Work package number [9]	WP5	Lead beneficiary [10]	3 - UEDIN
Work package title	Stakeholder engagement		
Start month	1	End month	48

Objectives

• To determine actionable requirements that ensure a good user experience of service users, clinicians, and the service users' support network when the DMMH is deployed in each country, and translate this into actionable insights for WP2 and WP7
• To understand how service users appropriate DMMH to support their health and wellbeing, and translate this into actionable insights for WP4 and WP7

Description of work and role of partners

WP5 - Stakeholder engagement [Months: 1-48]
UEDIN, KU Leuven, CIMH, UK BA, UPJS
Ensuring a good overall user experience, based on an in-depth understanding of the context of use, and the technology available to users, is crucial to successful uptake of the DMMH intervention. Therefore, WP5 will conduct in-depth user experience work with key stakeholder groups: service users, clinicians, and members of the service users' support network. These studies will be designed to fit into the NASSS framework adopted by WP7 to inform the creation of implementation strategies and the final realist evaluation. Key qualitative and quantitative insights will be fed back to WP2 to inform the revision of the initial prototype. All studies in WP5 will be designed to ensure that potential barriers and facilitators related to gender, and major relevant intersections of gender with e.g. social class, and ethnicity are covered.

Task 5.1. Establishing the Technology Context (M1-M9) (UEDIN, CIMH, KU Leuven, UK BA, UPJS)
In a questionnaire study of 400 service users (100 per country (Belgium, Germany, Scotland, and Slovakia)), 200 support network members (50 per country) and 100 clinicians (25 per country), we will establish what technology service users, clinicians, and support network members are comfortable using in their private and professional lives; their attitudes to technology, technology literacy, and technology self-efficacy; their use of technology for self-care / patient care; relevant issues around privacy, security and trust (defined in collaboration with WP6); and
their intention to adopt the DMMH if offered. Together this will yield a nuanced view of the context of use across all field sites.

Questionnaire design will be led by UEDIN, informed by the NASSS framework, with input from all partners. The main body of the questionnaire, including gender-related questions, will be the same for all countries, with country-specific content in the demographics section (ethnicity, education). Translation and back translation will be used for scales that exist for English, but have not been validated for German, Dutch, or Slovak. Questionnaires will be distributed both online and via mail.

Participants will be recruited through crowdsourcing platforms, service user networks, and health services. We aim to match the demographics of the service user participants in each country to the case mix seen in the country's deployment sites, and will work with relevant advocacy groups to ensure that a range of different gender identities are represented. Structural equation modelling will be used to predict intention to adopt and identify barriers and facilitators of adoption.

Task 5.2. Establishing the Context of Self-Tracking Practices and ESM (M3-M18) (UEDIN, CIMH, KU Leuven, UK BA, UPJS)
At each field site, we will conduct semi-structured interviews and workshops with service users (40 total, n=10 per site), support network members (20 total, 5 per site), and clinicians (15 total, n=5 per site) who have previously completed the questionnaire to explore:
(1) their attitudes towards self-tracking physical and mental health in general and experience sampling methods in particular
(2) potential barriers and facilitators to adoption of and adherence to the DMMH using technology probes. Participants to work through several typical tasks using a DMMH prototype, provided by WP2
(3) Potential contexts, mechanisms, and outcomes for the realist evaluation using vignettes
(4) Relevant information for creating a pre-deployment initial NASSS assessment for each site

Interview participants will be selected to maximise diversity of perspectives and backgrounds. The interview design will be led by UEDIN, with input from all partners, in particular WP2, WP6 and WP7. Qualitative findings will be analysed using Framework Analysis[145], a well-established analysis method for health
policy contexts. Relevant top-down codes will be derived from the NASSS framework[84] and the Mobile App Rating Scale[146] and complemented with bottom-up coding. Particular attention will be paid to gender-related issues that emerge in the analysis. The user experience will also be documented with relevant quantitative metrics (efficiency of use, task success). Those quantitative metrics, together with relevant qualitative results, will be designed in collaboration with WP2 and fed back to complement the findings of WP2, Task 2.3.

Task 5.3. Tracking Users' Appropriation of DMMH (M12-M48) (UEDIN)
Based on data from WP7, we will examine how service users and clinicians appropriate DMMH to serve their particular needs. Appropriation[147] is a well-known phenomenon in Human-Computer Interaction, where users engage with a system such as the DMMH in a meaningful way that does not follow instructions of use. Previous experience[80] has shown that usage patterns of eMental Health solutions can change substantially when deployed more widely, which means that analysis algorithms need to be able to adapt to flexible patterns of use and adherence. Therefore, we will closely work with WP4 to identify metrics that allow WP4 to integrate appropriation patterns into their modelling.

The analysis will be designed to fit within the realist evaluation approach adopted for the overall project[148], highlighting potential outcomes (such as particular patterns of appropriation), mechanisms (such as positive user experience) and context (such as general use of mobile phones for tracking and improving one's physical and mental health).

In the stakeholder engagement WP (WP5), we will collect qualitative data on patients' adoption and use of the system using a sampling strategy that maximises diversity of perspectives and backgrounds. The results are intended to inform the Implementation WP (WP7) and the Machine Learning WP (WP4) in their modelling and analysis.

Participation per Partner

Partner number and short name	WP5 effort
1 - KU Leuven	6.00
2 - CIMH	6.00
3 - UEDIN	19.08
4 - UK BA	3.00
5 - UPJS	3.00
Total	37.08

List of deliverables

Deliverable Number[14]	Deliverable Title	Lead beneficiary	Type[15]	Dissemination level[16]	Due Date (in months)[17]
D5.1	Report on Technology Context and Self-tracking Practices	3 - UEDIN	Report	Public	18
D5.2	Report on User Experience during Deployment	3 - UEDIN	Report	Public	48

Description of deliverables

• D5.1: Report on Technology Context and Self-tracking Practices
• D5.2: Report on User Experience during Deployment

D5.1 : Report on Technology Context and Self-tracking Practices [18]

This report will consist of two papers, one paper that reports the full results of the survey conducted in Task 5.1, and one paper that reports qualitative and quantitative findings from Task 5.2

D5.2 : Report on User Experience during Deployment [48]

This report will consist of a paper that reports on how clinicians and patients used DMMH during deployment, with particular attention paid to reasons for missing data and examples of unintended, yet meaningful, use

Schedule of relevant Milestones

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	Framework for initial questionnaire and interview studies in place	3 - UEDIN	3	
MS5	Internal document on the implications of findings for the implementation of IMMERSE	3 - UEDIN	12	