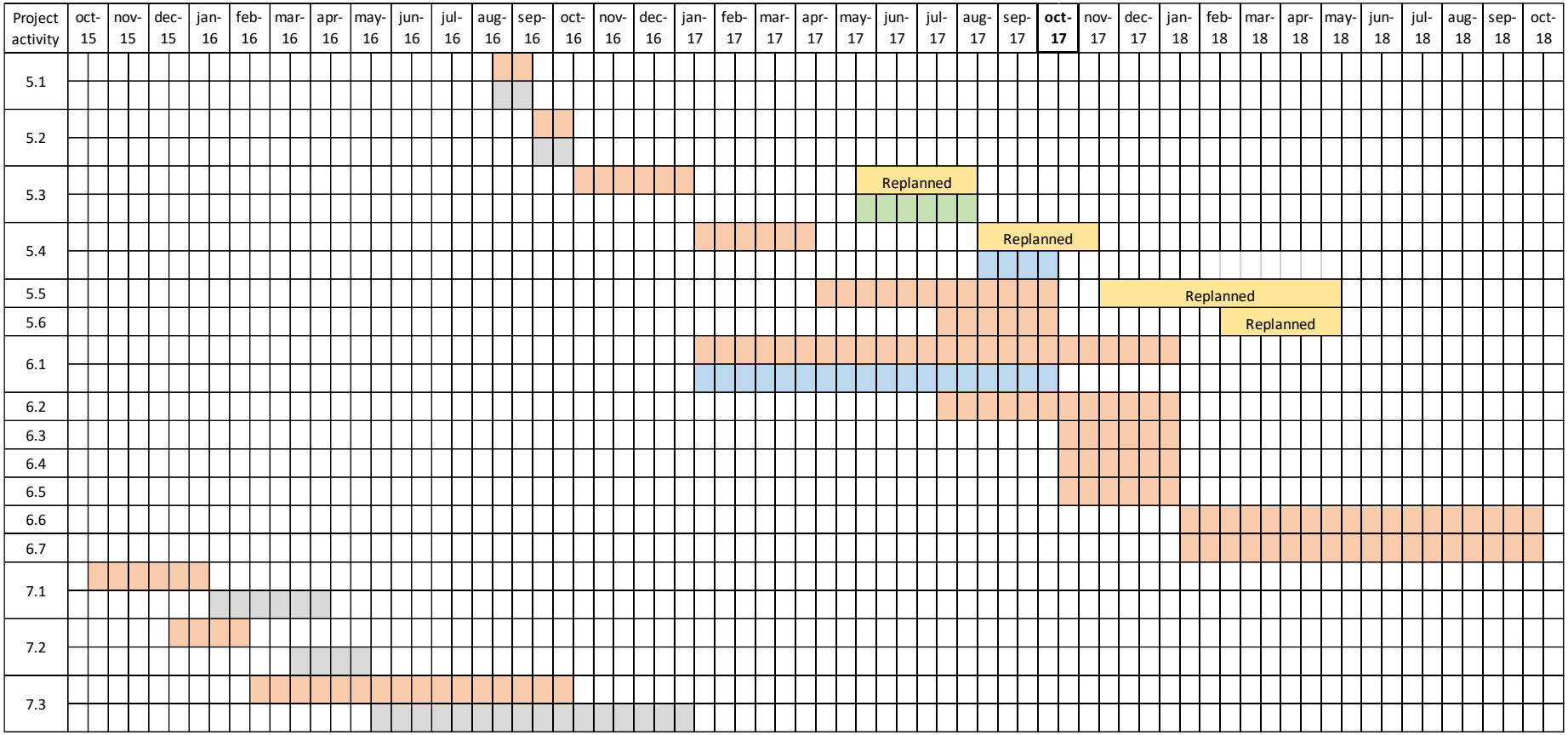
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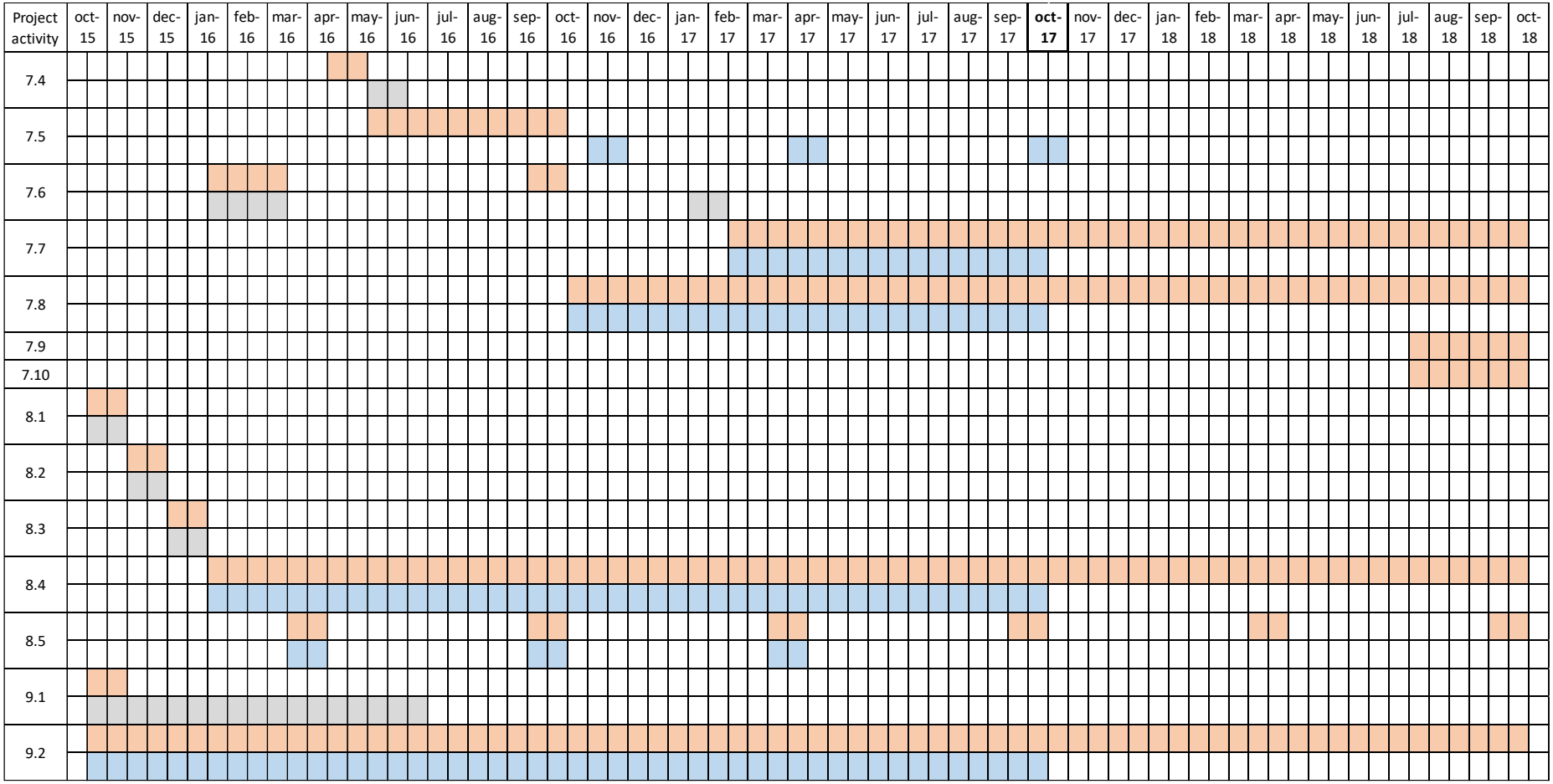
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2. Project activities and quality assurance activities carried out

2.1. Concluded activities since previous report

Activity 3.5. *Release of the final version (V1.0) of the CSHCMT.*

Participating organizations: ISALUD – CBIM

As with the development with the simulator prototype, the final version of the software was developed promoting the participation of all consortium members and other relevant actors, as healthcare institutions, and considering the quality model of the ISO normative.

Since the delivery of the prototype on July 2016, the advances of the final version were presented and discussed with the consortium members both in face-to-face and virtual workshops. On January 2017 the coordinator prepared and shared with all the consortium members a document addressing the main issues to discuss in the following workshop, related to the simulator development. Those issues were discussed in the workshop at El Salvador on February 2017, and the updated version of the software was presented.

The work continued in the workshop at Paraguay on August 2017, where the updated version of the software was again presented, and remotely until de delivery of the final version of the software.

The quality of the final version of the simulation software will be addressed in section 3 of this report (Assessment of the quality level of the project deliverables).

Activity 4.3. *Design of a customized curriculum in healthcare management for each LA HIEs.*

Participating organizations: ISALUD – UNIGRAN – UNIBE – UBA – UPNA – UNIPV – UNIROMA – EHESP – UNSSA – UEES

The curricular design involved all the relevant stakeholders in the LA HEIs. The work began in the workshops at El Salvador and continued remotely, until the programme of the 9-month course "International Diploma in Administration of Hospitals and Health Centers" was agreed upon between the LA HEIs.

Quality standards established in the QMP were considered in the curricular design.

The quality of the curricular design will be addressed in section 3 of this report.

Activity 4.4. *Elaboration of the syllabus for all the curricular areas of the curricular proposal.*

Participating organizations: ISALUD – UNIGRAN – UNIBE – UBA – UPNA – UNIPV – UNIROMA – EHESP – UNSSA – UEES

All partner HEIs carried out call and videoconferences to discuss, produce and share the syllabus for all the curricular areas of the curricular proposal; the 9 modules of the "International Diploma in Administration of Hospitals and Health Centers".
(Module 1: Management of health services based on results; Module 2: Structure, mission and functions in organizations providing health services; Module 3: Process management in health facilities; Module 4: Information, information systems and statistics applied to health management; Module 5: Strategic planning and operational planning of health services; Module 6: Managing human talent in health care; Module 7: Management of quality and risks associated with health care; Module 8: Economic-financial management in health organizations; Module 9: Final integration work: preparation of an intervention project).

Activity 5.3. *Implementation of the first step of the cascade training course for the LA HIEs´ staff involved in the healthcare management programme.*

Participating organizations: ISALUD - UBA - UPNA - UNSSA - UEES - UNIGRAN - UNIBE

The training course was developed combining on-site workshops, delivered by the WP leader (UPNA) at Asunción, Paraguay, on August 2017, and virtual learning through the project platform and the utilization of the simulation software.

Activity 9.8. *Elaboration of mid-term report*

Participating organizations: ISALUD – UNIGRAN – UNIBE – UBA – UPNA – UNIPV – UNIROMA – EHESP – CBIM – UNSSA – UEES

The activity has been developed as settled in the QMP:

The coordinator established and distributed among all partners a work schedule for the elaboration of the report, considering the following phases:

- Partners' completion and delivery to the coordinator of the internal financial Project report according to the proposed model (Annex III of the QMP).
- Elaboration and delivery of the financial report draft to the partners by the coordinator.
- Partners' correction of the draft and proposal for changes.
- Elaboration of the final version and dissemination among the partners.
- Submission of the final version to the EC within the given deadline.

2.2. Ongoing activities

At the date of this report, the following activities are being carried out:

3.6. Monitoring development and testing of the simulation software prototype and the final version of CSHCMT.
3.7. Development of simulation cases for the CSHCMT; testing and tuning of the CSHCMT upon request of pilot users.
4.5. Designing and elaboration of teaching material for each curricular area of the three curricular proposals.
4.6. Designing and elaboration of audiovisual resources for the three stages of the Health Care Management Cluster Curricula.
4.7. Identification of implementation strategies for each of the three curricular proposals.
5.4. Evaluation of the first step of the cascade training course (staff); Refining.
6.1. Management of the approval of the new curriculum by the legal authorities.
7.5. Elaboration of 6 bulletins and distribution among the target groups.
7.7. Organization of meetings for the dissemination of the project among the HEIs of the country, the professional associations of each country, the Ministries of Health and Education, and representatives of regional and international agencies.
7.8. Social media coverage to increase visibility: press interviews, press releases, elaboration and publication of different articles in printed media.
8.4. Monitoring, assessment and control of the predetermined and defined standards and goals.
8.5. Elaboration of the project quality assurance report at month 6; 12; 18;24; 30 and 36.
9.2. Planning and development of meetings for the administration of the project.
9.3. Designing and administration of the organizational and communicational structures (internal and external).
9.5. Collection and storage of data for the monitoring of the project and the elaboration of reports and budgets.
9.6. Periodic actualization of the plan and monitoring of the fulfillment of the working schedule.
9.7. Monitoring, assessment and control of any deviation in the progress of the project.
9.9. Control of the use of resources and budgetary execution.
9.10. Monitoring of the compliance of the grant agreement.

3. Assessment of the quality level of the project deliverables

The deliverables produced at the date of this report, and since the date of the previous report, are the following:

D3.3: CSHCMT final version (V1.0)

D4.2: 8-month long course (diploma course).

D7.2: LASALUS News bulletin 3

D9.2: Mid-term report

Regarding the quality assessment of deliverables 3.3 (CSHCMT final version) and 4.2 (8-month long course), disciplinary experts were interviewed using the specific assessments forms. The results of those assessments are presented below.

Assessment of the final version of the simulation software

Quality criteria		Insufficient	Sufficient but improvable	Sufficient	Comments
Functional Suitability	**Functional completeness.** Degree to which the set of functions covers all the specified tasks and user objectives.			**X**	The software covers all the functional needs of the Educator (User A) and the Educating (User B) as long as it is applied to the specific course for which it was developed. It is an educational software
	Functional correctness. Degree to which a product or system provides the correct results with the needed degree of precision.			**X**	The software does not perform complex operations but comparisons with a Knowledge Base referring to the discipline for which it was developed. It provides exact results.
	Functional appropriateness. Degree to which the functions facilitate the accomplishment of specified tasks and objectives.			**X**	The set of functions meet the needs of Users A and B, as long as it is applied to the universe of teachers and students for whom it was developed.
	Time behaviour. Degree to which the				The software operates in the Cloud, therefore there are several speed and performance

Performance efficiency	response and processing times and throughput rates of a product or system, when performing its functions, meet requirements.		**X**		limitations that are not related to development. However, there may be some delay effect due to concurrency over time.
	Resource utilization. Degree to which the amounts and types of resources used by a product or system, when performing its functions, meet requirements.			**X**	The software was developed by providing a database distributed in an international Cluster to avoid loss of performance in extreme situations. (Overload of Users B)
	Capacity. Degree to which the maximum limits of a product or system parameter meet requirements.		**X**		The software was developed on the basis of permanent dynamic growth with data feedback. It is unlikely to perform a capacity limit calculation.
	Co-existence. Degree to which a product can perform its required functions efficiently while sharing a common environment and resources with other products, without detrimental impact		**X**		The software was developed based on the coexistence with a parallel graphic environment of Virtual Reality and connection with other graphic representation software.

Compatibility	on any other product.				
	Interoperability. Degree to which two or more systems, products or components can exchange information and use the information that has been exchanged.			**X**	The parallel systems developed use the permanent exchange of information, without prejudice to performance.
Usability	**Appropriateness recognizability.** Degree to which users can recognize whether a product or system is appropriate for their needs.			**X**	The software has been developed with a profusion of contextual and specific aids that allow an intuitive and simple operation.
	Learnability. Degree to which a product or system can be used by specified users to achieve specified goals of learning to use the product or system with effectiveness, efficiency, freedom from risk and satisfaction in a specified context of use.			**X**	The software is a one-time educational tool, meaning that User B will use it only during the learning process.
	Operability. Degree to which a product or system has attributes			**X**	The Software is easy to use and friendly.

	that make it easy to operate and control.				
	User error protection. Degree to which a system protects users against making errors.			**X**	In the educational process for which the Software has been developed, the errors of User B are part of the expected sequence.
	User interface aesthetics. Degree to which a user interface enables pleasing and satisfying interaction for the user.		**X**		The aesthetics of the Software allows an intuitive operation, being visually simple and of austere design.
	Accessibility. Degree to which a product or system can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use.			**X**	The software has a graphical data entry / exit interface, prepared only for use by keyboard and screen.
	Maturity. Degree to which a system, product or component meets needs for reliability under normal operation.		**X**		The software is developed to maintain reliability and growth for several years.
	Availability. Degree to which a system, product or component is			**X**	Because it is a software to operate in the cloud, availability is 24/7 without limitations of any kind.

Reliability	operational and accessible when required for use.				
	Fault tolerance. Degree to which a system, product or component operates as intended despite the presence of hardware or software faults.			**X**	The Database of the Software, in a cluster formed by 6 Servers, ensures its operation in the cloud even with hardware failures.
	Recoverability. Degree to which, in the event of an interruption or a failure, a product or system can recover the data directly affected and re-establish the desired state of the system.			**X**	Due to its design, supported in the cloud by a Cluster of 6 Servers in an international network, it allows to maintain permanent backup and restore processes to any instance, essential necessity in all educational software.
	Confidentiality. Degree to which a product or system ensures that data are accessible only to those authorized to have access.			**X**	Following the directives of the ISO 27001 and ISO 20018 standards, the Software allows the protection of personal or institutional data and prevents undesired access.
	Integrity. Degree to which a system, product or component prevents unauthorized			**X**	The System is protected in the Cluster and in each Server preventing unauthorized access.

Security	access to, or modification of, computer programs or data.				
	Non-repudiation. Degree to which actions or events can be proven to have taken place, so that the events or actions cannot be repudiated later.			**X**	The System in each of its instances, stores a log file, distributed in the Cluster and encrypted that cannot be deleted or altered.
	Accountability. Degree to which the actions of an entity can be traced uniquely to the entity.			**X**	The System logs can be translated, and any unwanted action determined.
	Authenticity. Degree to which the identity of a subject or resource can be proved to be the one claimed.			**X**	The Cluster and the Software in general, permanently identifies all access to it in the cloud.
	Modularity. Degree to which a system or computer program is composed of discrete components such that a change to one component has minimal impact on other components.		**X**		Due to the development scheme of the teaching object, the system is totally modular. A modification of one module does not alter the rest.
	Reusability.				In fact, the software developed is expected to be

	Degree to which an asset can be used in more than one system, or in building other assets.			X	used in other similar software aimed at the same educational process.
	Analysability. Degree of effectiveness and efficiency with which it is possible to assess the impact on a product or system of an intended change to one or more of its parts, or to diagnose a product for deficiencies or causes of failures, or to identify parts to be modified.		X		The software has been developed in modular form to satisfy two needs: the stepped process of the educational object, and the need to update its functionalities based on its deficiencies.
Maintainability	**Modifiability.** Degree to which a product or system can be effectively and efficiently modified without introducing defects or degrading existing product quality.			X	For the reasons of modularity, the Software has connectors between processes that never change, allowing each module to be updated without affecting the operation.
	Testability. Degree of effectiveness and efficiency with which test criteria can be established			X	The Software requires permanent testing in each component due to its modular scheme and the dynamics of the Database with the Knowledge

	for a system, product or component and tests can be performed to determine whether those criteria have been met.				Base and glossaries differentiated by country.
Portability	**Adaptability.** Degree to which a product or system can effectively and efficiently be adapted for different or evolving hardware, software or other operational or usage environments.		**X**		The Software was developed and tested in various environments to allow rapid migration to different platforms.
	Installability. Degree of effectiveness and efficiency with which a product or system can be successfully installed and/or uninstalled in a specified environment.			**X**	The Software is easy to install remotely or locally. Operates in the cloud
	Replaceability. Degree to which a product can replace another specified software product for the same purpose in the same environment.	-	-	-	At the time of its launch it is the only one of its kind and characteristics.

Assessment of the curricular design in healthcare management

INSTITUTION: UNIVERSIDAD ISALUD

DATE: October 2017

Quality criteria	Insufficient	Sufficient but improvable	Sufficient	Comments
The programme contains all relevant information for the students and specifies the aspects related to the distance learning mode.			X	
The programme is personalized for each management level in healthcare organizations, in accordance with different student needs, enabling flexible learning paths.		X		The lack in the partner universities of a critical mass of teachers with basic training prevented the formation of e-learning tutors capable of developing flexible learning paths in the foreseen time.
The programme express the volume of learning based on defined learning outcomes and their associated workload in accordance with the European Credit Transfer System (ECTS).		X		The programme express the volume of learning based in terms of learning outcomes, but not in accordance with the European Credit Transfer System (ECTS). In Latin America there is no consensus around a system like ECTS.
The programme sets forth the competencies to be acquired by the students in a clear and comprehensible fashion.			X	

The competencies are proposed in coherence with the graduate profile and are assessable through evaluation rubrics.		X		The competencies are proposed in coherence with the graduate profile but are not described the correspondent evaluation rubrics.
The contents and formative activities are clearly and coherently related with the competencies to be developed.			X	
The contents have been determined with a congruent criterion, form lower to higher complexity.			X	
Epistemological surveillance of the contents carried out in order to avoid juxtapositions.			X	
The temporal organization, of contents and formative activities is appropriate.			X	
The programme offers the students considerable flexibility in the place of study, for example, through the utilization of mobile devices.			X	
The educational role that student-student interaction plays is clearly specified in the programme.			X	
The programme proposes innovative instructional strategies, like problem-based learning (PBL) and the use of simulation.			X	

The proposed evaluation system allows the assessment of the acquisition of the defined competencies by the students and the projection of improvements.		**X**		Partially, because there are not evaluation rubrics in coherence with the expected competencies.
The programme includes criteria for the assessment of student online collaboration.			**X**	

Conclusions and recommendations:
Indicate the percentage of aspects in each assessment category, as well as the proposed improvements for those aspects that do not qualify as "sufficient".

Sufficient: 71,4%
Sufficient but improvable: 28,6%

We propose some improvements for the following 3-three-aspects:

1. The development of analytic rubrics for competency assessment: The programme proposes competencies in coherence with the graduate profile but are not described with the correspondent evaluation rubrics. Learning outcomes assessment as well as competencies assessment by rubrics, has become an increasingly integral part of provide concrete information on the quality and effectiveness of higher education programmes. The process of rubric development may begin with a review of the literature on learning outcomes assessment as to identify a list of outcomes and indicators for each competency of the current programme. It is highly important to identify and revise, too, all the competencies planned for the programme. This can be followed by rubric construction where experts can also be consulted. Afterwards, the next step can be the construction of descriptors, outcomes and indicators for them. In a third phase, assessors and programme teachers can provide their feedback on the rubrics through focus group discussions, and "quasi-implementation instances" can be considered too. Ultimately, the work on

this rubric development we hope can result in a set of validated, analytic rubrics to assess the different expected competencies.

2. Role of e- tutors: At present, the use of new technologies has enabled the teaching community to redefine some of the teaching strategies and the concepts of teaching and learning specifically. Consequently, the traditional role of the e-teacher is changing, with the result that the understanding of the word *teacher* itself has been altered. In the e-learning courses different names are employed, for example *coach, leader, moderator, facilitator, mediator or tutor*. In the case of our programme, we prefer the word *tutor* as it emphasises several student cantered features. Well-trained tutors will be able to satisfy student expectations about the quantity, frequency and quality of learning supporting activities. In this climate we need to examine how the traditional role of a teacher in the e-courses can be changed and improved. Therefore, the aim of the possible improvement proposal can be to explore a new challenging position of a teacher from a different pedagogical point of view and thoroughly examine and consequently streamline his/ her present roles in the educational process. In addition to that, we can match a few current problems of practical e-tutoring with some Europeans partners from European universities and we can learn from them as to generate a critical mass of teachers with basic training and flexible and solid e-tutoring competencies.
3. Credit transfers: The programme expresses the volume of learning based in terms of learning outcomes, but not in accordance with the European Credit Transfer System (ECTS). In Latin America there is no consensus around a system like ECTS. While the curriculum in most LA universities is quite generalist at the undergraduate level, the college curriculum is practical, hands-on and vocationally specific. As LA universities we urgently need to develop collaborative and clear pathways and curriculum flexible designs for students transferring between institutions. There are several lessons to be learned at the LA context for governments, agencies and educational institutions that can regulate post-graduate education systems with varying institution types, qualifications and programmes. We need to be trained as to plan, deliver and evaluate new post graduate programmes where students could transfer their credits from one university to another, so they are added up to contribute to an individual's degree programme or training, in fact a student-cantered programme that enhances learner training autonomy. In this regard, there is a central tool in the Bologna Process, which aims to make national systems more compatible and contributes enormously towards increasing the effectiveness and efficiency of the post graduate educational processes.