Appendix 2: minutes of the meeting

IMMERSE minutes April 11th/12th 2024
General Assembly Meeting Heidelberg

(Day 1 morning)

Opening

See slides

- The decision was reached with the Steering Committee members to end recruitment for Phase 2 at **the end of June 2024**.
  All WP7 staff members and clinical teams should make a final effort to include as much participants as possible in the upcoming weeks so that we can reach the largest possible sample by the end of June 2024.
- The goal of this General Assembly meeting is to focus on the deliverables and outcomes in the upcoming year.
- The IMMERSE project is nominated for the Value Based Health Care Prize 2024 (public and jury prize):
  - Prof Inez Myin-Germeys and Dr. Jeroen Weermeijer will attend the official ceremony meeting in Amsterdam in May 2024.

WP1

See slides

- WP 1 is currently working on finalizing the technical and financial report for the second periodic report, with a deadline to submit everything within 60 days after April 1.
- A review meeting for the 2nd periodic reporting will be scheduled with the EU officer. We will propose to schedule this meeting on June 19th.
  - **Action**: Silke will contact our EU officer.
  - **Action**: Silke will schedule some practice sessions beforehand.
- The budget will be discussed in the Steering Committee meeting of September.
- **Action**: Silke will schedule an online half day SC meeting in the fall.
- **Action**: Silke will schedule the last GA meeting in Leuven in 2025.
- **Action**: D8.2 will be resubmitted in the upcoming weeks.
- **Action**: Silke will ask for a 6-9 month no cost extension (argument will be the economic evaluation)

WP7:
Implementation Strategies, Processes, Outcomes and Costs
Available data and code

See slides

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WP4:

Overview of type of available data and algorithms

See slides

- **Action**: WP4 shall prepare a hand-on workshop that will focus on applying the developed ML algorithm and addressing practical questions.
    - For this, WP4 will receive easily processable sensor + rating data acquired in IMMERSE, as soon as available.
    - We will send a paper around prior to the workshop for users to prepare. Users are also explicitly asked to come up with questions on what types of questions they would want to address.
- **Action**: Regarding D4.3: WP4 will prepare code that exemplifies model inference of the ML algorithm and provides application examples and visualizations.
- To get the data for ML: use DROPS to add an abstract that we request the data without needing formal approval.

WP3:

Data Management Workshop

See slides

Data Management Architecture

- Data Source TherapyDesigner: Is it necessary to implement a technical interface between TherapyDesigner and the central research database?
    - TherapyDesigner is currently able to provide a manual export with limited effort, and Simon is willing to execute the export on demand at requested intervals. UKER has developed a script to flatten the JSON data into a tabular format that works on the data provided by Simon. Thus, to provide data to the research groups, the interface is technically not required.
    - Simon mentioned that the interface is part of a required project milestone and that not implementing it would need to be put in context towards the EC reviewers.
    - Agreement that priority will be put on data provision to the research groups and that the interface will not be implemented.
- Research database: Consensus to segment the research database between outcome and intervention data. The outcome database should be made available later, as it is subject to blinding. The intervention data is process data and is already accessible now.
- Pseudonymization: Is it possible to re-use the project-specific pseudonym mappings e.g. to re-run a data extraction with additional attributes?
    - Data exports are individually generated for each data use project with project-specific pseudonyms. This pre-empts an unwanted merging of datasets provided to one or more data users for different purposes. The mapping between trial participant ID and project pseudonym is generated by the UKER trust center and archived there as mandated by the data management plan.

    - The trust center will provide the mapping for legitimate purposes, which could include results reproduction or extending an existing dataset (subject to a decision of the Data Governance Board).
- Pseudonymization: Can a dataset from a previous data use project be supplemented with additional data items for another purpose than the original project (rather than requesting a fresh extract of the full dataset)?
    - If it is an extension of an ongoing data use project, the registration needs to be amended and the DGB can decide to provide the additional data elements within the existing dataset.
    - if it is a new project, a new abstract needs to be submitted to DROPS, and after a positive decision a fresh export with new pseudonyms is generated covering the full dataset.

Data Availability

- Availability of Phase I data
    - Data cleaning and free text annotation of eCRF data is ongoing due to limited resources:
        - Qualitative annotation of interview data is complete and the data is already available for analysis.
        - **Action**: Cleaned version of eCRF data is forecasted for June.
        - Qualitative annotation of eCRF freetext will take until 2025.
    - WP3 should focus efforts on making phase II data available, and phase I analyses should at this time focus on the already available qualitative or soon-to-be-available eCRF structured data.
- MaganaMed data: Would it make sense to provide harmonized calculations of commonly used scores?
    - Many of the eCRFs represent scales that need to be calculated from the raw participant answers; there is a risk that several data use projects might spend effort to re-implement this in possibly redundant and/or conflicting ways.
    - Score values could be added as "derived" attributes to the datasets, but that WP3 does not have the contextual expertise to implement or vouch for correctness of the calculations; he proposes that scores necessary for the trial endpoints and thus calculated by the trial statistician in a quality-controlled way could be added as derived attributes and re-used by the full project.
        - Often a "README" with sample code e.g. for score calculations has been provided in previous projects.
        - Rather than a text file, this could be implemented in an executable "literate programming" fashion, e.g. in Jupyter Notebook.
        - RMarkDown could be another viable option.
        - **Action**: WP4 mentions that they are interested to calculate a "home" location as a derived attribute; subject to capacity on her team, Georgia may provide a script for this.

        - Score calculations will be provided in a literate programming variant that can be run or at least used as a template for re-implementation.
        - WP3 offers to store calculated score values as derived attributes in the datasets, provided that the code is documented and signed off by one of the research groups.
        - **Action**: who will implement the respective score calculations? – Needs follow-up from WP3.
- MovisensXS sensing data: Is it possible to provide a harmonized representation of time across all phase II data sources?
    - MaganaMed and TherapyDesigner provide normal data/timestamps, whereas MovisensXS provides only seconds after enrollment of the device (date/time of enrollment is available).
    - WP3 has currently planned to provide a harmonized representation as date/timestamps across all datasources. It is unclear whether high-resolution date/timestamps could, however, be a data protection issue (e.g. allowing unwanted merging of datasets from separate exports); this could be solved by mapping to a relative time starting on study enrollment. Georgia mentions that real data and time data could be relevant for time-series analysis e.g. to detect seasonal or day/night aspects. Inez mentions that it could be helpful to derive a "beep count" from the TherapyDesigner data. Thomas adds that we need to take care not to conflict this with the beeps from the MovisensXS ESM capture.
    - **Action**: Thomas will discuss sensitivity of the date/time stamps with Tariq from the Edinburgh team.
    - **Action**: A harmonized representation of time will be implemented by WP3 based on the outcome.

Dummy Data

- Is it necessary to provide dummy data for data sources which at this time are already open for re-use of the real data?
    - Dummy data is primarily intended for allowing to start with implementation of analysis scripts before the trial database has been closed. Subject to DGB approval, some of the data sources can already be accessed directly.
    - No (additional) dummy data will be implemented for data sources that can at this time already be accessed directly.

Data Use Process

- Registration & Approval Process
    - **Action**: Data availability check should be moderated by Jeroen as part of the overall pre-registration & data use process.

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Research Data Management: Next steps

- How can data quality issues be identified and solved?
  - WP3 can only identify structural/syntactic issues in the source data, but is not qualified to assess contextual or medical plausibility of the data.
    - E.g. issues with misspelled identifiers or non-numeric data entered into numeric fields were identified and discussed with WP7.
    - **Action**: Data quality issues beyond this need assessment by the respective clinical work packages (e.g. WP7)
    - Errors should if possible be corrected in the respective source system while data entry is still ongoing.
  - An alternative (post-data-entry) approach is currently being implemented by Maria for phase I eCRF data that uses scripts to correct data quality issues in a derived version of the dataset while keeping the original version intact and documenting the process.
    - No concrete decision was made regarding how to proceed with further quality checks at the meeting.
    - **Action**: follow-up in the next Steering Committee meeting
- Best way to bring forward the proposals discussed during the meeting?
  - **Action**: Proposal to organize an online workshop between WP3 and data users to discuss requirements and potential issues.
  - **Action**: Proposal to organize a longer online Hackathon between WP3 and data scientists including (but not limited to) WP4 for a more in-depth hands-on implementation e.g. of derived data elements.

Pre-registration Workshop

See slides (1)
See slides (2)

- **Action:** WP8 will email the requirements (1 or 2 paragraphs) for WP8 paper to Maria (WP5) and do the same for other WPs.
- **Action:** WP 8 will contact the data management team for co-ordination of data requests.
- **Action:** WP8 will follow-up on papers that are not yet in DROPS.
- **Action:** WP8 will add dates to DROPS [e.g. when submitted / when approved / when X is due] by using the 'Card Table' on basecamp?

Appendix 2: minutes of the meeting

(Day 1 afternoon)

Core papers & deliverables

See slides

Overview of papers

- Position paper: Inez/Uli/Matthias
  - **Action**: Paper was desk-reject from Lancet Psychiatry. Inez will resubmit to Psychological Medicine?
- WP4: Algorithm paper is currently under review and is going to be accepted early May. Second paper on high recommendation framework.
- Finances were redistributed from WP5 to WP7 for data recruitment.
- WP5: 3 main outcome papers:
  - Qualitative Paper Phase 1
    - Theresa has pre-registered the privacy paper (second layer of coding is needed), but she does not have time to drive writing the paper. Lena is interested in joining, but she won't be able to fully write up the paper. She is currently working on a quantitative paper on latent class analysis, and a qualitative paper (together with Michael, psychiatrist in training). We discussed two options, dividing the work on Theresa's existing preregistered paper between PhD students and designating a qualitative paper on Phase 1 that a PhD student is already working on as the main qualitative paper.
      - **Action**: PhD students (Adam, Julia, Islay & Lotte) will divide the work and write up the paper together.
  - Quantitative Paper Phase 1
    - Maria and Matthias are working on analysis. Maria is writing the pre-registration.
    - Target journal: PLOS digital health?
  - User Experience during deployment paper
  - D5.2: This consists of two pieces of work, one qualitative, one quantitative. Due to the reallocation of funds, we will need to allocate one IMMERSE PhD student to the qualitative part of D5.2, and one IMMERSE PhD student to the quantitative part of D5.2.
    - **Action**: Maria will start organizing D5.2 in September-October.
  - Matthias, Joanne, and Lotte were interested in collaborating on D5.2.
- WP6:
  - Opinion paper on medical device regulation:
    - Politico
    - Local newspapers
- WP7:
  - Main outcome paper:
    - Split into two papers? Back-to-back papers.

                - Depends on data and results, but there is already a structure from the pre-registration.
                - Effectiveness
                - Fidelity
                - ESM pre-post data
            - Don't send these to two separate journals.
            - Some journal, like Lancet have guidelines for main papers. Can take up to 200 pages with appendices. It is possible to have everything in one paper.
            - Methods paper can be separate, because it has different analysis. Is not pre-registered or planned at the moment.
        - Process evaluation paper:
            - Make 4-6 papers, for each country. Start in Germany with coding German data.
            - Shared responsibility but also opportunity to write own paper.
            - Country specific code books, but also one joint code book – Jessica will work together with experts from each country to have final draft. – monthly meetings to make a publication plan.
            - Overlap outcome – process evaluation
        - Economic evaluation paper:
            - Jan suggested to put that in one big paper
            - Manuela wants to wait for the results, and decide if we would need one or two papers
                - Primary economic evaluation
                - Couple of additional papers
        - Protocol paper has been submitted to Implementation Science, but will probably get rejected. We can pre-print it ourselves.
- WP8
    - Jeroen will write a white paper on forecasting models.
    - Co-authors? Maria, Luca?, Rafael, Lena, Daniel, Simon and Simona.
        - To be contact person about experiences, challenges, user feedback during the clinical implementation, not actual writing.
- **Action**: Discuss status of papers in the next Steering Committee Meeting (May 16th)

Other papers

Overview of papers

- **Action**: Make timeline more specific by review meeting.
- **Action**: UK needs to add their papers/ideas.
- **Action**: Maria will provide a clean version of the full data set to Erlangen and send it to those PhD students who need it for their papers (at the moment, Lena).
- **Action**: Lena will start writing code for her quantitative analysis paper with the Belgian data.

- **Action**: Add your presentations about IMMERSE to your quarterly reports.
- **Action**: Create card table in Basecamp
- **Action**: All papers should be in DROPS, once there will be a concrete plan (WP8?)
- Current status of papers/ideas:
    - Lena: Qualitative paper & latent class paper: In progress
    - Julia: paper on clinician implementations of ESM visualisations is pre-registered.
    - Adam: paper on addiction patients is pre-registered.
    - Comparison of phase 1 and 2 codebook: Michel will supervise.
        - Can be one of the process evaluation papers?
        - Can be written later, we need papers from WP6 and 7 first.
    - Rafael: What data can Rafael use? The DMMH compliance data? – Depending on Rafael's timeline.
    - Lotte: prioritize phase 1 data over Theresa's paper.

Dissemination & IP

See slides

- Suggestion on exploring alternatives to do such workshops online.
- Further discuss intellectual property
- **Action**: Translate what was drafted on the blackboard / paper sheets to a dissemination plan.
- **Action**: Follow-up on IP generation in the next ESG meeting.

(Day 2)

SAB

Present: Lucia Valmaggia, Mario Alvarez & Jan Boehnke

See slides

- We will very likely not reach recruitment target, we estimate to land on about 85% of target. What can we do in terms of power analyses?
    - 85% is very good for a clinical trial, this is a significant achievement. About 80% of implementation studies in the UK end recruitment at about 80% of target. We don't have to worry about this recruitment number.
    - **Action**: Final boost for recruitment: inform the sites that these will be the last months, set clear targets. Try to put in a lot of effort to improve conversion and attrition rates.
    - Expectation that power will be sufficient based on current numbers.
    - Making adjustments to statistical plan or implementing interim analyses would most likely cause more issues than not reaching target recruitment.
- Any insights into disentangling feasibility of the study versus implementation of the intervention?

    - In the process evaluation or interviews we can focus on questions about methodology around trial (inclusion criteria, multiple sites, randomization, prioritizing research in clinical departments, …) versus on things related to the intervention (participants in the group randomized to the intervention; what was their experience?).
    - Make sure that the sample is representative for the population: e.g. if we conclude that the trial was effective since effects show up after randomization, but then there's also a preselection of participants for which the intervention could be effective.
    - We have a lot of information to include in the process evaluation from different perspectives (clinicians, participants, …)
- Medical device regulations form a barrier, it pushes the market towards unregulated and untested devices ("lifestyle apps"). Do you have any experience on how to make an impact on policy makers or regulation?
    - Maybe ethical committees should be more involved since there has to be regulation but it has to be faster and easier, but also with a strong ethical framework. Maybe ethical committees can support in this? Is it needed to register as a device to do a trial?
    - **Action**: Inez will reach out to Amy Hardy to get additional feedback on this as she is going through a similar process.

Recruitment

See slides

- Look at demographics at service/unit level to possibly rule out selection bias?
- Edinburgh: one of the sites that has been allocated to the control group will probably not actively recruit any additional participants because they don't want to participate as a control group. But some participants had already been recruited so they are part of the trail.
    - **Action**: Discuss further with Jan if necessary
- Try do a final push in recruitment!
- How to increase number of identified and screened participants?
    - Try to combine screening and baseline, or try to schedule them as close together as possible so you don't lose participants in between.
    - Be flexible about completing the forms: on paper or digital, don't have to complete every item, …
    - Conversion/attrition rates: try to build a connection with clinicians/participants and have a more personalized approach (e.g. some prefer email, others prefer a phone call, when to contact them, …)
    - Simplify the tasks for clinicians as much as possible: prepare materials and bring it down to the basics.
    - Emphasize our shared responsibility in this international project.

    - Organize group workshops with clinicians who successfully use DMMH and other colleagues.
    - Refreshing posters in waiting rooms.
    - Poster introducing the research team: so that possible participants can see the people behind the project.
- How to lower attrition rate at follow-up?
    - Link this to clinician sessions: try to catch participants there (if they are still in treatment)
    - Be flexible with the dates (doesn't have to be exactly 2 months after baseline, can be pushed up a bit)
    - Give them the option to fill out follow-up questionnaires online or in person.
    - Try to get support from the team leads.
    - If you can't reach participants by phone or emails, send a letter or ask the clinician if they are still in contact with them.
    - Be flexible about where to meet up with participants (in the hospital, at the research center, faculty building, …)
    - Be persistent: T1 is a very important measurement point for the trial!

Economic evaluation: study protocol and data analysis plan

See slides

- Data collection will end in March 2025 so we won't have T3 data for all participants. Include this in preregistration for economic evaluation?
- **Action**: Further discuss in upcoming SC

WP7: Process evaluation

See slides

- Try to conduct interviews with participants that have had sufficient exposure to the trial/intervention so that we can get relevant feedback. We are however also interested in the barriers that people experienced (e.g. participant who could have used the intervention but didn't).
- **Action**: Further discuss process evaluation in WP7 meetings (e.g. who will take on the data coding in each team?)

Ethical Questions

- There was a meeting with the ethics advisory board in February after which the members of the board expressed their availability to be more actively involved in the consortium:
    - **Action**: Collect ethical questions that we can then present to them in the next meeting.
    - Suggestions:
        - How to go about clinicians who think it's unethical to expose patients to a trial if they are allocated to control condition?
        - Not recruiting full target; how common is this? Any considerations we need to take into account? What should we include in the discussion on this?

        - Opinion piece: ethics of taking away tool that participants experienced as useful and helpful? We are not allowed to provide the tool outside of the trials.
        - Involvement of minors?
    - **Action**: If anyone is interested in participating in the meeting with the ethics advisory board or has additional questions for them, let Luca know.

Actions

Who	What
WP1 (Silke)	Schedule Review meeting + practice sessions
WP1 (Silke)	Schedule online SC meeting in the fall + GA in Leuven in 2025
WP8 (Jeroen)	Resubmit D8.2
WP1 (Silke)	File amendment for no cost extension
WP4	Schedule workshop on applying the developed ML algorithm
WP4	D4.3: prepare code
WP3	Finish cleaned version of eCRF data by June 2024.
WP4	Provide script for MaganaMed data ("home" location)
WP3	Follow up on respective score calculations
WP3 (Thomas)	Discuss sensitivity of the date/time stamps with Edinburgh team.
WP3	Implement a harmonized representation of time based on the outcome.
WP8 (Jeroen)	Data availability check should be moderated as part of the overall pre-registration & data use process.
WP3	Data quality issues assessed by clinical work packages
WP3	Quality checks should be discussed in the next SC meeting
WP3	Organize online workshop between WP3 and data users
WP3	Organize longer online Hackathon between WP3 and data scientists.
WP8 (Jeroen)	Email the requirements (1 or 2 paragraphs) for WP8 paper to Maria (WP5) and do the same for other WPs.
WP8 (Jeroen)	Contact the data management team for co-ordination of data requests.
WP8 (Jeroen)	Follow-up on papers that are not yet in DROPS.
WP8 (Jeroen)	Add dates to DROPS [e.g. when submitted / when approved / when X is due] by using the 'Card Table' on basecamp?
WP1 (Inez)	Resubmit position paper
WP5 (Maria)	Get quantitative data ready for analysis (Lena and main quantitative paper). Support PhD students working on Phase 1 data
Everyone	Focus on output – papers!
WP1	Discuss status of papers in the next SC meeting (May 16th)
Everyone	Make timeline more specific by review meeting. + UK needs to add their papers/ideas
Everyone	Add your presentations about IMMERSE to your quarterly reports.
Everyone	Create card table in Basecamp

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WP8?	All papers should be in DROPS, once there will be a concrete plan
WP8	Translate what was drafted on the blackboard / paper sheets to a dissemination plan.
WP8	Follow-up on IP generation in the next ESG meeting.
WP7	Final boost for recruitment
WP1 (Inez)	Reach out to Amy Hardy
WP7	Discuss recruitment further with Jan if necessary
WP7	Discuss Economic evaluation in the next SC meeting.
WP7	Further discuss process evaluation in WP7 meetings
WP6	Collect ethical questions for ethics advisory board.
Everyone	Anyone interested in participating in the meeting with the ethics advisory board or has additional questions for them? – inform Luca