IMI2 Project 101005122 - DRAGON

The RapiD and SecuRe AI enhAnced DiaGnosis, Precision Medicine and Patient EmpOwerment Centered Decision Support System for Coronavirus PaNdemics

WP1 – Management

D1.2 Knowledge base

Lead contributor	P3 BioSci Consulting (BIOSCI)
Other contributors	All
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Dissemination level	Public

Abstract

Through the DRAGON Project Integration Team Meetings, partners discuss various issues and provide update on progress on all aspects of the project. This helps keep all partners informed. In addition any risks and opportunities are also highlighted with a plan on how to further mitigate or develop the respective topics.

Methods

Meeting notes are structured in a way as to highlight issues, risks, and opportunities of which critical and recurring elements are curated and deposited in a knowledgebase. Information will be curated after each of the DRAGON Project Integration Team Meetings.

IP scanning is also done separately via relevant partners being surveys to provide information and outline their plans. This information is further deposited in the knowledgebase. Partners will be surveyed periodically through the project duration to provide updated information.

Results

See table included below.

Discussion

N/A

Conclusion

The knowledgebase will help DRAGON project sustainability planning as well as innovation management during the project

Date	Partner(s)	Category	Topic	Description	Plan
25/05/2021	Maastricht University	IP	AI	I do not envision creating any IP personally, as the task I am performing (combining different types of patient data into multi-factorial prediction models) should not require any novel machine learning.	If it turns out that I am wrong about my previous answer, then we (Dept of Precision Medicine at Maastricht University) will protect the IP with a patent filing.
25/05/2021	Radiomics	IP	AI	IP with respect to imaging AI for the diagnosis and prognosis of COVID patients. IP with respect to imaging AI for the processing and analysis of medical data.	Yes
25/05/2021	Thirona	IP	AI	Personalized progression prediction COVID-19, long-covid analysis	If viable it will be added to our existing (CE marked, TGA approved, FDA 510(k) cleared) chest CT analysis package
25/05/2021	University of Cambridge	IP	AI	Software and algorithms for COVID-19 prognosis and diagnosis which are deployed in the clinical workflow	Nothing planned.
25/05/2021	University of Florence	IP	AI	I think that IP rights that can be exploited are those concerning machine learning. I don't think we could exploit different IP from a radiological point of view.	Nothing planned.
05/11/2020	MedC2	Issue	App	Development of 1st version of app for use in clinical studies for patient stratification	Create plan with other partners involved in the clinical studies
22/02/2021	WP2	Opportunity	App, Stakeholder Community	Long COVID study feedback via stakeholder community	Outreach to other IMI projects and ERS CRC END-COVID participate in feedback for Long COVID study
25/05/2021	MedC2	IP	Apps, AI	1) We build new functionalities for our apps aimed at patients, healthcare providers, and trial managers (WP2, 3, 8) which we will keep on developing and adapting to multiple therapeutic areas. 2) In WP6, we are also involved in the development of prognostic predictive models for COVID-19.	1) Most of this IP that will be generated by us will be protected in the form of Copyrights (programming code). The functionalities developed will be exploitable for the apps we develop for COVID-19 but also for other chronic diseases where patient companioning and healthcare provider support can be achieved through our apps. 2) We will also have internal and inter-partners meetings to identify potential innovations that could be protected through the filing of patent applications.
14/12/2020	WP6, WP10	Issue	Apps, Dissemination & Communications	Challenging to promote/disseminate the models as unclear which one is the best	Start with publishing paper on models
25/05/2021	TopMD	IP	Biomarkers	N/a	N/a
25/05/2021	University of Southampton	IP	Biomarkers	Biomarkers for severity of disease	no
25/01/2021	WP8	Opportunity	Clinical Studies, App	Test the patient app for a new Long COVID study	Plan initiated (devise protocol and patient accrual options)
19/04/2021	WP8	Risk	Clinical Studies, App	Long COVID study ethics feedback from UoM delayed	Delay in initiation of study will render its use limited given the nature of the virus/pandemic
05/11/2020	ELF	Issue	CPAG	Lack of diversity in Citizens and Patients Advisory Group (CPAG); only patients not sufficient	Further outreach to citizens and public
25/01/2021	WP7, All	Opportunity	Data models	Investigate use of OHDSI OMOP Model and potential to link with CDISC	CDISC to investigate further
25/05/2021	Imperial College London	IP	Data privacy	1) Data harmonisation for imaging/non-imaging COVID-19 data 2) Privacy preserved learning for COVID-19	Currently under development.
22/03/2021	WP7, All	Issue	Data sharing	Installation of Federated ML system at clinical sites and data curation needs to be faster	Relevant persons need to follow-up to ensure bottlenecks are handled
14/12/2020	WP3	Issue	Data sharing	Datasets needed to train diagnostic models	WP3 discussion and plan
14/12/2020	WP4	Issue	Data sharing	Datasets needed to train prognostic models	
19/11/2020	WP7, All	Issue	Data sharing	Lack of standards for omics data	Try to use IMI eTRICKs standards as a base
05/11/2020	WP8	Issue	Data sharing	Data transfer Agreement with clinical sites needed	Plan to address issues and have DTAs in place to not delay study start
17/05/2021	All	Risk	Data sharing	All partners should ensure informed consents used in DRAGON studies are broad to allow appropriate use of data by all	Raise awareness of all partners to apply relevant wording.
22/03/2021	All	Issue	Dissemination & Communications	Are all DRAGON outputs being promoted enough	Devise metrics of successful promotion

Date	Partner(s)	Category	Topic	Description	Plan
19/04/2021	All	Opportunity	Dissemination & Communications	DRAGON to submit abstracts at the ERS Congress to maximise visibility	Partners to inform ERS of any upcoming work which could be submitted.
05/11/2020	WP10, All	Risk	Dissemination & Communications	Clinicians busy with current COVID-19 wave which must be considered in in planning of ERS COVID conference which will bring visibility to DRAGON	Set-up a core group to help develop and organise meeting
22/02/2021	WP1	Issue	Ethics	Lack of engagement by members of the Ethics Board	Partners encouraged to submit issues to ensure the EB has a role
05/11/2020	BioSci Consulting	Issue	Ethics	Difficulty finding members to join Ethics Advisory Board	Leverage on partner networks
19/04/2021	All	Opportunity	Ethics	Ethics Board providing useful feedback (e.g. Long Covid Study) and should be used a valuable resource	Partners informed of upcoming meetings and process and encouraged to submit issues they need feedback on
19/11/2020	WP7, All	Opportunity	Federated ML System, Data Sharing	It is possible to use the Radiomics platform beyond imaging data	All other partners to communicate with Radiomics on other types of data
19/04/2021	WP2	Opportunity	Federated ML System, Stakeholder Community	Potential for more collaboration with Distrim including non-imaging data	Development of longitudinal imaging and models with ERS CRC END-COVID ongoing
19/04/2021	WP7, All	Opportunity	Federated ML System, Sustainability	Use of federated system as a warning system to improve health system capacity	Continue the discussions on the warning system into sustainability planning
19/11/2020	All	Issue	Management	Structure of PIT meetings needs reviewing	Adapt schedule
22/03/2021	All	Opportunity	Management	Strategic direction dialogue highlighted 3 key directions: vaccinations, Long COVID and promoting use of AI in pandemic diagnostics	Leverage stakeholder community around these topics
05/11/2020	All	Risk	Management	Various managing bodies within consortium may create siloes	Ensure roles of the bodies are clearly outlined and hierarchies are followed. Clarification to be outlined on project charter
25/05/2021	Owlstone Medical	IP	Medical Device	Owlstone will be using its exhaled breath aerosol collection device during the dragon project. The potential IP generated includes: 1) Mask suitable for collection of exhaled breath aerosols 2) Ability of the EBA collection device to be combined with PCR based testing which could be used for detection or monitoring of disease/infections 3) Ability of the EBA collection device to be combined with other forms of analysis which could be used for detection or monitoring of disease/infections	Owlstone Medical is a commercial company aiming to bring breath test to market. Any IP generated through the Dragon project will be further developed and exploited. This could be a general purpose EBA collection mask for breath based research for customers, or a COVID-19 EBA collection mask which would be commercialised through public health organisations as alternative to swabs.
25/01/2021	WP6	Issue	Models	Publication on knowledge graphs needs disseminating	ERS to draft publication policy and disseminate
25/01/2021	WP6	Issue	Models	NPL expertise needed to move knowledge graph concept into practice	ICL will be able to provide some expertise with new staff member
05/11/2020	WP6	Issue	Models	Legal opinion on certification of infrastructure linked to nomograms needed	Get legal opinions before dissemination on nomograms
14/12/2020	MedC2, WP10	Risk	Models, Dissemination & Communications	App promotion and uptake needs careful thinking due to regulatory concerns	Leverage on ERS experts for app uptake and devise promotional plan ensuring disclaimers included for clarity on regulatory status of app
05/11/2020	ELF	Issue	Patient engagement	How to get patients in the project	Include them within the PIT
19/11/2020	WP6, WP8, WP9	Issue	Regulatory	WPs need to work together to ensure they can deliver their outputs to ensure regulatory compliance	Set-up small groups to coordinate efforts
22/02/2021	BioSci Consulting	Issue	Stakeholder Community	Signing of the Collaboration Agreement	Multiple reviews will be needed due to many partners
19/04/2021	All	Opportunity	Stakeholder Community	Regulatory Mastermind being planned due to many barriers linked to COVID-diagnostics development. Further cementing DRAGON's leading role in collaboration activities for potential to scale up in stakeholder community	Radiomics offering expertise to lead discussions
22/02/2021	BioSci Consulting, All	Opportunity	Stakeholder Community	DRAGON taking the lead to develop a stakeholder community with other COVID-19 projects	Various meetings with projects set-up and planned
05/11/2020	WP2	Opportunity	Stakeholder Community	Initiate collaboration with other COVID-19 IMI projects	Set-up meeting with projects to identify synergies