D6.5 Patient Engagement Sustainability Roadmap

777450 - PARADIGM

Patients Active in Research and Dialogues

for an Improved Generation of Medicines

WP6 Sustainability Strategy

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V1.1	06/04/2020	First review cycle WP6
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V2	01/07/2020	For internal peer-review
V3	31/07/2020	For approval by Steering Committee

Definitions

Partners of the PARADIGM Consortium are referred to herein according to the following codes:

- **EPF**. EUROPEAN PATIENTS FORUM (Luxembourg) – **Project Coordinator**
- **EURORDIS**. EUROPEAN ORGANISATION FOR RARE DISEASES ASSOCIATION (France)
- **EATG**. EUROPEAN AIDS TREATMENT GROUP (Germany)
- **AE**. ALZHEIMER EUROPE (Luxembourg)
- **AIFA**. AGENZIA ITALIANA DEL FARMACO (Italy)
- **HTAi**. HEALTH TECHNOLOGY ASSESSMENT INTERNATIONAL (Canada)
- **IACS**. INSTITUTO ARAGONES DE CIENCIAS DE LA SALUD (Spain)
- **FSJD**. FUNDACIO SANT JOAN DE DEU (Spain)
- **VU-ATHENA**. STICHTING VU (The Netherlands)
- **UOXF-CASMI**. THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD (United Kingdom)
- **EFGCP**. EUROPEAN FORUM FOR GOOD CLINICAL PRACTICE (Belgium)
- **SYNERGIST**. THE SYNERGIST (Belgium)
- **SYNAPSE**. SYNAPSE RESEARCH MANAGEMENT PARTNERS SL (Spain)
- **EFPIA**. EUROPEAN FEDERATION OF PHARMACEUTICAL INDUSTRIES AND ASSOCIATIONS (Belgium) - **Project Leader**
- **MSD Corp.** MERCK SHARP & DOHME CORP (United States)
- **UCB**. UCB BIOPHARMA SPRL (Belgium)
- **ABPI**. THE ASSOCIATION OF THE BRITISH PHARMACEUTICAL INDUSTRY (United Kingdom)
- **AMGEN**. AMGEN LIMITED (United Kingdom)
- **BAYER**. BAYER AKTIENGESELLSCHAFT (Germany)
- **GSK**. GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT (United Kingdom)
- **GRT**. GRUENENTHAL GMBH (Germany)
- **JANSSEN**. JANSSEN PHARMACEUTICA NV (Belgium)
- **LILLY**. Eli Lilly and Company Limited (United Kingdom)
- **LUNDBECK**. H. LUNDBECK AS (Denmark)
- **MERCK**. MERCK KOMMANDITGESELLSCHAFT AUF AKTIEN (Germany)
- **NOVO NORDISK**. NOVO NORDISK A/S (Denmark)
- **PFIZER**. PFIZER LIMITED (United Kingdom)
- **ROCHE**. F. HOFFMANN-LA ROCHE AG (Switzerland)
- **SERVIER**. INSTITUT DE RECHERCHES INTERNATIONALES SERVIER (France)
- **VFA**. VERBAND FORSCHENDER ARZNEIMITTELHERSTELLER EV (Germany)
- **SARD**. SANOFI-AVENTIS RECHERCHE & DEVELOPPEMENT (France)
- **NOVARTIS**. NOVARTIS PHARMA AG (Switzerland)
- **COVANCE**. COVANCE LABORATORIES LTD (United Kingdom)
- **ALEXION**. ALEXION SERVICES EUROPE (Belgium)

- **Consortium.** The PARADIGM Consortium, comprising the above-mentioned legal entities.
- **Consortium Agreement**. Agreement concluded amongst PARADIGM participants for the implementation of the Grant Agreement. Such an agreement shall not affect the parties' obligations to the Community and/or to one another arising from the Grant Agreement.
- **PILG.** PARADIGM International Liaison Group.

1 Patient engagement sustainability roadmap: why?

Achieving structured and systematic patient engagement (PE) in medicines development in a sustainable and impactful way requires acting on system readiness and capability building for engagement among all stakeholders, based on three elements: 1) patient education and training; 2) development of generic tools for engaging; and 3) sustainability of patient engagement in terms of culture, processes and resources. Only when all three aspects are adequately addressed can patient engagement become the norm (modified from Boudes 2017).

The IMI-PARADIGM consortium developed this sustainability roadmap to:

- support optimal PE in key decision-making points across medicines' lifecycle;
- demonstrate the inherent link between education, patient engagement and the innovation of creating tools, processes and guidance; and
- ensure long-term use of the resources developed during the project, which built on existing resources, in each case with sustainability models matching the needs of each stakeholder group.

This roadmap is based on three identified dimensions that make PE sustainable, i.e. culture, processes and resources. They are the key elements to collectively act upon to sustain the PE ecosystem. The roadmap also brings in fundamental PARADIGM assets such as the work package (WP) 4 Patient Engagement Toolbox, WP3 monitoring and evaluation framework and WP5 Patient Engagement Open Forum (PEOF), that will contribute to achieve system-wide sustained patient engagement, working in a complementary manner with existing frameworks and mechanisms.

2 Who is this roadmap for?

All organisations/institutions involved along the lifecycle of medicines, i.e. patients and patient organisations (POs), medicines developers, academia, regulatory authorities, health technology assessment (HTA) bodies, payers, policy makers and public research funders., should read this roadmap from the perspective of their own stakeholder group.

The actions described are adapted to one, more than one or all stakeholder groups and their organisations. In terms of accountability, the roadmap should be implementable by everyone and everyone should be responsible, as no single entity will be ultimately responsible for its implementation or update. Informal collaborations and benchmarking through knowledge-sharing platforms and other mechanisms will play a role in taking the strategy forward to ultimately achieve the vision. The emergence of the Patient Engagement Open Forum (PEOF)[1], with its hands-on approach to PE, could strengthen these multi-stakeholder collaborations.

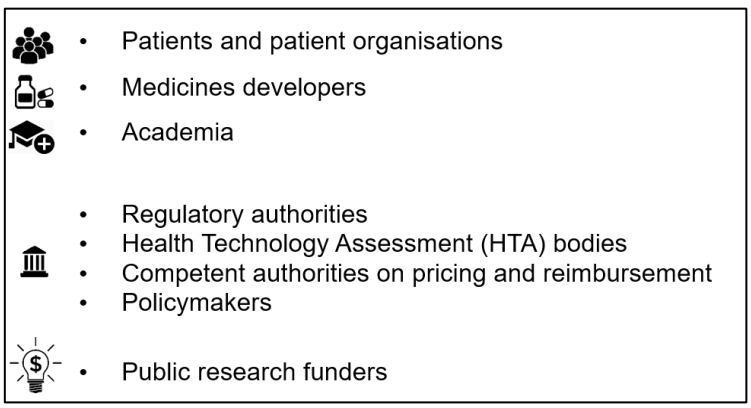

Figure 1. Stakeholders involved along the medicines life-cycle

[1] Patient Engagement Open Forum. https://patientengagementopenforum.org/

3 What this roadmap is not

This roadmap is not a step-by-step detailed operational plan on how to implement PE activities in the identified stakeholder organisations.

4 Methodology

The creation of the sustainability roadmap consisted of several stages:

i. Non-systematic review of published and grey literature of scenarios building and roadmaps, and related literature from various sectors (healthcare, environmental, city planning, etc.) and on the Theory of Change (ToC) concept that informed one working group session and subsequent consultation process (Nov 2019-Jan 2020).
ii. Consideration of the definitions and purposes of roadmaps, fundamental questions and additional elements to include in the creation of the roadmap (See Annex 7).
iii. Mapping assumptions underpinning the current and possible future state of PE and the implementation potential of the roadmap itself (See Annex 4).
iv. Creating the draft architecture of the roadmap to populate with findings of previous tasks.

The final PE sustainability roadmap architecture presented below outlines a blended approach of the elements described above.

5 Roadmap architecture

Scenario planning is generally part of strategic planning (macro level) – to highlight implications of possible futures and prepare for their changes. While road mapping falls in the domain of operational business (micro level) of how to get from the current state to the future desired state, it also investigates which resources and expertise are required, which uncertainties and risks exist (assumptions), responsibilities in the implementation of goals or activities (Strauss 2004, Hasse 2016), and flex points to account for changing conditions (internal or external). It can also identify uncertainty and checkpoints based on indicators or anticipated events where strategic decisions can be made or progress/assumptions can be reviewed.

For the development of this roadmap we have defined the following elements:

- **Vision:** Agreed statement of our desired state in the future ('why we do what we do') (see Annex 7).
- **Mission:** Agreed statement ('what we do to achieve our vision').
- **End goals:** Long term aspirational outcomes.
- **Intermediate goals**: Major steps towards achieving the end goals.
- **Actions**: What is done or not to implement/deliver the goals and ultimately the vision.

6 Roadmap visual summary

The diagram below describes the main elements of the roadmap:

- **Vision**: 'Meaningful and sustainable patient engagement in medicines development for better health outcomes'.
- **Mission**: 'To have a common framework that enables structured, effective, meaningful, ethical, innovative, and sustainable patient engagement and demonstrates the 'return on engagement' for all players'.
- Four aspirational **end goals** have been identified to reach the vision:
    1. Establish an ethical, trust-based collaboration among all patient engagement stakeholders involved in medicines R&D.
    2. Secure inclusive and diverse patient engagement.
    3. Embed patient engagement in the mind-set, at every step and across organisations.
    4. Ensure dedicated leadership and operational time, resources and funding for patient engagement.
- Each end goal is broken down into concrete **intermediate goals**[2].
- **Actions** for each intermediate goal are described in the narrative of the roadmap.

[2] For certain intermediate goals, separate themes have been included to differentiate diverse, yet related topics, but these are not reflected in the visual summary

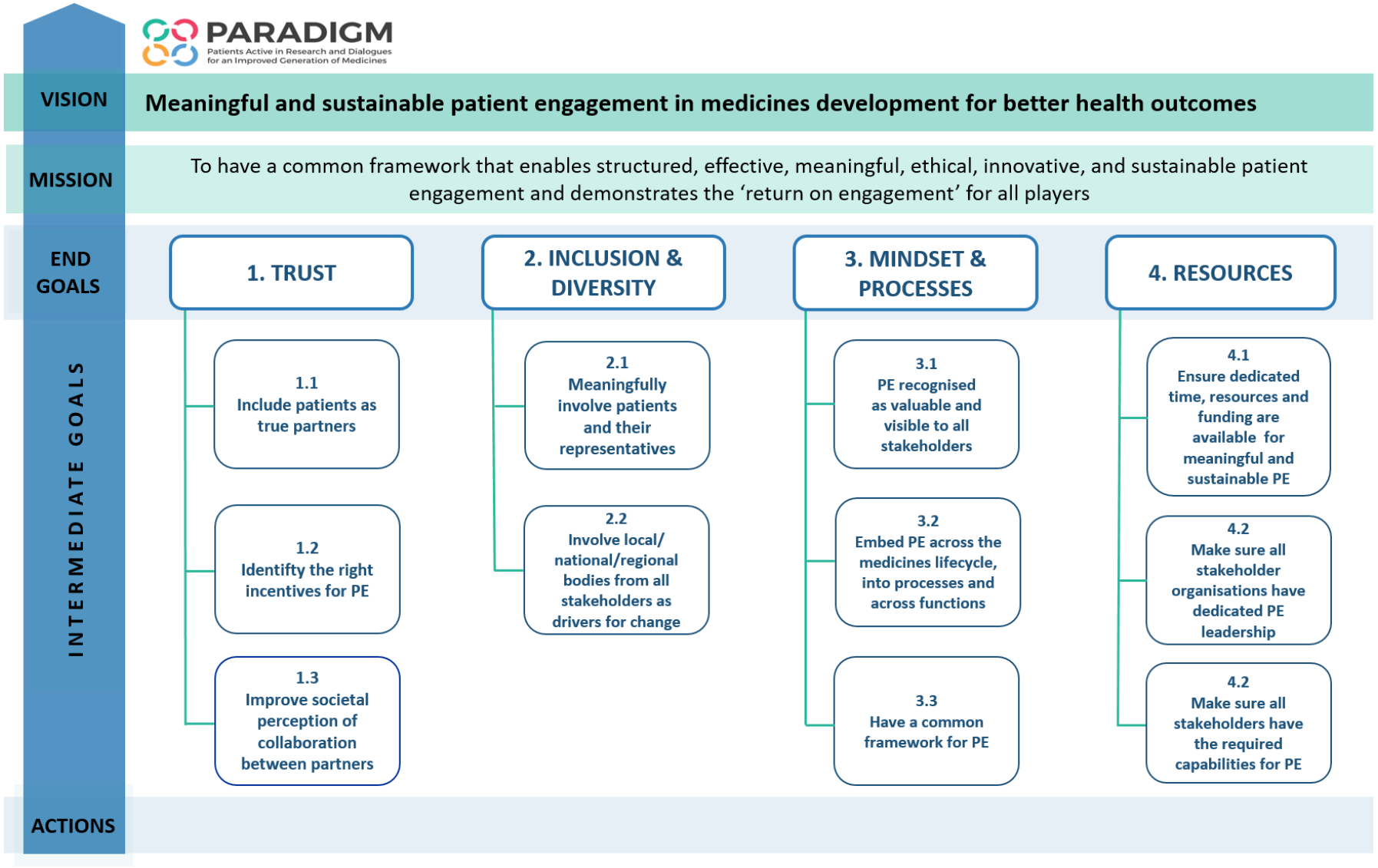

Figure 2. Visual summary of the patient engagement sustainability roadmap

7 Patient engagement landscape

Roadmapping involves how to get from the current situation to the future desired state. The current state of PE (or landscape) was defined through different approaches:

- We designed scenarios in earlier stages of the project[3] and explored in a consultation with the consortium which of them would have the most potential to deliver sustainable PE in medicines development. The preferred scenario to sustain PE in the long term would require a strong signal from authoritative institutions, making PE a requirement in medicines development, combined with a diverse and broad offering of PE services developed by a multitude of organisations, both for-profit and non-profit, each with different funding models. It should be noted that non-profit organisations delivering such services are aligned with patients' needs and motivation and it was felt by some that supporting for-profit models may restrict access to resources (engagement and funding opportunities) for POs. This exercise provided a representation of the current thinking with regards to the sustainability of PE.
- Informal interviews with consulted organisations and stakeholder groups (patient community and medicines developers), and a dedicated workshop with representation from Central and Eastern Europe (CEE) countries (for methodology details, see Annex 7). In this section, we summarize positive experiences on PE and additional context specific to the Central and Eastern Europe (CEE) region. In Annex 1 the needs and barriers related to each section of the roadmap are detailed.
- Barriers to PE were also collected during the interviews, consultations and through discussions with project partners and are described in Annex 1.

7.1 Positive experiences

During the informal interviews and discussions mentioned above, we collected positive experiences around PE and have summarized them in two broad categories:

- *Increased recognition of patients' perspectives and added value of PE in medicines development.*

The patient perspective is considered valuable by both regulators and industry alike and it is believed to potentially result in better patient outcomes. Similarly, patients feel that their perspective is recognised by other parties and that opportunities for engagement with industry and regulators (especially the European Medicines Agency[4]) have increased. Patients consider that PE improves the research process.

Here we show some examples of the approach taken by regulatory authorities with regards to PE:

At the European Medicines Agency (EMA) the culture shift has already happened and engaging patients in their activities is routine and relevant. Methodologies have been developed to add value with minimum burden for patients, POs and regulators, but sometimes it is necessary to prioritise PE in certain areas where the patients' voice adds more value over others due to resources available. EMA organises activities with flexibility on the methods in order to address adequate patient representation. Depending on the insights sought, POs or individual experts are involved.

In addition to bringing the patients' voice to the agency through the Patient Group Consultative Forum[5], the Medicines and Healthcare products Regulatory Agency (MHRA) also has positive examples of PE included in

[3] PARADIGM Deliverables D6.2 List of the relevant models addressing sustainability for all stakeholders and D6.3 Refined list of the relevant models addressing sustainability for all stakeholders

[4] Overview of patient involvement along the medicines lifecycle at EMA

[5] See the description of the MHRA Patient Group Consultative Forum at Patient-Focused Medicines Development (PFMD) Synapse website

its decision making (i.e. evaluation). Following a public consultation held in 2019, MHRA is also developing a long-term PE strategy to adopt a more systematic approach to listening to and involving patients around 4 key themes: 1) awareness, 2) transparency, 3) responsiveness and 4) partnership (MHRA consultation outcomes).

Also, at national level, the Italian Medicines Agency (AIFA) has progressively recognised the added value of PE by favouring the dialogue with representatives of POs within *Open AIFA* (an initiative promoting dialogue among the agency and relevant stakeholders). They have also signed a memorandum of understanding with the Italian Patients Academy-EUPATI for the certification of training contents to build competencies for patients contributing to the regulatory process.

Patients are also represented in the governance of the Medicines Evaluation Board[6] in the Netherlands, which includes a patient representative as a full member, together with other experts in the medicine or pharmaceutical field.

- *Multi-stakeholder collaborations*

The value of co-creation in a multi-stakeholder environment is highlighted by the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH), which attributes the high degree of adoption of its guidelines to the co-creation process with and by all the ICH members: there is a sense of responsibility to implement the guidelines. Although POs are not members of ICH, patient input to guideline development is provided through regional public consultations prior to adoption of draft and final ICH guidelines. POs could also apply to be observers during ICH meetings.

In addition, both industry and patients consider that multi-stakeholder activities bring the opportunity for sharing best practices, starting collaborations, building capacity and optimising resources. Industry highlighted public-private partnerships such as IMI-PARADIGM or IMI-PREFER or IMI-EUPATI and common networks such as the EFPIA Patient Think Tank and Patient-Focused Medicines Development (PFMD).

[6]See https://english.cbg-meb.nl/topics/about-meb-the-board

7.2 Specific considerations of patient engagement in CEE countries.

In order to improve the applicability and likelihood that the roadmap is actionable and implementable across the EU, a workshop involving 47 representatives from various stakeholders (patients/POs, pharmaceutical industry, HTA bodies and NGO's), from across the CEE region was conducted (see Annex 7).

This preliminary work provided a clear indication that, while the situation in the CEE countries share certain commonalities, it cannot be considered as homogeneous. A wide variety of issues seems to prevail that are very much country specific that broadly cover political, economic, socio-cultural and technological themes. Socio-cultural differences between countries such as the understanding and perception of PE, its value and impact but also lack of infrastructure and distrust between stakeholders are reported as important issues hampering engagement. In general, PE *per se* and collaboration between stakeholders are more closely aligned and mature among Western EU member states (MS) compared to CEE member states.

Four common themes emerged across the CEE region, amongst many nuances that require further clarification:

1. There is often a disconnect between the interactions of POs and national governments and health ministries. Some MS report that POs receive no political or financial support from governments. In some cases, patient input is not well received by the authorities or is lacking entirely from being integrated into any process, decision making or policy development. This can hinder the perceived value that POs can bring, the inclusion of the patient voice in decision making, and aligning strategies and funding mechanisms that could permit sustainability.
    - *Possible solutions*: A more dedicated and harmonised patient-oriented input into government/health ministry policy forums, that comes from a consortium of POs - rather than individual PO advocacy. Further including the expertise of HCP and academics/institutions into policy development may help provide a stronger voice.
2. There is a need for education, health literacy and capability increase within and across POs, e.g., treatment literacy, leadership and mentorship skills, support programmes, and social change skills.
    - *Possible solutions:* Include better visibility and bilateral engagement with existing platforms for training and mentorship, such as EUPATI and PFMD. Additionally, existing examples from some countries (for example, Czech Republic) where the pharmaceutical industry provides capacity building opportunities, such as training and education for POs in policy and strategy of how to engage with other stakeholders, how to secure funding and drive change, could be leveraged.
3. Broader alignment of short and long term strategies across POs is needed to help prioritise areas of value generation with limited resources and tangible milestones that can be measured and achieved.
    - *Possible solutions*: Aligning missions and strategies across POs that is centred on long term PE could be one mechanism to utilise limited resources and maximise impact.
4. Funding sources in the CEE region are very limited and reactive which undermine sustainable responses. Funding usually comes from a single source (i.e. pharmaceutical industry), resulting in a perception that POs lack independence. In addition, such funding is usually aimed at short term projects rather than strategic, long term engagements that are aimed at ensuring stable and

sustainable responses. Limited funding includes both financial reimbursement to individual patients for their time (many are unpaid volunteers), and financial support for infrastructure and operational aspects of POs and related activities.

- *Possible solutions* Require new funding models to be explored that are diversified and risk balanced, such as better visibility and access to cross-border strategic funding and programme grants (rather than project grants) and better leveraging of existing partnerships with academic institutions and health care professional (HCP) bodies.

It is acknowledged that while there is generally good enthusiasm to truly embed PE in medicines R&D in CEE countries some aspects of this roadmap will be very difficult or almost impossible to implement by some stakeholders in some countries at the present moment. Other elements of the roadmap, such as some of the intermediate goals and actions may be implementable in part or fully, or used as an advocacy mechanism to benchmark broader progress. One of our main assumptions is that meaningful and sustainable PE is fundamentally achievable, meaning that stakeholders would be able to reach the set goals. We acknowledge that this may happen at a different pace across geographies and organisations. The outcomes of the workshop suggested that the CEE region may initially require more dedicated efforts in order to achieve certain key elements before being able to tackle some of the end and intermediate goals (see Box 1).

Box 1: Elements to be prioritised in the CEE region

- Harmonise the patient voice throughout the official governmental and health ministry channels. Include expertise of academia/health care professionals.
- Align mission and strategies across POs to maximise impact with limited resources.
- Increase education, health literacy and capabilities for engagement, strategy and policy setting and financial stability.
- Diversification of funding; funding for strategic long-term programmes and better leveraging of existing partnerships with academic institutions and health care professional bodies.

8 Patient engagement sustainability roadmap narrative

The actions described are meant to be broadly applicable to all the relevant stakeholders unless specified by an icon(s) next to the action item. Needs and barriers related with each intermediate goal are described in Annex 1 (and by clicking on each intermediate goal title). For certain intermediate goals, separate themes have been included to differentiate diverse, yet related topics. Tools and resources supporting the implementation of the actions can be found on the right column.

END GOALS

1. Establish an ethical, trust-based collaboration among all patient engagement stakeholders involved in medicines development

INTER-MEDIATE GOALS

1.1. Include patients as true partners

Theme 1. Patients to have a strong, meaningful and coordinated voice for patient engagement

ACTIONS

1) Leverage existing physical and virtual networking platforms for building communities and new partnerships with other patient organisations.
2) Strategic alignment across patient organisations to bring a unified voice into decision-making bodies and policy strategy (especially in the CEE region)
3) Exchange and transfer knowledge between regional and global patient organisations of best practices for defining their strategy and objectives towards patient engagement.
4) Train patients on PE in medicines development both in terms of scientific/technical/process knowledge and leadership skills (e.g. communication, negotiation, self-awareness, etc.).

Theme 2. Include the patients' voice in the organisational structure of every relevant decision-making body and stakeholder organisations

ACTIONS

1) Identify relevant development milestones (Geissler 2017) in the decision-making processes of organisations to embed PE practices and appropriate indicators to monitor progress.
2) Demonstrate the commitment of the organisation's executive leadership and build or augment PE functions/capacity. Incorporation of the patients' voice is easier when such capacity and a receptive culture are present.
3) Use integrated resources (including trainings) to build internal capacity, listen to advocacy campaigns from organisations promoting PE (e.g. PFMD pledge to patients) and build alliances with private and public institutions that already work with evolving and established processes of PE.

Tools & Resources

- Umbrella organisations (disease/disease-agnostic) to act as a single point of contact
- Multi-stakeholder networking platforms
- Training & Education
- PARADIGM Monitoring & Evaluation (M&E) Framework
- Patient engagement integrated resources

Patient community · Medicines developers · Academia · Regulatory authorities, HTA bodies, payers, policymakers · Public research funders

END GOALS

1. Establish an ethical, trust-based collaboration among all patient engagement stakeholders involved in medicines research and development (R&D)

INTER-MEDIATE GOALS

1.2. Identify the right incentives for each stakeholder for patient engagement

ACTIONS

1) Identify and implement incentives to improve patient engagement uptake in stakeholder organisations.
2) Identify or create relevant metrics (both qualitative and quantitative) to measure the impact of PE activities and therefore their potential impact and value for all involved stakeholders. These can help build incentives that can be internal to the organisation (e.g. to have a publicly-recognised award given to staff/departments showing impact of their patient engagement strategies and activities) or external (e.g. EURORDIS Black Pearl Awards, EFPIA Health Collaboration Award).

1.3 Improve the societal perception of collaboration between patients, their organisations and relevant stakeholders

ACTIONS

1) Develop complete and discoverable case studies to demonstrate the value of patient engagement, with narratives based on data collection with the PARADIGM monitoring and evaluation (M&E) framework. Case studies should be made open source and disseminated and communicated via established and trusted platforms (e.g. PFMD Synapse).
2) Build firewalls between patient engagement and other activities (e.g. in patient organisations between engagement and advocacy; in industry between patient engagement and commercial activities) to mitigate potential conflicts of interest.
3) Establish rules and/or policies for the management of competing interests and raise awareness on this topic within the organisation.
4) Adapt tools and scales from other fields to measure perception and/or reputation of own stakeholder organisation.
5) Use collaboration and networking platforms to identify patients' perceptions on collaborating with other stakeholders and *vice versa*.
6) Be continuously involved in public-private partnerships and projects may provide a neutral platform for increased open and transparent collaboration and trust building.
7) Report about success and failure and disclose interactions creating transparency and building trust with society using legitimate trusted platforms (e.g. PFMD Synapse).

Tools & Resources

- PARADIGM Monitoring & Evaluation Framework
- PARADIGM Code of conduct
- Guidance on managing competing interests
- Consortia, supra-national bodies and networking platforms

END GOALS

INTER-MEDIATE GOALS

ACTIONS

2. Secure inclusive and diverse patient engagement

2.1 Meaningfully involve patients and their representatives

1) Make use of/build on existing tools to:
    a. Drive culture change within organisations.
    b. Assess needs and expectations before starting the patient engagement activity, to detect and correct potential deviations of the agreed upon goals and objectives and to get relevant feedback for future interactions.
    c. Systematically report on patient engagement outcomes to patients throughout the activity and communicate them publicly.
2) Disseminate the tools and training solutions to ensure patient engagement capacity building
3) Establish informal and formal mentorship and leadership programmes to ensure that knowledge and expertise are sustained within the patient community.
4) Make use and leverage existing collaboration policies illustrating the importance of collaborations between patient organisations and engaging stakeholders.
5) Follow recommendations to ensure 1) the best achievable balance between diversity of stakeholders and the expertise and experience required, 2) inclusion of underrepresented groups and vulnerable populations ad 3) geographical and gender diversity.
6) Provide evidence that processes, documents, policies have been adapted to patients' needs following existing and recognised guidelines (see EUPATI guidance on patient involvement).
7) Specifically consider requirements to engage with potentially vulnerable patient groups, patients with specific needs, patients early in their diagnosis/progression, and minority groups (seldom heard groups of patients).
8) Use periodic benchmarking surveys to assess changing attitudes to the value of patient engagement (both within and between stakeholders), in regions where perception of patients/patient organisations collaboration and value generation are poor.

Tools & Resources

- PARADIGM Patient Engagement Toolbox
- PFMD Patient Engagement Management suite
- PARADIGM Monitoring & Evaluation Framework
- Training & Education
- Multi-stakeholder networking platforms

END GOALS

INTER-MEDIATE GOALS

ACTIONS

2. Secure inclusive and diverse patient engagement

2.2 Involve local/regional/national from all stakeholder groups to act as drivers for change

1) Local/regional/national stakeholder group organisations to get actively involved as fora for discussion and/or decision making, in order to align strategies and best practices of patient engagement.
2) Build on local, national and international projects and initiatives as a driver for a system-wide culture change among different levels of organisations within their areas of influence.
3) Promote local, national and international alliances between stakeholders, networks, projects, initiatives to avoid fragmentation and duplication. Disseminate, share, and adopt (when appropriate) exemplar case studies of good practices of patient engagement.
4) Utilise bilateral exchange programmes of knowledge, people and ideas between organisations as part of a continuous learning ecosystem.

All relevant stakeholders including local/regional/national health authorities, national branches of medicines developers' organisations and umbrella patient organisations and their national/regional members have an equally important role in driving change in decentralized health systems.

Tools & Resources

Consortia, supra-national bodies and networking platforms

END GOAL

3. Embed patient engagement in the mind-set, at every step and across organisations

INTER-MEDIATE GOAL

3.1 Recognize patient engagement as valuable and visible to all stakeholders

Theme 1: Measurable patients' insights are valuable evidence in medicines R&D

ACTIONS

1) Apply relevant methodologies for the collection of patient experience data using guidelines from authoritative sources [See Annex 6]. This data should be ideally reported at regular intervals including its analysis to provide evidence of the added value generated.
2) Use metrics to identify how many and which type of insights have been implemented.
3) Enhance research about patient engagement (e.g. on how to conduct patient preference studies, how to do patient engagement, cultural barriers to inclusivity, etc.).

Theme 2. To grow a multi-stakeholder community /critical mass that is convinced of the value of patient engagement

ACTIONS

1) Identify champions/early adopters from each stakeholder organisation that could influence the general public opinion to increase the recognition of the value of PE.
2) Go beyond early adopters and innovators and make sure the whole organisation is aware, empowered and capable of supporting patient engagement activities relevant to their function.
3) POs to partner with higher education institutions and learned societies to train future professionals who would be the workforce of health care institutions, health care industry, regulatory authorities and HTA bodies and academia on patient engagement and the role of patients in medicines development and access.
4) Educate, to the extent relevant, all staff in stakeholder group organisations to embed patient centricity in their roles.
5) Identify relevant communication channels to disseminate articles, case studies or patient engagement research results to upper management or the entire organisation.

Tools & Resources

- FDA Patient-Focused Drug Development (PFDD) guidance series
- EMA Regulatory Science to 2025
- PARADIGM Monitoring & Evaluation Framework
- Recommendations on the capabilities for patient engagement
- Training & Education

END GOAL

3. Embed patient engagement in the mind-set, at every step and across organisations

INTER-MEDIATE GOAL

3.1 Recognize patient engagement as valuable and visible to all stakeholders

Theme 3: To achieve and demonstrate better health outcomes through patient engagement

ACTIONS

1) Identify relevant indicators showing that patient engagement could lead to better health.
2) Identify indicators to reflect that patients' needs were met.
3) Identify positive outcomes or those specific to meeting patient's needs as a measurement of successful and meaningful patient engagement.
4) Identify negative outcomes and reverse engineer them in order to understand where and what needs to be improved.
5) Carry out processes according to best practices, for example identifying the right patient in medicines R&D or ensuring patient-centric research.

Theme 4. Sustainability of patient engagement is a key policy issue for every relevant decision-making body and organisation

ACTIONS

1) Identify key organisations (public funders or other public health organisations/bodies) with the mandate to create the conditions for and facilitate patient engagement in medicines development (top-down approach).
2) Increase the co-creation of useful, high-quality policies which include patient engagement.
3) Use relevant tools to define policies and guidelines for the sustainability of patient engagement
4) Get the support from senior management to implement PE within organisations.

5) Patient organisations to increase alignment across organisations of their core mission, strategies and milestones to help support a harmonised patient voice into PE strategy and policy setting within decision making bodies.
6) Use the M&E framework to select metrics to show how a patient engagement activity translates into desired outcomes and impacts.

Tools & Resources

- PARADIGM Monitoring & Evaluation Framework
- PARADIGM Patient Engagement Toolbox
- PFMD Patient Engagement Management suite
- Recommendations on the capabilities for patient engagement
- Training & Education

END GOAL

3. Embed patient engagement in the mind-set, at every step and across organisations

INTER-MEDIATE GOAL

3.2 Embed patient engagement across the medicine's life-cycle, integrated into processes and across functions

ACTIONS

Theme 1. Follow a structured systematic approach to embed patient engagement

1) Ensure that the required capabilities and capacities to implement PE are present at the organisational level.
2) Ensure a secure repository within the organisation for PE resources, tools and recommendations and create a process to enable these to be easily discovered and updated as appropriate.
3) Identify PE leaders or champions to drive cultural and organisational changes.
4) Organisational functions (i.e. dedicated PE functions, those directly involved in PE activities and supporting functions) to be knowledgeable on the above mentioned resources (best practices, tools and recommendations) and acquire the competencies required to apply them.
5) Implement awareness-raising, continued learning/training programmes and processes to share information within organisations.
6) Each organisation to establish monitoring and evaluation systems to measure the adoption and integration of existing and available best practices, tools/recommendations into relevant patient engagement activities.
7) Strategically plan PE activities and develop a monitoring and evaluation plan to assess whether the desired outcomes and impacts have been achieved.

Tools & Resources

- Recommendations on the capabilities for patient engagement
- PFMD Patient Engagement Training
- Training & Education
- PARADIGM Monitoring & Evaluation Framework

END GOAL

3. Embed patient engagement in the mind-set, at every step and across organisations

INTER-MEDIATE GOAL

3.2 Embed patient engagement across the medicine's life-cycle, integrated into processes and across functions

ACTIONS

Theme 2. Integrate patient engagement into the relevant procedures of regulatory authorities, HTA bodies and payers

1) Integrate the patients' voice in all relevant activities in a systematic and transparent way and to develop a visible framework to engage with patients, including the guard rails needed to manage public perception on the engagement of patients and medicines developers.
2) Each organisation to set their own metrics to measure the degree and effectiveness of implementation of PE in their activities/processes and ensure that they are transparent and available to the public.
3) To make use of existing platforms in regulatory science and annual country-specific fora (e.g. of national regulatory authorities) to enhance the PE discussion and build consistent and robust practices. Timelines for implementation should be set by each organisation according to their own strategic plans.

Theme 3. Target patient engagement in the areas/decision-making points where it would be most relevant and add most value

ACTIONS

1) Identify those points in the R&D pathway (Geissler 2017) where patients should get involved because patients' insights are essential (e.g. endpoint validation, development of patient-relevant outcome measures, benefit-risk assessment, clinical trial design, etc.).
2) Establish health outcomes specific to patients needs as a measurement of successful and meaningful PE
3) Use tools (monitoring and evaluation framework, gap analysis, retrospective analysis) to identify areas of major need and relevance.

Tools & Resources

- Recommendations on the capabilities for patient engagement
- Guidance on managing competing interests and related tools
- PARADIGM Monitoring & Evaluation Framework
- Regulatory science platforms
- FDA Patient-Focused Drug Development (PFDD) guidance series
- EMA Regulatory science to 2025

END GOAL

3. Embed patient engagement in the mind-set, at every step and across organisations

INTER-MEDIATE GOAL

3.3 Have a common framework for patient engagement

ACTIONS

Theme 1. Public health organisations/authorities (e.g. WHO) to establish clear priorities for patient engagement in medicines development

1) Stakeholder organisations should define their own strategy towards this goal (e.g. advocacy).
2) In the specific case of the World Health Organisation, eligible organisations (e.g. NGOs, private sector entities, philanthropic foundations, and academic institutions) may apply for accreditation of regional non-state actors to attend meetings in the WHO regional committee for Europe.

ACTIONS

Theme 2. Patient engagement requirements to be harmonised in systematic methodologies

1) Harmonize patient engagement practices in clinical trial programmes through ICH guidelines.
2) Produce clear guidelines on what type of patient engagement/experience data can be submitted as evidence and how the data will be used.
3) Enhance and proactively support the inclusion of patient experience data in the decision making of regulatory authorities, HTA bodies and payers.
4) Relevant institutions to define their own strategy towards these goals. Ongoing efforts are undertaken in this direction.

Tools & Resources

- Supra-national bodies
- Harmonisation bodies
- Regulatory science platforms
- HTA and payer networks
- FDA Patient-focused drug development guidances
- EMA Regulatory science to 2025

END GOAL

4. Ensure dedicated leadership and operational time, resources and funding for patient engagement

INTER-MEDIATE GOAL

4.1 Make sure dedicated time, resources and funding are available to ensure meaningful and sustainable patient engagement

ACTIONS

1) Identify time, personnel and funding resource needs for meaningful and sustainable patient engagement and make sure they are addressed across the process of medicines development where relevant and/or where there is likely to be significant benefit.

2) Use appropriate tools to analyse the organisation's capabilities at a given moment to decide whether further develop organisational capacity (i.e. human, financial, organisational) is needed.

3) Implement a compensation framework for patients (including carers) involved in patient engagement activities according to fair market value standards and compliant with local laws and regulations.

4) Seek alternative funding models and revenue generation through national and cross-border initiatives that can promote the financial independence of patient organisations based on the identified needs.

5) Develop a sustainable socio-economic model that will allow patient organisations to be financially independent.

6) Develop sustainable socio-economic models for companies that would embed social targets (e.g. better health for the population their medication addresses) as well as financial ones

4.2 Make sure all stakeholder organisations have dedicated patient engagement leadership

ACTIONS

1) Identify PE champions/leaders to drive cultural and organisational changes.

2) Implement PE awareness-raising and training programmes to empower new advocates and leaders as well as drive culture change.

Tools & Resources

- Recommendations on the capabilities for patient engagement
- Training & Education
- PARADIGM Code of Conduct
- Legal toolkit
- Financial compensation framework

END GOAL

4. Ensure dedicated leadership and operational time, resources and funding for patient engagement

INTER-MEDIATE GOAL

4.3 Make sure all stakeholder organisations have the required capabilities for patient engagement

ACTIONS

1) Use appropriate tools to self-assess the current capabilities of the organisation.
2) Equip organisations with organisational functions holding core competencies and the set of processes, tools and systems to implement PE.
3) Set relevant internal milestones to monitor and evaluate progress to reach the level for optimal PE.
4) Collect data demonstrating and benchmarking PE value and success in various countries in order to promote patient engagement in countries where it is not well developed.

Tools & Resources

Recommendations on the capabilities for patient engagement

PARADIGM Monitoring & Evaluation Framework

9 Roadmap implementation

This roadmap outlines the strategic path to achieve sustainable PE in the medicines lifecycle by describing specific actions to be implemented across all stakeholder groups and their respective organisations.

As described, sustainable PE is achievable by changes in the culture, processes and resources. This process of change is expected to occur at individual, organisational and systems level, and may happen at a difference pace across geographies and organisations. The roadmap does not propose a linear timeline for actions to unfold, but instead actions can occur at non-linear checkpoints as described elsewhere (Webb 2019). This non-linear approach proposes that in the short term, organisational strategy may be driven by tactics, which are underpinned by available data, evidence and certainty. Moving beyond this to mid- and long-term, organisations need to accept some uncertainty as each organisation continuously reflects on its learnings and recalibrates its strategy and tactics to its new starting point for systems level evolution.

The implementation of the actions described in the roadmap is underpinned by two fundamental mechanisms: 1) the use of integrated PE resources and toolkits that can help all stakeholders to leverage existing experiences and resources and optimize them, i.e. "to not reinvent the wheel"; and 2) knowledge sharing and benchmarking within and between organisations. Individual organisations should not work in isolation, but to encourage culture and process change through awareness raising, education and knowledge sharing of best practices internally and externally with other stakeholder groups. The roadmap encourages stakeholders to make use of existing networking platforms as fora for knowledge and experience exchange, but also as mechanisms to benchmark progress towards the vision. Multi-stakeholder networking platforms such as the PARADIGM Patient Engagement Open Forum are best placed to strengthen collaborations and support the collective evolution of the PE community.

How this roadmap is actually disseminated will influence the rate of its adoption and further implementation. We propose that change could take place based on the Diffusion of Innovation theory[7] that has been adopted in the field of patient engagement by PFMD[8]. According to this theory, change would take place as follows:

1. Identify the "innovators", i.e. the groups that are willing to keep patient engagement alive because it is part of what they do and within the culture within their own organisations. They are the **initial risk takers**.
2. Identify the "early adopters", i.e. people and organisations with some influence that are prepared to **openly support patient engagement and the innovators**. These could be leading patient organisations, industry organisations, regulators, medicines developers, HTA bodies, research funders, etc.
3. By identifying the two groups above, there is an increased likelihood that **the wider majority,** who come into contact with the innovators and early adopters and are exposed to the value of what they do, will join the effort to sustain patient engagement.

[7] Everett M. Rogers, Diffusion of Innovations, 5th edition https://books.google.fr/books?id=9U1K5LjUOwEC&redir_esc=y

[8] Nicholas Brooke, PFMD, 'When Science Meets Patients, or not ' presented at the Patient as Partner conference in January 2019: https://theconferenceforum.org/wp-content/uploads/2019/01/PatientsEU2019_NicholasBrookePLS.pdf

We acknowledge that this theory may have some limitations as it was not originally conceived to explain the adoption of health-related innovations and that it relies on individual adoption, while implementing innovation by organisations is subjected to broader context factors (Greenhalgh 2004).

The roadmap architecture and the assumptions have been built based on the principles of the Theory of Change (see Annex 7), hence proposing a set of actions, the connections between them and the desired long-term change (i.e., end goals and vision). Monitoring progress of actions' implementation is necessary to update the strategy according to the evidence gathered at given checkpoints. Periodic benchmarking could be achieved by a variety of mechanisms such as open dialogues and multi-lateral exchanges of knowledge, ideas and good practices. As mentioned, no single entity is responsible for ensuring implementation and update of the roadmap, therefore collective responsibility and collaborations within and across stakeholder groups and organisations will be crucial to drive the actions forward. The roadmap encourages stakeholders to make the most of existing initiatives and networking platforms for knowledge diffusion and experience exchange, but also as mechanisms to benchmark progress towards the vision. In this context, the PEOF or similar mechanisms, could also play a role in the diffusion of the roadmap.

10 Take home messages

- There is general acknowledgement that PE is crucial in the medicines development process.
- To make PE 'business as usual' requires individual and collective coordinated actions involving all stakeholder group organisations, functions and decision-making bodies.
- Organisations must facilitate reflexive learning within the organisation, modifying its behaviour to reflect new knowledge and insights.
- This roadmap includes key areas for sustainability such as trust-building among all stakeholders involved; knowledge and best practices' exchange and capacity-building; impact evaluation (i.e. 'return on engagement'); and adherence to conduct systematic processes with dedicated funding, time and resources.
- Implementation of the actions is underpinned by the use of integrated PE resources and toolkits to leverage existing experiences and resources and optimize them, and by ongoing knowledge sharing and benchmarking within and between stakeholder organisations.
- This roadmap is intended to be used by stakeholders to assess their current status and what strategies may or should be implemented in their own organisations based on their current state and their objectives towards PE.

Annex 1. Patient engagement landscape: needs and barriers

The contents of this table aim to provide the context to each intermediate goal and reflect the process followed before turning intermediate goals into concrete actions (i.e. what is needed to achieve the goal and what are the barriers that need to be overcome). Information on the barriers was collected during the different interviews, consultation and the CEE workshop. See Annex 7 for details on the methodology.

END GOALS	INTERMEDIATE GOALS	NEEDS	BARRIERS
Establish an ethical, trust-based collaboration among all patient engagement stakeholders involved in medicines development	**Include patients as true partners**	• Increase patients' own credibility and recognition by other stakeholders in order to be seen as equal partners to improve medicines development (or health care in general). This is not the case in certain countries, and may be a particular concern in working with local/national governments. • The patient's voice should be embedded in all applicable organisational structures and in the strategic decision-making process, both at the level of individual organisations and key decision-making points. Patients bring broader perspectives based on their experiences, which may improve the quality of the decisions taken.	• Fragmentation of the patient community (e.g. different diseases and geographic regions, with different needs and interests, and competing for limited funding) reduce the opportunity to build a strong, meaningful and coordinated voice for PE. • Lack of appropriate culture and resources at organisational level. • Lack of understanding in executive leadership about the value of patient engagement. • Absence of knowledge and experience with patient engagement. • In some countries, lack of PE and POs' visibility, and lack of agreed communication channels between patient organisations and other stakeholders. • Long-term efforts and relationships required for optimal PE outcomes might not align with the tight timelines of medicines development, hence risking patient engagement sustainability.
	Identify the right incentives for all stakeholders	• Incentives (understood in this context as non-financial motivators) could act as a driving force to implement PE activities. They should be transparent, recognise contributions to include the patients' perspective and should drive culture change, ultimately demonstrating the shared value that can be achieved by all parties involved.	• Internal or external resistance to develop incentives. • Lack of understanding for the ethical impact of such incentives. • Limited resources.

END GOALS	INTERMEDIATE GOALS	NEEDS	BARRIERS
	Improve the societal perception of the collaboration between patients/POs and relevant stakeholders	• The working collaborations between patients, POs and other stakeholders need to become standard practice. To improve the outward perception of the various collaborations may lead to improved PE opportunities.	• Risk of patients' losing their independence due to professionalization (e.g. becoming consultants), hence leading to conflicts of interest.
Secure inclusive and diverse patient engagement	**Meaningfully involve patients and their representatives**	• PE requires long term ethical collaboration between stakeholders to build trust and to demonstrate that a party is committed to PE and that the process and outcomes generate value to all stakeholders. • Meaningful engagement should be fostered through established processes and mutually agreed objectives between the engaging parties. Where possible those processes and objectives should be reported in the public domain. • Patient needs and perspectives may vary widely within and across diseases, geographic regions, sociodemographic and other characteristics. It is important to develop processes that recognize, honour, and incorporate this diversity of perspectives in its work with patients. • With regards to involving vulnerable groups and patients early in their diagnosis, it is important to raise awareness and to have policies in place on equality and diversity, as well as planning for the necessary resources.	• Preconceptions about the value of the contribution of some patient groups (such as children and young patients and people living with dementia) in PE activities and the challenges of involving them. • PO can have competing priorities as to where patient input is focused. • In some CEE countries there may be a perception of a lack of value of any contribution of patients or patient organisations. • Lack of patient engagement skills and limited knowledge on how to meaningfully involve patients in existing processes and on how to identify the right patients for the required activity. • Practices and processes not adapted to patients' needs • Lack of patient involvement at the early stages of a process/project all impact this. • Disease burden may impact the continuity of patient representatives' involvement and result in loss of knowledge and expertise.
	Involve local/regional/national bodies from all stakeholder groups to act as drivers for change	• The 'bottom-up' approach of PE through cooperation to share approaches and best practices should also become widespread across geographies ensure that strategies are considered in a broader context and to achieve comparable health outcomes. This should occur at a similar pace as other global initiatives.	• Language, cultural and political aspects of each country/region may make the adoption of PE practices difficult (e.g. disease-related stigma may be more relevant in some countries than others). • PE practices may be designed with a pan-European approach (e.g. engagement at EMA, EUnetHTA, in global clinical development programmes, etc.). • Some EU guidelines and frameworks might not be transferable to other regions (e.g. CEE). • Building and maintaining physical and virtual platforms for discussion and exchange between organisations is very challenging in some countries due competing strategies of

END GOALS	INTERMEDIATE GOALS		NEEDS	BARRIERS
				organisations, a lack of funding and infrastructure, and a lack of continuity of human resources to support it.
Embed patient engagement in the mind-set and at every step and across organisations	**Recognize patient engagement as valuable and visible to all stakeholders**	**T1: Measurable patient insights are valuable evidence**	• Evidence-based patient insights increase the credibility of PE when they are considered scientifically robust and therefore suitable to be included in the overall set of data collected during the development of a medicine.	• Lack of knowledge on how to apply methodologies to capture and use patients' insights.
		T2: To grow a community/critical mass convinced of the value of PE	• A critical mass of individuals convinced that patient engagement has value and acting as role-models, may help moving others towards acceptance and commitment.	• Potential resistance to change; lack of understanding of why including PE is needed and adds value.
		T3: To achieve and demonstrate better health outcomes through PE	• The ultimate objective of meaningful patient engagement is to contribute to develop medicines that address patient needs and thus enable better health outcomes for patients. Demonstrating a connection between patient engagement and health outcomes is an aspirational goal that may be very hard to prove.	• Existing evidence to prove that PE leads to better health outcomes is still immature.
		T4: Sustainability of patient engagement is a key policy issue	• Sustainability of PE resides in each institution's agenda, mission and policies. This recognition implies the establishment of a systematic process of patient engagement, whose insertion into the policy is defined by the stakeholder organisation. • Stakeholder organisations need to recognise both the value of PE and a harmonised input of the patient voice into the development of policy to secure the systematic, meaningful and effective patient engagement.	• Lack of accountability mechanism of patient engagement and of defined policies and practices. • Insufficient resources (both financial and human). • Conflicts between approaches and sustainable actions. • Lack of harmonised patient input in key policy development areas due to competing priorities between patient organisations. • Lack of harmonised input of PO into policy development within decision making organisations due to insufficient resources. • Opportunities for patients to provide input into policy development are not always made sufficiently accessible or widely distributed.
		T1: Patient engagement should follow a structured systematic approach	• Relevant stakeholders should embed PE into their long-term strategic plans and establish processes within their own organisations adapted to the organisational structure to ensure that PE is integral to all activities.	• Lack of knowledge on how to do PE. • Insufficient data to demonstrate value and impact of patient engagement for all stakeholders and that

END GOALS	INTERMEDIATE GOALS		NEEDS	BARRIERS
	Embed patient engagement across the medicine's life-cycle, integrated into processes and across functions			ultimately it may not be perceived as a priority need to be addressed. • Lack of information about the existing resources and lack of organisational capacity may prevent from incorporating good practices.
		T2: Integrate patient engagement into relevant procedures of regulators, HTA bodies and payers		• Lack of alignment across agencies on how to define and integrate a patient engagement framework that is applicable to the local population needs and policies. In some settings, very limited interaction occurs between HTA bodies and patients. • Resource constraints and understanding where and how patients can add most value to their processes and an understanding of the boundaries required in the patient engagement ecosystem.
		T3: Target patient engagement in areas/decision-making points where it would be most relevant and add most value for all stakeholders	• Relevant stakeholders should identify the essential areas (disease specific or decision points along the medicines life-cycle continuum) where there is a need to concentrate actions and refine the focus of PE.	
	Have a common framework for patient engagement		• Public health authorities/supra-national bodies are important to help establish clear priorities for PE as part of a broader public health strategy following a top-down approach. • Harmonised methodologies are needed to help capture patients' insights in a systematic way that is accepted to be used for regulatory (and HTA and payers) decision-making.	• Lack of time, resources and lack of knowledge about participatory mechanisms. • Overall lack of expertise in developing specific guidelines on this topic.
Ensure dedicated leadership and operational time, resources and funding	**Make sure dedicated time, resources and funding are available to ensure meaningful and sustainable patient engagement**		• Given the increased and systematic activities proposed in the roadmap, conducting optimal patient engagement is unlikely to be achieved at current resource levels, even where efficiencies in current resource use are introduced: human and financial resources will most probably need to be increased.	• Constraints in human and financial resources limit PE to become widespread. • On the regulators side, areas where the patients' voice adds more value are being prioritised versus including the patients' voice in all activities.

END GOALS	INTERMEDIATE GOALS	NEEDS	BARRIERS
		• Different financial models that support patient engagement activities and patient organisations may be needed to better ensure the longer-term continuity and sustainability of strategies, actions, patient organisations and patient engagement activities.	• On the patients' side, lack of financial resources to cover the expenses incurred may limit or preclude patient involvement. • This is particularly notable across many CEE countries where there is little or no government/health ministry funding and it often comes from industry and/or NGO related funding which in both cases tends to be project based rather than programme based. Hence the ability of POs to be financially independent is limited. • The lack of continuity of patient representatives (due to disease burden or low patient numbers, such as in rare or complex diseases) results in loss of knowledge and expertise and limit the availability human resources to carry out PE in these diseases.
	Make sure all stakeholder organisations have dedicated patient engagement leadership		• Lack of an organisational culture supportive of patient engagement among upper management. Lack of funding to support development of new patient advocates and leaders for long term activism.
	Make sure all stakeholder organisations have the required capabilities for patient engagement	• Increased knowledge/skills on how to do PE across all stakeholder groups: ○ Patients: more health literacy to understand technical discussions and decisions taken along the medicines' development process. PE practices and processes should be adapted to patients' needs. ○ Industry: standardised tools and guidelines. ○ Regulators: lack of understanding on how to meaningfully involve patients and report back on outcomes. Better communication on the role of regulators in medicines development and how the general public can play a role.	

Back to roadmap

Annex 2. Stakeholder groups involved in patient engagement in the medicine life-cycle

Medicines developers
For the purpose of this document we will use the term medicines developers, which includes any organisation involved in the research, development, manufacture, marketing and/or distribution of medicinal products[9] and/or any other health products such as medical devices or digital solutions. Clinical/contract research organisations (CROs) or consultancy companies providing advice or services relating to the above activities, fall under the definition of medicines developers. Research organisations including universities and learned societies (i.e. an organisation that exists to promote an academic discipline, profession) are also included in the definition of medicines developers.

Health Technology Assessment (HTA) body
A body that undertakes or commissions health technology assessment to form recommendations or advice for healthcare funders and decision-makers on the use of health technologies (i.e. an intervention developed to prevent, diagnose or treat medical conditions; promote health; provide rehabilitation; or organize healthcare delivery. The intervention can be a test, device, medicine, vaccine, procedure, programme or system)[10].

Health technology assessment is a multidisciplinary process that uses explicit methods to determine the value of a health technology at different points in its lifecycle. The purpose is to inform decision-making in order to promote an equitable, efficient, and high-quality health system[11].

Regulatory authorities (or regulators)
A public organisation that is responsible for "...the scientific evaluation and safety monitoring of medicines..." (EMA, 2017). A national competent authority (NCA) has the power to grant marketing authorisations for medicinal products in its territory[12].

Competent authorities on pricing and reimbursement of medicines
Also known as 'payers', they are responsible for approving the reimbursement of medicinal products. The process of pricing and reimbursement is subject to local laws and regulations.

Policymakers
Individuals and institutions responsible for or involved in formulating policies.

Public research funders
For the purpose of this roadmap, we define the institutions that mainly fund health research.

Academia
The environment or community concerned with the pursuit of research, education and science.

Patient community[13]
Patients, patient representatives including their family and carers, patient advocates and patient organisations:

- **Individual patients**: Persons with personal experience of living with a disease. They may or may not have technical knowledge in research and development or regulatory processes, but their main role is to contribute with their subjective disease and treatment experience.
- **Carers:** Persons supporting individual patients such as family members as well as paid or volunteer helpers.

[9] Adapted from the definition of pharmaceutical company by the European Medicines Agency (EMA). See EMA policy on handling competing interests (Policy 44).

[10] Health Technology Assessment international (HTAi) glossary (http://htaglossary.net/health+technology). Last accessed 26 Jun 2020

[11] O'Rourke, B., Oortwijn, W., & Schuller, T. (2020). The new definition of health technology assessment: A milestone in international collaboration. International Journal of Technology Assessment in Health Care, 1-4. doi:10.1017/S0266462320000215

[12] Definition according to EUPATI glossary

[13] According to the EUPATI guidance on patient involvement in medicines research and development

- **Patient Advocates:** Persons who have the insight and experience in supporting a larger population of patients living with a disease. They may or may not be affiliated with an organisation (EUPATI guidance).
- **Patient Organisations (POs**): not-for-profit legal organisation (including the umbrella organisation to which it belongs), mainly composed of patients and/or carers, that represents the needs and interests of patients and/or carers and/or supports the development of adequate answers to them.
- **Patient Organisation Representatives:** Persons who are mandated to represent and express the collective views of a patient organisation on a specific issue or disease area. These individuals may or may not be patients or carers themselves.
- **Patient Experts**: In addition to disease-specific expertise, they have the technical knowledge in R&D and/or regulatory affairs through training or experience, for example EUPATI Fellows who have been trained by EUPATI on the full spectrum of medicine's R&D.

Vulnerable populations

They include children and young patients, people living with dementia and underrepresented groups (e.g. migrant and non-settled populations, substance users, incarcerated people, people with mental health disorders other than dementia). In this document we define vulnerable populations broadly, however PARADIGM has specifically focused on young people, and people with dementia and their carers.

Back to roadmap

Annex 3. Patient engagement resources relevant for sustainability

This list includes organisations, platforms and tools.

TABLE 1. CONSORTIA, HARMONISATION BODIES, SUPRA-NATIONAL BODIES AND NETWORKING PLATFORMS	
Public-private consortia	Patient-Focused Medicines Development (PFMD)
	European Patients' Academy (EUPATI)
	National Health Council (NHC)
	Clinical Trials Transformation Initiative
Harmonisation bodies	The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH)
	Council for International Organizations of Medical Sciences (CIOMS)
Supra-national bodies	World Health Organisation (WHO)
Regulatory science platforms	Heads of Medicines Agencies (HMA) network
	International Coalition of Medicines Regulatory Authorities (ICMRA)
Health Technology Assessment and medicines pricing and reimbursement networks	European network for Health Technology Assessment (EUnetHTA)
	Health Technology Assessment international (HTAi)
	Medicine Evaluation Committee (MEDEV)
(Multi-stakeholder) networking platforms	Patient Engagement Open Forum (PEOF)
	The European Federation of Pharmaceutical Industries and Associations (EFPIA) Annual Conference
	European Medicines Agency Patients' and Consumers Working Party
	European Federation of Pharmaceutical Industries and Associations (EFPIA) Patient Think Tank
	European Patients Forum (EPF) Congress on Patient Involvement
	European Conference on Rare Diseases (ECRD)
	Health Technology Assessment International (HTAi) Annual Meeting
	Drug Information Association (DIA)
	Biotechnology Innovation Organization
	International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Patient Representative Roundtable
	ISPOR conferences
	PFMD Synapse for patient engagement

Back to roadmap

TABLE 2. PATIENT ENGAGEMENT INTEGRATED RESOURCES AND TOOLS		
Patient engagement integrated resources	**PARADIGM TOOLBOX**	Monitoring and evaluation (M&E) framework Recommendations on the required capabilities for patient engagement PARADIGM Patient engagement code of conduct Guidance on managing competing interests and related tools Guidance on reporting and disseminating patient engagement Recommendations on How to find the right match for the right patient engagement activity Community Advisory Boards (CABs) Enhancement of the EUPATI guidance Legal Toolkit Tools for HTA bodies to facilitate patient involvement in Early Dialogues
	Patient-Focused Medicines Development (PFMD) PATIENT ENGAGEMENT SUITE	Patient Engagement Quality Guidance PFMD Book of Good Practices Synapse for patient engagement Legal Guiding Principles and reference contracts How to modules Fair market value calculator
	Transcelerate	Patient engagement toolkit
	Clinical trials transformation initiative (CTTI)	Recommendations and Tools for effective engagement with patient groups around clinical trials
	Patient-Centered Outcomes Research Institute (PCORI)	Engagement Rubric
	National Health Council (NHC)	Patient engagement recommendations and tools
Patient engagement resources on financial compensation	**NHC**	Fair Market Value Calculator
	INVOLVE	Involvement Cost Calculator
	Myeloma Patients Europe/Workgroup of European Cancer Patient Advocacy Networks (WECAN)/PFMD	Guiding principles on reasonable agreements between patient advocates and pharmaceutical companies. See chapter on Financial compensation and reimbursement of expenses.
	EFPIA	EFPIA Code of Practice, with specific chapter on the disclosure of support and services provided to patient organisations. See also Working together with patient groups, document that complements EFPIA Code of Practice, developed by the EFPIA Patient Think Tank, Sep 2017.
	ABPI	Association of British Pharmaceutical Industry (ABPI) Code of Practice for the Pharmaceutical Industry, 2019. Clause 27 Relationships with patient organisations

Training and education resources	**Training resources for the patient community**	European Patients' Academy (EUPATI) ● Patient Expert Training Course ● Toolbox on medicines R&D ● Guidances on Patient Involvement in: ○ Pharmaceutical industry-led medicines R&D ○ Ethics committees ○ Regulatory processes ○ Health technology assessments (HTA) ● Webinars on patient engagement
		EURORDIS Open Academy ● EURORDIS Summer School on Medicines Research and Development ● EURORDIS Winter School on Scientific Innovation and Translational Research ● EURORDIS Leadership school on Healthcare and Research
		European Patients Forum (EPF) capacity-building programme ● Core Capacity Building Programme activities ● Thematic Capacity Building Programme activities ● Summer Training Course for Young Patients Advocates - Leadership Programme
	Training resources for all stakeholders	PFMD Patient Engagement Training
		EUPATI Fundamentals – Training for Professionals in patient engagement
		International Children's Advisory Network Educational materials

Back to roadmap

Annex 4. Assumptions

(Nov 2019-Jan2020). Assumptions are made on both implicit knowledge that we can realistically expect, and explicit knowledge based on evidence generated/gathered during previous phases of the project.

Category of each phase of roadmap	Assumptions
Vision	• That making PE in medicines development sustainable, i.e. 'business as usual' is fundamentally achievable. • That all stakeholders do not currently share this vision. • That this vision is unlikely to radically change due to internal inertia or external influence. • That this vision may not be applicable/achievable in all countries/jurisdictions. • The vision may be achieved at different times by different stakeholders due to different remits/processes/influences.
Landscape	• Landscape mapping of scenarios performed in earlier stages of the project may be understood as a current thinking regarding the sustainability of PE. • Both the market approach and the top down approach[14] will/may both have short and long term elements. • There are various influencers (stakeholders) and influences (social, political, economic, and technical) of the market approach and the top down approach that are both mutually inclusive and mutually exclusive of each other. • Evidence of PE (as part of a submission dossier for marketing authorisation of a medicinal product) is not currently mandated in the EU by a single entity.
End goals	• Vision can be achieved through defined changes in culture, processes and resources related to intermediate goals and actions that are relevant for each stakeholder. • The roadmap is implementable by everyone and everyone is responsible. No single entity will be responsible for implementing the roadmap or updating it. • A top down approach may become a reality in the future and will have/require influencers to implement this. • The mechanisms of implementing or mandating any top down approach are multi-faceted (social, political, economic, and technical) and multi-dimensional (time, resources).
Intermediate goals	• Intermediate goals need to be appropriate to each stakeholder group addressing changes in culture, processes and resources. • Intermediate goal timeframes may be different for each goal and for each stakeholder. • The mechanisms to achieve intermediate goals may be different from long term goals.
Actions that enable intermediate and end goals	• Actions need to be appropriate for each stakeholder group. • Actions need to be modifiable to account for differences in organisational remit, size, resources (and country).
Benchmarking	• Periodic benchmarking of the vision could be achieved by a variety of mechanisms. • Periodic benchmarking (of progress in) is currently done by each stakeholder, but by different mechanisms.

Back to roadmap architecture

[14] These concepts have been previously described in PARADIGM Deliverables D6.2 List of the relevant models addressing sustainability for all stakeholders and D6.3 Refined list of the relevant models addressing sustainability for all stakeholders

Annex 5: Limitations of the roadmap

The roadmap is intended to be aspirational and envisions that PE in medicines development is sustainable, i.e. 'business as usual' is fundamentally achievable. It assumes that this vision is unlikely to radically change due to internal inertia or external influence. It also assumes that sustaining PE would require a strong signal making PE almost mandatory in medicines development, combined with a diverse and broad offering of services developed by a multitude of organisations. Both approaches may be synergistic, with short and long term elements.

- **Limitations in driving the necessary cultural changes**

There is currently a lack of a shared culture that would ensure sustainable PE in medicines development. All stakeholders do not currently agree on the need for a top-down signal combined with a PE market approach. This is illustrated by the fact that the EU does not currently require evidence of PE as part of a submission dossier nor does it provide any methodological guidelines on how to incorporate patient perspectives.

- **Limitations relative to ensuring the necessary financial and other resources**

The roadmap is intended to be implementable by everyone: no single entity will be responsible for implementing or updating the roadmap. Loose collaborations will play a role in taking the strategy forward. However, in ensuring adequate financial and other resources to deliver the roadmap, there will need to be influencers supporting the process. And it will be important to ensure that human resources like influencers and leading patient representatives do not become institutionalized and isolated/removed from their bases.

- **Limitations in bringing stakeholders together to build trust**

Building trust will be challenging across the broad and diverse sweep of Western, Central and Eastern Europe (including Central Asia). As a result, there will need to be adjustments in the roadmap depending on differing and even at times competing remits, processes or other influences. It will be important to acknowledge and resolve conflicts of interest among stakeholders. In addition, periodic benchmarking is currently done separately by each stakeholder, using different mechanisms; to arrive at realistic and shared benchmarks for the roadmap across Europe will not be easy.

- **Limitations in testing the roadmap**

The roadmap is relevant and implementable at the end of the PARADIGM project thus has had no 'stress testing' with any entity or stakeholder to identify possible weaknesses or road blocks to the implementation of it as a whole. It is acknowledged that 'soft power' is relied upon to implement the roadmap and thus some elements may not be practical or feasible to implement by one or more stakeholders at any given step. Additional assumptions that underpin the current PE landscape and desired future are both implicit and explicit (i.e. push or pull factors, flex points and 'benchmarking') - both have a degree of uncertainty and limited accuracy. As those assumptions also influenced the development of the roadmap, may be biased and may no longer be relevant in the mid-to long-term, thus limiting the implementation and future validity of the roadmap.

Annex 6: Actions undertaken by global harmonisation and international regulatory bodies towards providing guidance on methodologies to capture patients' insights

International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH)

ICH has started the process of drafting a new version of this guideline: ICH E8 General Considerations for Clinical Trials. Following stakeholder feedback gathered during the consultation process, ICH will commit to include external stakeholders who are not included in the ICH processes[15]. The new draft also includes general considerations on patient input into study design: *"… Involving patients at the early stage of study design is likely to increase trust in the study, facilitate recruitment, and promote adherence, which should continue throughout the duration of the study. Patients also provide their perspective of living with a condition, which contributes to the determination of endpoints that are meaningful to patients, selection of the right population, duration of the study, and use of ICH E8(R1) draft Guideline the right comparators. This ultimately supports the development of medicines that are better tailored to patients' needs…."*.

ICH E8 is connected to ICH E6 Guideline for Good Clinical Practice, which is also being updated (see Reflection on GCP renovation) which will describe in more depth all the aspects of the design and conduct of a clinical trial. Stakeholder outreach approaches are being considered by ICH.

ICH is also adapting to a new governance structure that will be open to international organisations (e.g. POs) to join ICH as observers, hence facilitating the incorporation of external stakeholders' views into the guidelines.

Currently, the European regulation on clinical trials only requires a description of the involvement when patients are involved in the design of a clinical trial [16].

Council for International Organizations of Medical Sciences (CIOMS)

The Council for International Organizations of Medical Sciences (CIOMS) serves as a platform of discussion for the World Health Organisation (WHO), health authorities, academic organizations, pharmaceutical industry and other concerned stakeholders (e.g. POs). CIOMS guidelines have served as a basis for ICH guidelines in the past and CIOMS is also an ICH observer since 2016[17]. CIOMS working group XI on Patient Involvement in Development and Safe Use of Medicines was created in 2018 with an ambition to cover the whole product life-cycle. WG XI is now drafting the content of a future guidance on patient involvement. "Patient participation in the generation and utilization of safety and effectiveness data" will be one of the areas covered in this guidance.

European Medicines Agency (EMA)

The analysis of EMA Regulatory Science to 2025 (strategic reflection) consultation on the area "Implications for patients and healthcare professionals" revealed one key recommendation: "Reinforce patient relevance in evidence generation"[18]. EMA concluded that it will:

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[15] "Renovation of ICH guidelines. What is changing and how is EMA contributing?" presented at EMA's Patients and Consumers' Working Party and Health care Professionals Working Party (PCWP/HCP) Joint meeting. March 3rd 2020

[16] Reg 536/2014 on clinical trials on medicinal products for human use. Recital 18 and Annex I D (Protocol), article 17 (e), which makes a reference to patient engagement.

[17] Global guidance on patient involvement, Rago Lembit, presented at the PCWP/HCP Joint meeting. March 3rd 2020

[18] EMA recommendations from the Regulatory Strategy 2025: implications for patients and healthcare professionals. Tony Humphries. presented at EMA's Patients and Consumers' Working Party and Health care Professionals Working Party (PCWP/HCP) Joint meeting. March 3rd 2020

- Revise the existing PE methodology and review and update EMA's existing 'Framework for interaction with patients and POs' to reflect EMA's evolving approach to patient data and enhanced patient involvement in EMA scientific committees.
- Explore and deploy additional methodologies to collect and use patient data for benefit-risk assessment.
- Update existing, and develop new EMA guidelines on patient data collection.
- Coordinate the approach to patient reported outcomes (PROs).
- Promote use of core health-related quality-of-life PROs.

Another key recommendation was "Expand risk-benefit assessment and communication". The EMA will include patient preferences to inform the benefit-risk assessment building on the work of the IMI-PREFER project. The Patient Preferences in Benefit-Risk Assessments during the Drug Life Cycle (PREFER) project of the Innovative Medicines Initiative IMI2 aims *"to strengthen patient-centric decision-making throughout the life cycle of medicinal treatments by developing expert and evidence-based recommendations on how patient preferences should be assessed and inform decision-making"*[19].

United States Food and Drug Administration (FDA)

The FDA is developing four patient-focused drug development (PFDD) guidance to facilitate the use of systematic approaches with regards to the collection and use of robust patient input to better inform product development and decision-making[20].

- Guidance 1 (Final): Collecting comprehensive and representative input
- Guidance 2 (Draft): Methods to identify what is important to patients
- Guidance 3: Selecting, developing or modifying fit-for-purpose clinical outcome assessments (under development)
- Guidance 4: Incorporating clinical outcome assessments into endpoints for regulatory decision making (under development).

[19] de Bekker-Grob EW, Berlin C, Levitan B, Raza K, Christoforidi K, Cleemput I, et al. Giving Patients' Preferences a Voice in Medical Treatment Life Cycle: The PREFER Public-Private Project. The patient. 2017;10(3):263-6.

[20] FDA Patient-Focused Drug Development Guidance Series.

Annex 7. Detailed methodology

Data gathering

i. Interviews with supra-national bodies

In a previous phase of the project, consulted stakeholders expressed a preference towards an institutionalized approach in which PE is driven by a strong signal from (regulatory) authorities and where processes and frameworks supportive of PE could be harmonised by a global authoritative consortium [21]. The interviews conducted comprised the following organisations:

- The EU regulatory agency, i.e. EMA
- National regulatory agencies, i.e. MHRA and AIFA
- A Global harmonisation body, i.e. ICH
- Others: International Council of Medical Regulatory Agencies (ICMRA)

All these initiatives/organisations were selected due their role of influencing PE uptake by other stakeholders (top-down approach) at an international scale. National regulatory agencies such as MHRA and AIFA were chosen as relevant examples of current efforts towards systematizing PE at national level, especially regarding the safe use of medicines. A discussion guide was co-created by a dedicated working group that aimed to capture the elements relevant to the roadmap architecture (see Annex 8).

ii. Stakeholder group internal consultations

Consulted stakeholder groups included EFPIA PARADIGM partners and patients identified by the POs partners of PARADIGM (EURORDIS, EPF, EATG and Alzheimer Europe). Data gathering methods included a survey followed by a dedicated webinar or face-to-face meeting in order to capture the elements relevant to the roadmap architecture.

Regulators views are covered in the institutional interviews and HTA bodies views were gathered through different workshops conducted during PARADIGM lifetime and reviewed by representatives of HTA bodies members of the working group.

iii. Central and Eastern Europe (CEE) workshop

In order to improve the applicability and likelihood that the roadmap is actionable and implementable across the EU, a workshop was held on May 12th 2020. 47 representatives were involved from various stakeholders (patients/PO, pharmaceutical industry, HTA bodies and NGO's), from across the CEE region (including Bulgaria, Croatia, Czech Republic, Poland, Romania and Hungary). Non-EU participants from Serbia, Latvia, Ukraine, also registered. The roadmap was 'stress tested' broadly focusing on the intermediate goals and activities. Participants selected intermediate goals that they considered most critical and refined them using SMART criteria (Specific Measurable Achievable Relevant Time-Bound) to make them more specific and relevant to the CEE region.

Analysis

Based on the interviews and consultations, a total of 68 end goals were identified. A set of aspirational goals that could be embraced by all stakeholders was identified and grouped under the 4 main chapters of this roadmap. We also identified other more concrete stakeholder-specific goals that could potentially work as intermediate goals. These intermediate goals were further refined using the SMART criteria. THE SMART test also led to the identification of a series of actions and to a reflection on the needs around each intermediate goal. These are described in Annex 1. The actions were mapped onto the activities and responsibilities reported by stakeholders in the interviews/consultations. Positive experiences and barriers to PE that shape the current landscape were also collected during the interviews, consultations and the CEE workshop. Positive experiences are described in section 7.1 and barriers are described in the Annex 1.

[21] PARADIGM D6.3 Refined list of the relevant models addressing sustainability for all stakeholders

The process to draft the roadmap followed these steps: 1) one workshop to select of the roadmap model (below), 2) data collection, 3) analysis of the data gathered, 4) two online webinars to apply the SMART test and to agree on the vision and mission, 5) writing of the first draft, 6) review by work package 6 (WP6) partners, 7) feedback from WP6 partners and CEE workshop incorporated in second draft and 8) consultation with the PARADIGM consortium and PILG.

Vision statement

The original vision statement (see below) was reanalysed upon discussion with partners.

Original vision statement:

> *To have a common framework that enables structured, effective, meaningful, ethical, innovative, and sustainable patient engagement and demonstrates the 'return on engagement' for all players*

The sentence was analysed from a syntactic and semantic point of view. 'To have a common framework' was the subject of the statement, but it was not the true subject of PARADIGM aspirations. In our vision, the patient was an equal partner in medicines development activities. Therefore, having a common framework was a means to our end, but not the end itself. Then we went back to the original sentence and transformed 'patient engagement' into the subject, and added some specificities to it: patient engagement in medicines development (not in other areas). We reduced the number of adjectives present in the first statement to those who can embrace them all: meaningful (ethical) and sustainable (structured, effective, innovative, demonstrates the return). Once we had a simpler and more straightforward sentence, it became obvious to us that there was a further reason for us to do all this, to get 'better health outcomes'.

This is the new vision statement, result of this review:

> *Meaningful and sustainable patient engagement in medicines development for better health outcomes*

However, we have kept the previous statement as our mission, and added its previous subject 'a common framework' as an inspiration goal that would help us to reach our vision.

Selection of roadmap model

Literature search

During the creation of the sustainability roadmap itself, the architypes of roadmaps, building a roadmap, and the underpinning common theories for strategy and roadmap creation were explored through a non-systematic review of published and grey literature. Key search words and phrases were; "sustainability roadmap", "strategic roadmap", "roadmap" "strategic thinking", "uncertainty", within the contexts of; business, science research, health, environmental sciences, sustainable enterprises, tools/toolkits to build a roadmap.

A total of 22 published papers and articles, and further grey literature and websites were reviewed that included:

- UK's Accelerated Access Review (AAR) – government response to implementation (HealthDo 2017).
- ABPI medicines optimisation (ABPI 2016).
- Government of Canada SME suitability roadmap (CanadaGo 2012).
- Consultancy websites (various including those that contained roadmaps or tools to create them. For example Cundall Sustainability roadmap).
- HMA-EMA Joint Big Data Taskforce – summary report (HMA-EMA 2019).

Definitions of scenarios and roadmaps

Scenario planning (sometimes called "**scenario** and contingency **planning**") is a structured way for organisations to think about the future. A group of executives sets out to develop a small number of **scenarios**—stories about how the future might unfold and how this might affect an issue that confronts them (Economist 2008).

Roadmap

The aim of a roadmap is to map out the desired future (not to predict it) – a tool for collaborative strategic planning, that enables us to make strategies and to take actions towards a desired future (Hasse 2016).

Background, context and theories of roadmaps and change

Scenario planning is generally part of strategic planning (macro level) – to highlight implications of possible futures and prepare for their changes. While road mapping falls in the domain of operational business (micro level) of how to get from the current state the future desired state. It also investigates which resources and expertise are required, which uncertainties and risks exist (assumptions), accounts for responsibilities in implementation of goals or activities (Strauss 2004, Hasse 2016), and some flex points to account for changing conditions (internal or external) and uncertainty and checkpoints based on indicators or anticipated events where strategic decisions can be made or progress and assumptions can be reviewed. These checkpoints can be linear or non-linear categories or 'cones' (tactics (tools/outputs), and strategy (scenario mapping), vision (all stakeholders) and system evolution (everything/everyone)) based on decreasing levels of available data and evidence and increasing levels of uncertainty as one extrapolates out to a desired future state (Webb 2019).

The architecture and purpose of a roadmap can be diverse; from product planning the strategic planning, knowledge asset planning and integration planning (Phaal 2004) from automotive, environmental, urban planning, education, and public health (Ibrahim 2018, Ahmed 2012). They can be simple, single layer and linear, complex and dynamic mapping multiple layers and interdependencies, be an informational structure (i.e. time based), graphical structure (i.e. systems based), or metaphorical (i.e. literally a map), written modular, or a combination of graphical and written interpretation (Phaal, Cambridge Roadmaping).

A generic roadmap form can comprise of a 3x3 matrix defined by six broad questions (Phaal, Cambridge Roadmaping):

- Where do we want to go?
- Where are we now?
- How can we get there?
- Why do we need to act?
- What should we do?
- How can we do it?

Roadmaps are also considered a knowledge capture and communication tool (McMillan 2003) and a learning and knowledge creation process by those creating the roadmap (Kamtsiou 2006). Strategic planning (and its implementation) has strong links with Theory of Change (ToC) model (Ibrahim 2018, Anderson 2004, Innes 2015, Vogel 2012). It can be used to focus the theoretical underpinning of a project (a set of assumptions that are used to explain min-activities that leads to a long term change the connections between those activities and the desired outcomes of a programme or initiative) and help realize why a given intervention will lead to a specific change taking into consideration the context in which that change will take place (Ibrahim 2018).

These consist of five elements that should be addressed (Allen 2016, Vogel 2012):

i. Context of the initiative: analysis of current environment or landscape and actors who may influence the change.
ii. Long term change: identify overall vision and desired long term change and its expected benefits.
iii. Broad sequence of events; activities that may lead to long term goal or change in given context.

iv. Assumptions: assumptions about how change events/activities might happen and whether these activities and resulting outputs are appropriate for influencing the desired change in given context.
v. Change diagram and narrative summary: enveloping visual of change and descriptive summary.

Fundamental questions of a roadmap

- Who is this roadmap for?
- How is it envisioned to be used?
- By whom (who implements this)?
- How long is it valid for?
- When should it be updated?
- By whom (who implements this) and by what method?
- How is progress going to be measured and by whom?

Architecture

- Vision phase (where to get to)
- Landscape phase (where are we now) and context
- End goal (long term outcomes)
- Sub goals (short and intermediate goals that address end goals)
- Activities to achieve goals (and how to adapt to change)
- Benchmarking/checkpoints (and how to measure that)
- Boundaries (time, phases, resources, decreasing uncertainty)
- Diagram (roadmap)
- Narrative summary of roadmap (who, what, when, how)

Table 1 Additional elements and validation to consider during the creation of the sustainability roadmap

Basic additional elements to consider	Elements to include from previous phases of the project[22]	Testing and validation
• Flexibility/adaptability of approach (inherent robustness) • Internal factors (stakeholders, market approach) • External factors PUSH PULL (changing environment) • Assumptions (that drive vision, goals and outputs and activities and PUSH PULL factors) • Uncertainty (current, future and acceptable) • Evidence (current, future and how to generate it) • Transparency	• PARADIGM assets (tools, frameworks, etc.) • PE market approach (short term) • Flexibility to accept/adapt to 'top down' approach (long term) • Other assets (integrating into existing platforms) • Implementation of sustainability strategy – who, what, how, when? • Goals and actions to be underpinned by the pillars of culture, processes and resources (D6.1 and D6.2)	• Stress test draft roadmap (against market approach model) -Not possible • Validation of draft roadmap -Through repeated consultation -Perform P.E.S.T or S.W.O.T. analysis on draft roadmap (Strengths, Weaknesses, Opportunities, Threats) (Political, Economical, Sociological, and Technology influences)

Back to PE landscape

[22] PARADIGM Deliverables D6.1 Assessment review of existing sustainability models, D6.2 List of the relevant models addressing sustainability for all stakeholders and D6.3 Refined list of the relevant models addressing sustainability for all stakeholders

Annex 8: Discussion guide

T6.5. SUSTAINABILITY ROADMAP
DISCUSSION GUIDE

Objective of the discussion guide
To guide each organization´s interview in order to capture the ambitions and aspirations of key stakeholders, look for potential areas of overlap, synergies and alignments and to get a variety of insights in relation to Patient Engagement (PE) in medicines development. Feedback gathered during the interviews will be used to inform the elaboration of the PARADIGM PE Sustainability Roadmap.

Background for Interviewers

What is PARADIGM?
Patients Active in Research and Dialogues for an Improved Generation of Medicines (PARADIGM) is an EU project funded by the Innovative Medicines Initiative (IMI) and the European Federation of Pharmaceutical Industries and Associations (EFPIA). Its mission is to participate in the co-creation of sustainable, systematic, meaningful and ethical patient engagement (PE) within the medicines R&D process.

What is a sustainability roadmap?
A sustainability roadmap is a vision and a strategic plan for ensuring initiatives succeed now and over the long-term. Its scope may include the organisation, environment, society, government, industry, group and individual.

Why do we need a sustainability roadmap?
For PE to be truly sustainable the vision of the PARADIGM consortium needs to be implementable by all stakeholders, through tangible and actionable goals, activities and responsibilities.

Why are we reaching out to the regulatory agencies and the global consortia? What are we looking for?
We want to go "behind the scenes" and understand the current PE status of each of the interviewed organisations and to learn more about the limits and barriers that prevent PE becoming a common practice and to explore what could be the turning point.

We also want to explore the objectives, plans and activities around PE that these organisations have now or in their pipeline, given their role to influence the PE environment and contribute to PE sustainability through a strong mandate.

In which ways should information be collected and the interviews be conducted?
- Desk research and summary of what we currently know (to understand the organization context and prepare the discussion).
- Discussion with one or more members of the different regulatory and harmonization initiatives who can explain their vision, efforts, approach and aspirations towards PE.
- In order to properly frame these conversations, it would be useful to keep in mind that we aim to get an informal unfiltered opinion on what would be feasible. For this the data collected should not be attributed to any individual

THE INTERVIEW SETUP
- The discussion guide/topics for discussion can be shared beforehand with the interviewee to better prepare the discussion.
- **Please carefully do the desk research related to each organization before carrying out the interview, including any guidance or links included on it, to make sure interviewers are well prepared and able to discuss with solvency.**
- Use of results, confidentiality, approvals, anonymization:
  - The interviewee will be asked if it is okay to share the content of the interview 'within the PARADIGM consortium'.
  - The results will be identified at the level of stakeholder or organisation only. No individual names will be used or attributed.
  - If the interviewee agrees the interviewer can also ask permission if the interview can be recorded to facilitate transcription and summary writing. Regardless, the interviewer will offer to send the interview report to the interviewee for validation before circulation.
- Interviewers can follow up with further questions as needed.

Interview questions are provided below. They broadly cover the **3 pillars for PE sustainability** of **Culture, Process** and **Resources (see figure below). Please keep these 3 key pillars in mind during the whole interview.** Interviewers are free to go into more or less detail and using or not all the proposed questions, depending on the organization and the evolution of the dialogue.

THE INTERVIEW – Process and Information for Interviewers

- Approximate duration: 40-60 minutes
- Interviewer introduction and introduction to PARADIGM T6.5 Sustainability roadmap.
  - T6.5 aims to define the strategic roadmap with all milestones to be reached in order to roll out and implement the model to ensure sustainability of this PE approach. It will also specify the infrastructure needed to systemize a meaningful PE during the lifecycle of a medicine. This roadmap will house the guidances, tools and best practices that will encompass possibilities for future stakeholders. A position paper describing the roadmap and calling to action to the community to achieve systematic PE.

Definitions for reference for the interviewer

- **Vision** would be about aspirations,
- **End Goals** would be about long-term measurable aims,
- **Intermediate Goals** would be about major steps with particular timelines towards achieving the End Goals
- **Activities** would be about what is being done or not done to implement or deliver the Vision and Goals

DISCUSSION GUIDE I. REGULATORY AGENCIES

ON VISION

Topics to explore:

- Approach towards PE and rationale for involving patients:
  - What do you see as an ideal level of PE?
  - What do you see as a long-term aim for PE?
- How do you understand the sustainability of the PE ecosystem, through what mechanisms and by who?
- In 5 years, what should be the role of the regulators in driving, providing guidelines of frameworks for meaningful PE?
- **Additional MHRA specific questions:**

- Is the agency considering to include the patients' voice in its activities beyond the Patient Consultative Forum? Preliminary results of 2019 consultation?[23]

ON END GOALS
Topics to explore:

- (C) What could be the turning point for PE becoming systematic? Does this require a top-down approach - understood as a clear signal to make PE in medicines R&D mandatory?
- If not the regulator, who should be responsible for this and by what mechanisms?
- **Additional EMA specific questions:** The EMA and the FDA have different approaches to their involvement in structuring the patient engagement landscape. FDA has issued a series of guidance documents to integrate patient experiences to integrate into drug development programs.
  - Is there an appetite to bridge that gap in the upcoming years in Europe or that is out of the scope of the mandate of the EMA?
  - (P) How do you plan to address the recommendation of reinforcing:
    - Patient relevance in evidence/patient data generation (e.g. including PROs, QoL, etc in benefit/risk (B/R) assessment?[24] Would you plan on developing guidance in this regard?
    - Leadership in enhancing PE?[25]
    - PE on each of the strategic goals of the EMA Regulatory Science to 2025?
  - (C) What´s EMA/EC perspective on requesting evidence of PE in development plans? What are the concerns and risks around making PE mandatory?
- **Additional FDA specific questions**: FDA's guidance series for the incorporation of the patients' voice in medical product development and regulatory decision making respond to the provisions required in the 21st Century Cures Act (2016) with regards to advance medical innovation to address patients' unmet needs and particularly, to issue guidance on methods and approaches to capture and measure patients' experiences and perspectives. These guidance documents will provide industry developers with the necessary information to integrate patient experience into drug development programs and also guide the way to develop new tools by other stakeholders (including POs) (for further FDA qualification).
  - (P) In addition to provide guidance on methods, is the FDA requesting evidence of PE during B/R assessment?

ON INTERMEDIATE GOALS
Topics to explore:

- (P) How are you progressing in relation to your PE strategy?
- (P) What milestones and roles do you have in their future? Do they relate to advocacy, promote partnerships, creating frameworks, others?
- (P) When it comes to sustaining PE, what are your plans in the intermediate term?
- (P) When it comes to sustaining PE, what are your plans in the long term?
- (P) Are you planning to have a specific role related to PE in the following areas?
  - research priority setting
  - design of clinical trials
  - early dialogues with regulators and HTA bodies
- (C) What insights do patients provide in developing and implementing your broader PE strategy?

ON ACTIVITIES
Topics to explore:

- (C) What are the main challenges that PE is facing? Which practical barriers need to be overcome?
- (R) What resources or tools would be useful in solving the identified challenges/barriers?
- (P/R) What activities, channels and collaborations are you undertaking to achieve the intermediate term goals
- (P/R) What activities, channels and collaborations are you undertaking to achieve the long-term goals?
- (C) In a hypothetical world, how would you envisage changes in order to be able to see some progress? What type of activities would support this?

[23] MHRA consultation on How should we engage and involve patients and the public in our work.
[24] EMA Regulatory Science to 2025: Cluster 1 - Individual member of the public/patient or Consumer Organisation and advocacy groups.
[25] EMA Regulatory Science to 2025: Cluster 3 – Researchers.

DISCUSSION GUIDE II. HARMONIZATION INITIATIVES (CIOMS AND ICH)

ON VISION

Topics to explore:

- Approach towards PE and rationale for involving patients:
  - What do you see as an ideal level of PE?
  - What do you see as a long-term aim for PE?
- How do you understand the sustainability of the PE ecosystem, through what mechanisms and by who?
- In 5 years, what should be the role of the harmonisation agencies in driving, providing guidelines of frameworks for meaningful PE?

ON END GOALS

Topics to explore:

- (P) How do you achieve harmonization in the frameworks and guidelines that you produce? Or ideally how would like to achieve this?
- (C) What could be the turning point for PE becoming systematic?
- (C) What barriers prevent the harmonisation guidelines becoming mandatory?
- (P) How could these barriers be overcome?

ON INTERMEDIATE GOALS

Topics to explore:

- (P) How are you progressing in relation to your PE strategy?
- (P)What milestones and roles do you have in their future? Do they relate to advocacy, promote partnerships, creating frameworks, others?
- (P) When it comes to sustaining PE, what are your plans in the intermediate term?
- (P) When it comes to sustaining PE, what are your plans in the long term?
- (P) Are you planning to have a specific role related to PE in the following areas?
  - research priority setting
  - design of clinical trials
  - early dialogues with regulators and HTA bodies
- (C/P) Are the guidelines that you produce enforced by the regulators? Any cross-work areas? When does an authority accept guidelines developed by harmonisation bodies?
- (C) What insights do patients provide in developing and implementing your broader PE strategy?

ON ACTIVITIES

Topics to explore:

- (C) What are the main challenges that PE is facing? Which practical barriers need to be overcome?
- (R) What resources or tools would be useful in solving the identified challenges/barriers?
- (P/R) What activities, channels and collaborations are you undertaking to achieve the intermediate term goals?
- (P/R) What activities, channels and collaborations are you undertaking to achieve the long-term goals?
- (C) In a hypothetical world, how would you envisage changes in order to be able to see some progress? What type of activities would support this?
- (P/C) How do you develop and maintain your guidelines and obtain adherence and through what activities and mechanisms?
  - **Additional questions for ICH:**
    - Return of experience on how we move from an ICH “soft” guideline to a “hard” implementation.
    - What are the mechanisms levered to get to the adoption of all the ICH guidelines?
  - **Additional questions for CIOMS**:

- What are the synergies between CIOMS WG XI (Patient Involvement) and XII (Benefit/Risk assessment)? Is the methodology on capturing patients' input going to be described in the next B/R assessment guidance? Will specific guidelines be issued?[4]
- Will CIOMS provide guidance on Ethics considerations for patient engagement in medicines R&D?[3]
- (P/C) How to obtain more adherence in non-adopters' countries/regions as Eastern Europe countries?

DISCUSSION GUIDE III. HARMONIZATION INITIATIVES (IMCRA)

ON VISION
Topics to explore:

- Approach towards PE and rationale for involving patients:
  - What do you see as an ideal level of PE?
  - What do you see as a long-term aim for PE?
- How do you understand the sustainability of the PE ecosystem, through what mechanisms and by who?
- In 5 years, what should be the role of the harmonisation agencies in driving, providing guidelines of frameworks for meaningful PE?
- For the agencies that do not currently involve patients, what is the rationale for not doing so?

ON END GOALS
Topics to explore:

- How do you achieve harmonization in the frameworks and guidelines that you produce? Or ideally how would like to achieve this?
- What could be the turning point for PE becoming systematic?
- What barriers prevent the harmonisation guidelines becoming mandatory?
- How could these barriers be overcome?

ON INTERMEDIATE GOALS
Topics to explore:

- How are you progressing in relation to your PE strategy?
- What milestones and roles do you have in their future? Do they relate to advocacy, promote partnerships, creating frameworks, others?
- When it comes to sustaining PE, what are your plans in the intermediate term?
- When it comes to sustaining PE, what are your plans in the long term?
- Are you planning to have a specific role related to PE in the following areas?
  - research priority setting
  - design of clinical trials
  - early dialogues with regulators and HTA bodies
- Are the guidelines that you produce enforced by the regulators? Any cross-work areas? When does an authority accept guidelines developed by harmonisation bodies?
- What insights do patients provide in developing and implementing your broader PE strategy?

ON ACTIVITIES
Topics to explore:

- What are the main challenges that PE is facing? Which practical barriers need to be overcome?
- What resources or tools would be useful in solving the identified challenges/barriers?
- What activities, channels and collaborations are you undertaking to achieve the intermediate term goals?
- What activities, channels and collaborations are you undertaking to achieve the long-term goals?

[4] 4th meeting of the CIOMS Working Group on Patient Involvement ,16-17 October 2019, Basel, Switzerland, Minutes, 26 November 2019.

- In a hypothetical world, how would you envisage changes in order to be able to see some progress? What type of activities would support this?
- How do you develop and maintain your guidelines and obtain adherence and through what activities and mechanisms?
- How to obtain more adherence in non-adopters' countries/regions as Eastern Europe countries?

ANNEX I. INTERVIEW TEMPLATE

Interviewer:	Date:
Interviewee:	Organization:

SUMMARY OF THE INTERVIEW

This summary should be provided in case the interviewee does not agree for the full report to be shared or included in the deliverable. In case the interviewee does not approve to include a summary in the deliverable, only aggregated learnings will be included in the deliverable for that specific initiative.

POST INTERVIEW ACTIVITIES BY INTERVIEWER

Next steps, if any.

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