

Webinar | IMI2 - Call 15

Digital endpoints in neurodegenerative and immune- mediated diseases

18.07.2018

Agenda

- How to use GoToWebinar – Catherine Brett, IMI
- Introduction – Colm Carroll, IMI
- The Call topic – Vaibhav Narayan, Janssen & Emilio Merlo-Pich, Takeda
- Involvement of SMEs, patient groups, regulators – Colm Carroll, IMI
- Questions & answers

How to use GoToWebinar

Expand / minimise control panel →

Microphone status →

Full screen →

Raise / lower your hand
e.g. if you want to ask a
question orally

Send a question in writing →

The screenshot shows the GoToWebinar interface with several key elements highlighted by a red border and green arrows:

- Expand / minimise control panel:** A green arrow points to a red circle around the expand/collapse icon (a right-pointing arrow) in the top-left corner of the control panel.
- Microphone status:** A green arrow points to the microphone icon in the control panel, which is currently muted (indicated by a red slash).
- Full screen:** A green arrow points to the full-screen icon (a square with a diagonal line) in the control panel.
- Raise / lower your hand:** A green arrow points to the hand icon in the control panel, which is currently raised (indicated by a green hand).
- Send a question in writing:** A green arrow points to the text input field in the "Questions" section, which contains the placeholder text "[Enter a question for staff]".

The interface also displays the following information:

- Audio settings: "Computer audio" is selected, "Phone call" is unselected. The status is "MUTED".
- Microphone: "Transmit (Plantronics Savi 7xx-M)" is selected.
- Speaker: "Receive (Plantronics Savi 7xx-M)" is selected.
- Volume: A green volume bar is visible.
- Current speaker: "Talking: Liz Davis".
- Webinar title: "Webinar Housekeeping".
- Webinar ID: "Webinar ID: 608-865-371".
- GoToWebinar logo.

How to use GoToWebinar - audio

To listen via your computer, select **Computer audio**

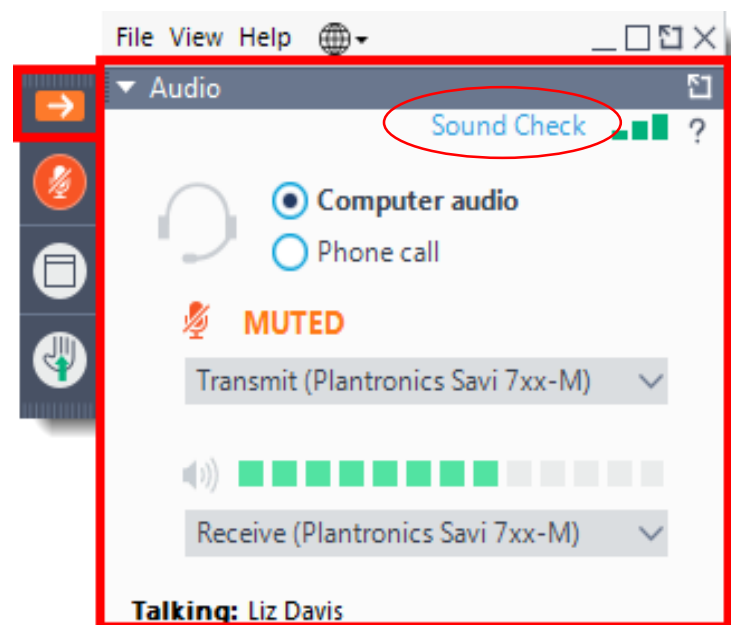
Can't hear us?

- Check your **speakers are switched on and not muted**
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- Still not working? Select **Phone call** and dial the numbers given on your phone

To listen in via your phone, select **Phone call**, pick your country, and dial the numbers given

Can't hear us?

- Check you have selected **Phone call** in the audio panel
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Before we start...

- This webinar is being recorded and will be published on the IMI website and / or IMI YouTube channel
- Presentation slides will be published on the webinar web page
- A participant list will be circulated and published on the website
- IMI2 – Call 15 has been launched and all Call documents & details of how to apply can be found on the IMI website

Webinar | IMI2 - Call 15

Digital endpoints in neurodegenerative and immune- mediated diseases

Today's webinar

Will cover all aspects of the Call topic

- Introduction to IMI programme
- Proposed project

Will not cover rules and procedures

- A webinar on rules and procedures took place on **Tue 10 July**

View the recording and download the participant list at:

<http://europa.eu/!Yg99yW>

IMI – Europe's partnership for health

IMI mission

IMI facilitates open collaboration in research to advance the development of, and accelerate patient access to, personalised medicines for the health and wellbeing of all, especially in areas of unmet medical need.

IMI 2 budget (2014 – 2024)

EU funding goes to:

Universities
Hospitals
SMEs
Mid-sized companies
Patient groups



€1.638 bn



€1.425 bn

Other
€213 m

IMI 2 total budget
€3.276 billion

EFPIA companies

receive no funding
contribute to projects 'in kind'

Associated Partners
e.g. charities, non-EFPIA companies

IMI – Ecosystem for innovative collaborations

- Allow engagement in a cross-sector, multi-disciplinary consortium at the forefront of cutting-edge research
- Provide the necessary scale by combining funding, expertise, knowledge, skills and resources
- Build a collaboration based on trust, creativity and innovative and critical thinking
- Learn from each other - new knowledge, skills, ways of working
- Take part in transformative research that will make a difference in drug development and ultimately patients' lives

IMI is a **neutral platform** where **all involved** in drug development can engage in **open collaboration** on **shared challenges**.

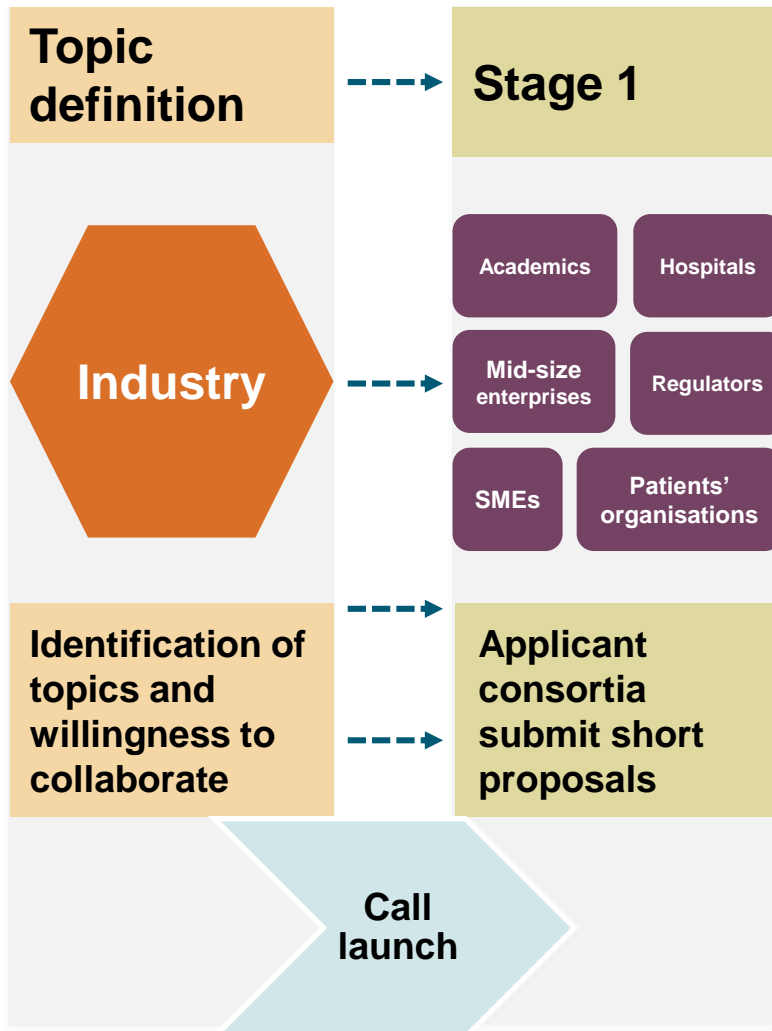
Typical IMI project life cycle



Topic Definition

- Industrial partners align themselves around a real challenge for industry and agree to work together **and commit resources**
- **New ideas** from public sector, universities, SMEs etc. are needed to address the challenge
- **Scale** is a key to success and is provided through **IMI funding**
- **Consultation** with H2020 countries, IMI2 SC, EC

Typical IMI project life cycle

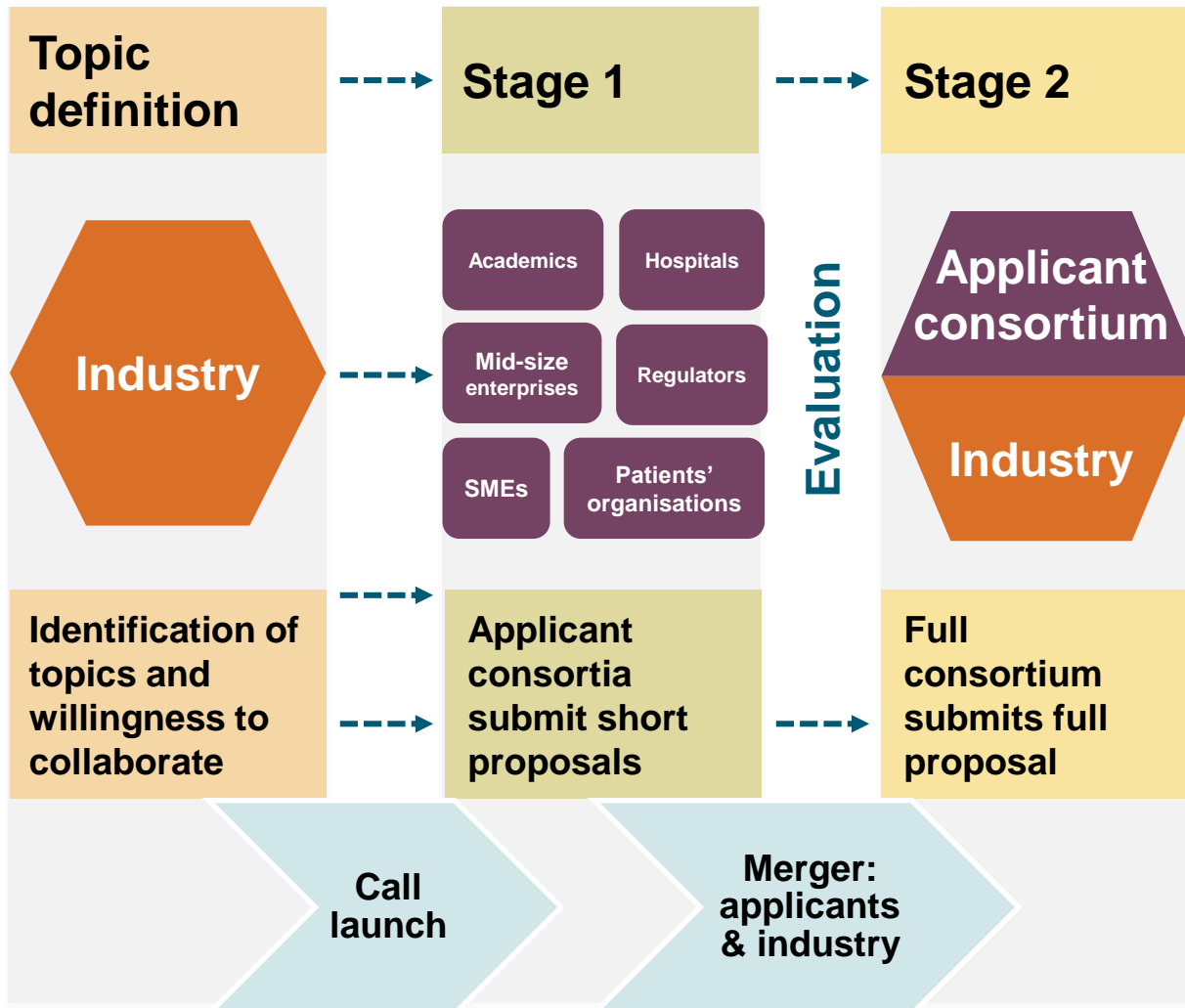


Evaluation

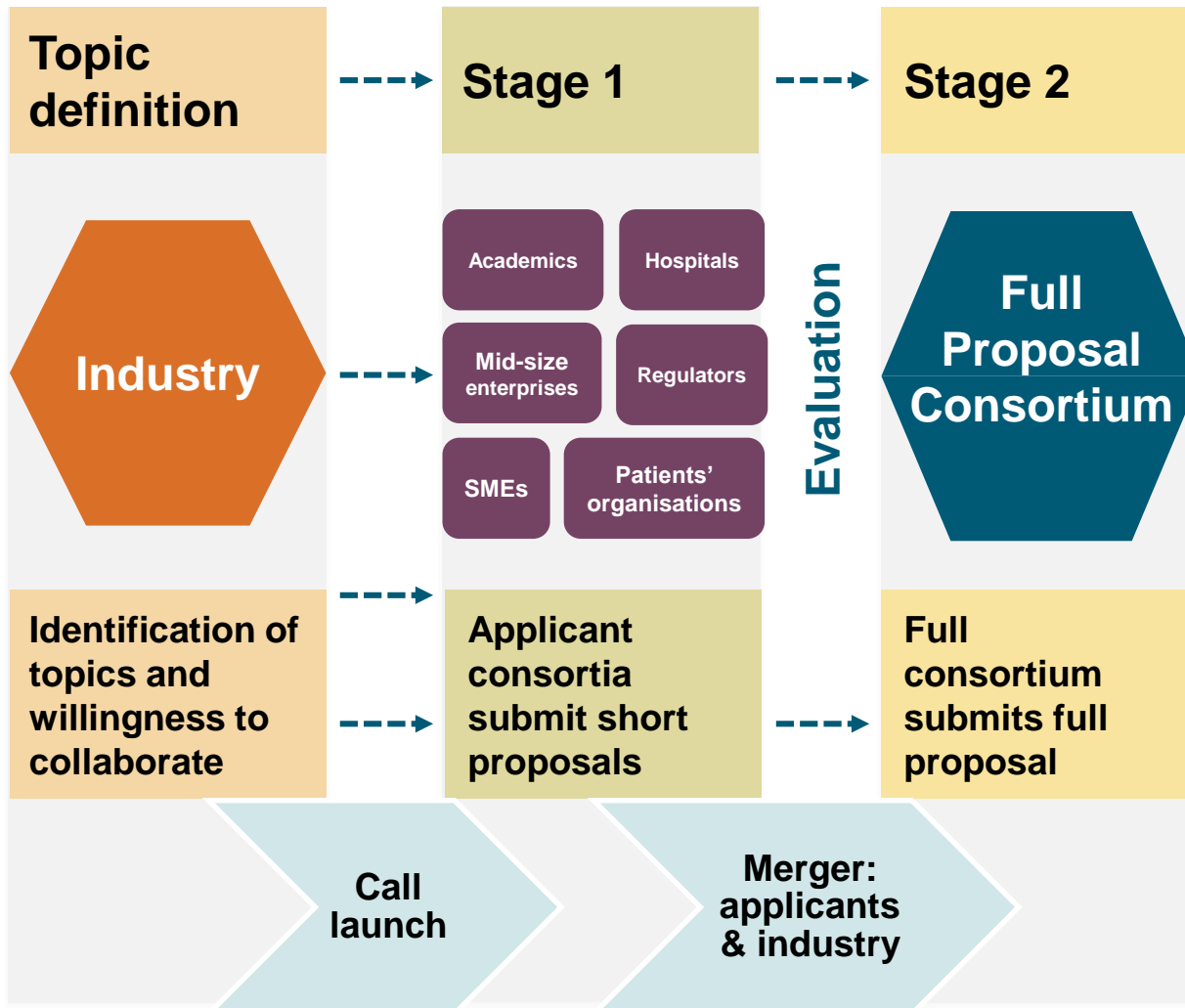
Proposal Submission & Evaluation

- **Consortia** applying for the public funding **form** and submit a Short Proposal meeting the requirements of the topic text
- All proposals evaluated by an **independent panel**
- **Only top ranked proposal** goes through to the next stage

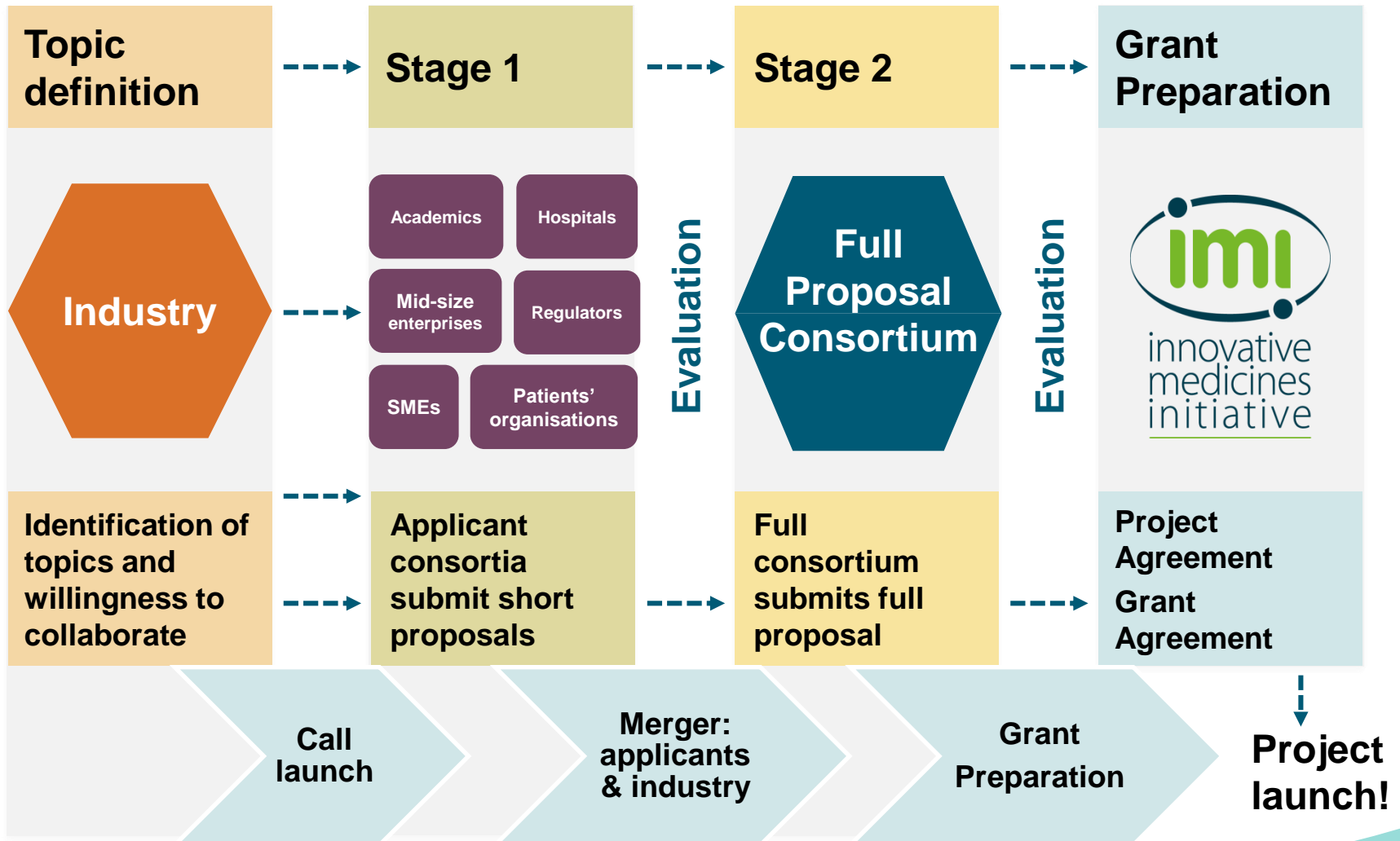
Typical IMI project life cycle



Typical IMI project life cycle



Typical IMI project life cycle



Submitting a proposal

- <http://europa.eu/!Mg84kq>

The screenshot displays the 'Participant Portal' for the European Commission's Research & Innovation. The main heading is 'Calls for Proposals' under the 'Horizon 2020' banner. A sidebar on the left lists various EU programmes from 2014-2020, with 'H2020' highlighted. The main content area features a list of call topics under 'Excellent Science' and 'Industrial Leadership', including 'European Research Council (ERC)', 'Future and Emerging Technologies (FET)', 'Marie-Sklodowska-Curie Actions', 'Research Infrastructures', 'Leadership in enabling and industrial technologies (LEIT)', and 'Information and Communication Technologies'. Below the list, there are filters for 'Status' (Calls with forthcoming topics, Calls with open topics, Calls with only closed topics) and 'Sort by' (Call title, Call identifier, Publication date). A search box contains 'IMI2' and a 'FILTER' button is visible.

Proposal Template

- Available on IMI website & H2020 submission tool
- For first stage proposals, the page limit is **30 pages**.

Title of Proposal

List of participants

Table of Contents

1. EXCELLENCE	3. IMPLEMENTATION
1.1 Objectives	3.1 Outline of project plan — Work packages, and major deliverables
1.2 Relation to the call topic text.	3.2 Management structure and procedures
1.3 Concept and approach	3.3 Consortium as a whole
1.4 Ambition	3.4 Table 3.1a: List of work packages
2. IMPACT	4. PARTICIPANTS
1 Expected impacts	4.1. Participants (applicants)

Evaluation Criteria (1/2)

■ Excellence

- Clarity and pertinence of the proposal to meet all key objectives of the topic;
- Credibility of the proposed approach;
- Soundness of the concept, including trans-disciplinary considerations, where relevant;
- Extent that proposed work is ambitious, has innovation potential, and is beyond the state of the art;
- Mobilisation of the necessary expertise to achieve the objectives of the topic, ensure engagement of all relevant key stakeholders.

■ Impact

- The expected impacts of the proposed approach as mentioned in the Call for proposals;
- Added value from the public private partnership approach on R&D, regulatory, clinical and healthcare practice as relevant;
- Strengthening the competitiveness and industrial leadership and/or addressing specific societal challenges;
- Improving European citizens' health and wellbeing and contribute to the IMI2 objectives.

Evaluation Criteria (2/2)

- **Quality and efficiency of the implementation**
 - Coherence and effectiveness of the outline of the project work plan, including appropriateness of the roles and allocation of tasks, resources, timelines and approximate budget;
 - Complementarity of the participants within the consortium (where relevant) and strategy to create a successful partnership with the industry consortium as mentioned in the topic description in the Call for proposal;
 - Appropriateness of the proposed management structures and procedures, including manageability of the consortium.

Tips for writing a successful proposal

- Read **all the call-relevant material**:
<https://www.imi.europa.eu/apply-funding>
- Begin forming your consortium **early**
Partner search tools & networking events
- Provide **reviewers** with all the information requested to allow them to evaluate your proposal
- **Finalise and submit your proposal early**
- Contact the **Programme Office** (**NOT** topic writers):
infodesk@imi.europa.eu

Common Mistakes

- The proposal does not address **all the objectives of the topic**
- A proposal is scientifically excellent but will **have limited impact**
- Necessary expertise **not fully mobilized**
- **Complementarity** with industry consortium not well described
- **Admissibility/Eligibility** criteria not met:
 - submission deadline missed
 - minimum of 3 legal entities from 3 member states & H2020 associated countries not met.

Find project partners

- Network with **your contacts**
- **Network** with fellow webinar participants
- Use **Partner Search Tools**:
 - H2020 portal: <http://europa.eu/!Mg84kq>
 - German NCP version: <http://www.imi-partnering.eu>
- Get in touch with your **local IMI contact point**:
www.imi.europa.eu/content/states-representatives-groups
- Talk to your **Health National Contact Point (NCP)**
- Network on **social media** (e.g. IMI LinkedIn group)

Participation of SMEs, patient groups, regulators

We encourage the participation of a wide range of health research and drug development stakeholders in our projects.

- SMEs and mid-sized companies
- Patient organisations
- Regulatory bodies
- Companies / organisations from related fields (e.g. diagnostics, animal health, IT, imaging etc...)

Digital Transformation of Clinical Trial Endpoints Programme

Topic 1: Digital endpoints in neurodegenerative and immune-mediated diseases program (DENIM)

Vaibhav Narayan, Janssen and Emilio Merlo-Pich, Takeda

17.12.2014 • IMI webinar

Need for public-private collaboration

- **Challenges to be solved by PP collaboration:**
 - New and more effective therapies are needed for neurodegenerative motor disorders and immune mediated inflammatory disorders.
 - Clinical trials are often inefficient, requiring large numbers of patients due to the low sensibility of the clinical endpoints based on subjective assessments performed only during hospital visits, partially addressing patients needs
 - Portable digital devices and application could offer innovative solutions that require appropriate validation and the support of Regulatory Agencies.
- **Expertise requirements from participants:**
 - Technical expertise in device development and implementation in patients
 - Data management, statistical & analytical expertise for supporting the definition of algorithms that will be validated against clinical endpoints
 - Patients reported outcome knowledge, clinical expertise for trial design & execution, support for regulatory qualification, patient's advocacy. Input.

Objectives of the full project

- **Scope:**

- To propose digital solutions that can reliably measure clinically relevant functional impairments in patients and to validate them for the use in clinical trials in line with the Regulatory Agencies requirements.

- **Disease areas focus:**

- ***Neurodegenerative Movement Disorders (NMD)*** – Parkinson Disease and Huntington’s Disease
- ***Immune Mediated Inflammatory Diseases (IMID)***: Rheumatoid Arthritis (RA) or Systemic Lupus Erythematosus (SLE), Inflammatory Bowel Disease (IBD).

- **Objectives:**

- The identification and selection of subtle disabilities in ADL that can be optimally “digitalized” with the currently available portable technology and that are common or partially shared among the NDD and IMID;
- The validation of digital solutions that appropriately measure clinical and behavioural signs & symptoms related to ADLs that are specific for each one of the disorders mentioned below and can be used in clinical trials

Pre-competitive nature

- The current clinical assessments, based on subjective clinical scoring systems, are characterised by low sensitivity, high variability, low sampling frequency (i.e. monthly assessments) and, in some case, insufficient detection of the patient's actual needs
- Very few digital procedures (that require a combination of particular digital devices, performance on tasks, passive data collection and algorithmic data extraction) have gained a qualification to be used as a clinical trial endpoint. If qualified, these endpoints could also allow for the possibility to rapidly scale-up to a very large number of patients, thereby driving a change in how clinical trials are implemented.
- In this context, the aim of this project is to target other ADL and behavioural aspects of the disorders that are often very early complaints from patients and to identify digital solutions whose precision, reliability and ecological relevance are relevant to patients, clinicians, regulators and payers

Expected impact

The use of mobile & pervasive digital technologies in clinical trials will:

- increase the efficiency of clinical trials, enabling faster clinical development and a reduction in the time taken to bring new therapies to patients;
- give deeper and more detailed insights into how diseases progress and cause disabilities in patients, which, in turn, will enable development of interventions that better address these clinical deficits and disabilities;
- provide a more valid and complete assessment of patient and care-giver impact on daily living of disease and their treatments;
- enable more inclusive clinical trials by reducing patient burden thus allowing assessment of interventions in non clinical setting and in more diverse and representative populations;
- eventually allow studies to assess real world impact of therapies on patients thus enabling more effective value-driven health care decision making

Suggested architecture of the project

- **Part A** is an approximately 1.5-year long period for initial identification of the optimal ADL and for the implementation of the selected technology in a small groups of patients aimed to establish a reasonable relationship with the targeted clinical endpoints.
 - **Part B** is an approximately 3- 3.5 year long validation programme aimed validating the selected digital procedures against clinical endpoint and ADL and that are sensitive to pharmacologic treatments.
- The final architecture of the full proposal, organised in work packages, will be defined by the participants in compliance with the IMI2 rules and with a view to the achievement of the project objectives;
 - The consortium is expected to have a strategy for the translation of the relevant project outputs into clinical trial practice and regulatory appraisal
 - A proposal for sustainability, i.e., facilitating continuation beyond the duration of the project, should also be provided

Expected contributions of the applicants (1)

- clinical and disease area experts with specific knowledge of the disorders in focus;
- clinicians and psychologists with expertise in the critical aspects of ADL and HRQOL,
- clinical and statistical experts with demonstrated knowledge of the design and conduct of clinical studies;
- expertise in clinical data management, algorithmic and statistics;
- expertise in patient advocacy and engagement, privacy and ethical considerations;
- expertise in legal aspect of data privacy with particular reference to the capture of data of potential sensitivity related to personal activities;
- expertise in device and sensor development (including SMEs);

Expected contributions of the applicants (2)

- IT/analytics partners (including SMEs): data management architecture, hardware/software platform, state-of-the-art algorithms to process and analyse time-series data from sensors/devices, expertise in data privacy and security;
- expertise in the development and regulatory qualification of novel digital technologies, in particular if applied to health care problems
- some expertise in HECOR and patient outcome research
- bring an existing data management platform as part of their proposal. An assessment of performance, versatility, data access, sustainability, and security explaining the reasons for the selection should be included.
- include a mix between already validated digital tools and some novel methods (Technology Readiness Level 5-9) to probe the ADLs or other endpoints not fully addressed in the literature

Expected contributions of the applicants (3)

- identify and engage existing longitudinal cohort studies in the four relevant populations;
- design a statistically powered clinical trial to validate the digital solution to measure ADL and show capacity to detect treatment effects with higher precision;
- demonstrate access to sufficient clinical trial subjects and a proven track of clinical trial recruitment and management expertise for NMD and IMID;
- allocate funding for EMA scientific advice and to access HTA expertise;
- allocate funding for a final public conference (additional dissemination activity);
- allocate funding to interact in joint meetings with future topics

Expected (in kind) contributions of industry consortium (1)

- **EFPIA consortium:**

- Janssen (project leader); Takeda (project co-leader); AbbVie; Astra Zeneca; Biogen; Eli Lilly; Orion Pharma; Pfizer; Roche; Sanofi; UCB;

- **IMI2 JU Associated Partners:**

- Parkinson's UK; CHDI Foundation

- **EFPIA personnel competences**

- expertise in regulatory activity;
- expertise in patient reported outcomes;
- expertise in relations with HTA, insurance and payers;
- expertise in patient association, legal and ethical aspects;
- expertise in digital data standardisation for regulatory application;
- expertise in patient-centric approaches working with vocational groups

Expected (in kind) contributions of industry consortium (1)

- **Additional EFPIA competences complementing the ones of the applicant consortium**
 - expertise in legal, financial and project management
 - expertise in clinical study design, biostatistics, clinical diagnosis & assessment
 - expertise in disease modelling and longitudinal analysis of cognition, function, biomarker and clinical data;
 - expertise in functional assessments, including activities of daily living (ADL);
 - expertise in digital data management and platform use, as well as device and sensor characterisation
 - therapeutic area expertise along with years of digital and clinical endpoint strategy knowledge
- **Data in kind contribution:**
 - industry consortium will contribute relevant data generated in prospective activities that are part of broader clinical studies independent from, but related to the project, for achieving meaningful results in developing digital endpoints for PD, HD and IMiD

Key deliverables of the full project (1)

■ PART A

- identification of the digital data management platform;
- prioritised list of sign & symptom-based clinical endpoints for NMD that are amenable for digitisation and selection of the most promising device and procedure;
- prioritised list of ADLs/disabilities/HRQOL measures amenable to original digital solutions in NMD and IMID;
- public release of the adapted digital data management platform with appropriate privacy protection assurances and seamless integration to EMR systems
- introduction of some existing digital solutions that have already been successfully used i.e. from the literature (anchoring dataset);
- development of novel methods to probe the ADLs or other endpoints not previously addressed in the literature (innovative dataset)
- initial test of feasibility, acceptability and utility with some volunteers;
- collection of available data from project members and external sources; initial proposal of models for the diseases (starting with PD and HD)

Key deliverables of the full project (2)

- **PART A (NMD)**

- Pilot study synopsis in NMD: exploration in a small group of patients with PD and HD of the various devices for acceptability, feasibility and utility, to be possibly run in one or two clinical centres for clinical endpoints. At least two ADL/disabilities digital devices will be tested among those that have been discussed as common or partially common with IMID;

- **Part A (IMID)**

- Pilot study synopsis in IMID exploration in a small group of IMID of the various devices for acceptability, feasibility and utility, to be possibly run in one or two clinical centres for clinical endpoints. At least 2 ADL/disabilities digital design will be tested among those that have been discussed as common or partially common with NMD;

- Early scientific advice from the regulatory agencies (EMA & FDA) on the overall proposal, including the fit-for-purpose of longitudinal study in part B

Key deliverables of the full project (3)

■ PART B

- **Longitudinal study for validation of the selected digital solutions;**
- development of clinical protocols and IRB, ethics committee approval;
- Inclusion of clinical observational part of the study to establish correlations of digital endpoint with clinical endpoints for PD and HD and for ADL/disabilities/QOL across both NMD and IMID patient populations; Inclusion of therapeutic effects for assessing the sensitivity of the assay.
- Possible protocol adaptation to include improvement based on the scientific advice from EMA, possibly FDA and HTA agencies based on data from the interim analysis and associated clinical trial simulation scenarios.

■ PART B: Data analysis:

- digital data management plan, including digital data format and standardisation, alignment with legal and privacy aspects, storage backups and cybersecurity;
- performance of algorithm-delivered recognition of digital endpoints and ADL/disabilities/HRQOL patterns for automatic detection;
- assessment of the precision and sensitivity of digital endpoints vs. clinical scales and their effects on sample size and effect size in simulated clinical trials;

Key deliverables of the full project (4)

PART B: Data analysis (cont.)

- assessment of the precision and sensitivity of ADL/disability/HRQOL digital sequences to estimate ADL/HRQOL scores and their effects on sample size and effect size in simulated clinical trials across the different disease populations;
 - interim assessment after one year (or another duration) to provide a robust dataset for engaging in a second round of EMA Scientific Advice;
 - final analysis package to support a request for the qualification of the use of the novel digital endpoints via EMA scientific advice, early HTA consultation and, possibly, FDA.
- Overview and position paper as well as a series of scientific articles on digital transformation on clinical trials.
 - Final public event to showcase the results of the project.

What's in it for you?

- Patients & Vocational groups:
 - The improved assessment of the progression of symptoms and disabilities, the possibility to have objective records, the reduced burden in joining clinical trials and the increased probability to see approval of novel therapeutics.
- Academic researchers
 - The identification of more precise way to measure disabilities and symptoms, datasets with longitudinal profiling to be associated with biomarkers and clinical measurements of disease progression, the implementation into innovative statistical modelling, the contribution to the Precision Medicine paradigm
- SMEs
 - The validation and standardization of certain measurements and algorithm could open the possibility to apply various and different devices with the appropriate specifications into clinical trials; specialised services could be developed to support Pharma in the operational implementation, including data analysis and platform management.



Thank you

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Involvement of SMEs, patient groups & regulators

SME Participation

IMI encourages the participation of SMEs in applicant consortia as they can offer a complementary perspective to other organisations.

In particular, in this topic, SMEs can participate by bringing expertise in:

- Device and sensor development: latest remote assessment technologies (wearable, off-body) that could be further developed or modified for use in the consortium
- IT/analytics partners: data management architecture, hardware/software platform, state-of-the art algorithms to process and analyse time-series data from sensors/devices, expertise in data privacy and security

Patient Participation

There are many ways you can improve project performance by working with patients as partners:

- Ensure patient needs are prioritised
- Patient engagement
- Privacy and ethical considerations
- Acceptability of the technologies
- Community outreach, dissemination and adoption

“The patient, doctor and researcher – each is a different kind of expert.”

Interactions with regulators

- **Have a plan for interaction** with relevant **milestones** and **resources** allocated, as needed
- Consider the **formal regulatory process** to ensure **regulatory acceptance of project results** (e.g. qualification procedure for biomarkers)
- Get familiar with **services offered for dialogue** (e.g. at EMA through qualification advice, Innovation Task Force, briefing meetings)
- Consider involving regulators as project participants or in the **advisory board**
- Have a plan for dialogue with **HTA bodies / payers**, if relevant

To maximise impact of science generated by projects



Engage in dialogue with regulatory authorities

More info:

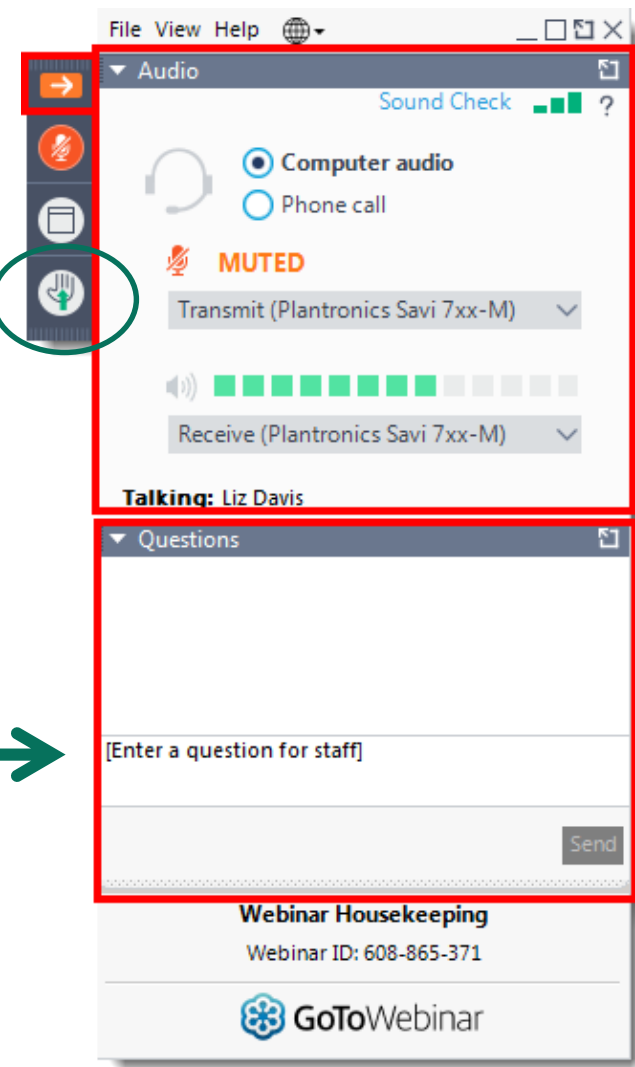
- [Webinar & presentations](#) 'How to engage with regulators EMA / FDA'
- 'Raising awareness of regulatory requirements: [A guidance tool for researchers](#)'



Questions & answers

Questions?

Raise your hand if you want to ask a question orally



Send a question in writing



After the webinar, send any questions to the **IMI Programme Office**

applicants@imi.europa.eu