D5.1: Model change management process for managing appropriate Controlling Polypharmacy
# Description of the deliverable D5.1

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<th>University of Peloponnese (UOP)</th>
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<tbody>
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1 Introduction

This deliverable report describes the work performed by the SIMPATHY consortium in developing the elements of the change management strategy and tools for appropriate management of polypharmacy across the EU. These results will be integrated with the finding of the other work packages, including literature reviews, case studies and EU wide benchmarking to develop D5.2 the Model Change Management Strategy and to make available the tools to stimulate and support change management approaches by healthcare organisations and stakeholders across the EU.

The design of healthcare systems should aim to the best use of the available scarce resources in order to deliver care that meets the needs of the population, without harming them. A major reason of the needs’ change is the demography, guided by the aging population, which is a challenge for all European countries. Inappropriate polypharmacy is a major public health issue that needs to be addressed since an increasing prevalence of multiple morbidity is observed, particularly in the elderly. The changes implemented may need to be iterative so that stakeholders are able to engage with the proposed changes and so that they can be adapted to suit the environment.

The overarching aim of SIMPATHY (Stimulating Innovation Management of Polypharmacy and Adherence in The Elderly) is to stimulate and support innovation across the EU in the management of polypharmacy and adherence in the elderly, with a specific focus on addressing inappropriate polypharmacy by delivering the necessary change management approaches and tools to help manage multi-medication and adherence to prescribed drugs. Change Management for the SIMPATHY project, is critical since the evidence based practices and the best practices in this field are at odds with established professional behaviour, single disease based guidance, and can hampered by political fragmentation, patients’ culture, and economic problems.

Managing the successful transformation of a system from the current situation to a new practice, which based on a new conceptual model, requires a robust strategy build on a common understanding and commitment from those tasked to deliver new processes.

The Change Management strategy within the project will be geared to deliver a new Vision, clarified and committed to by all partners, and supported by tools to support implementation with rationale and tested by all. Testing allows for adaptive change which is crucial to ensure practical application. This deliverable aims to draw the entire Change Management process that will be followed in order to achieve the transformation that meets the SIMPATHY aims.

This deliverable will:

- It contains an overview of the SIMPATHY Change management Process towards the Vision for a new different landscape in appropriate Polypharmacy management and adherence to support the elderly,
• It describes the first outcomes of the Change management interactive process, beginning with the first Workshop held in Athens with partners in the consortium,
• It illustrates the opinions and interprets them in order to identify the common parameters and build a common understanding of the Vision,
• It draws the steps drawn to be followed.

It is expected that this document will provide the basis for development of the tools that presents the Strategy, the Vision and the specific steps of a concrete Change management process model. The tools will be built by addressing the issues highlighted by the partners so that strategies can be built that address the problems and barriers together with data gathered from the benchmarking survey. This will be the basis of a successful change process, which will give results not only for SIMPATHY and Polypharmacy but also will be useful as a model for large scale changes in health sector.
2 The need for change in EU Polypharmacy management

2.1 Where are we now?

Medication is by far the most common form of medical intervention for both acute and long term conditions. Medicines are expected to be and they often are highly effective in managing symptoms, preventing disease and slowing disease progression. However, the more medicines a patient takes, the more likely they are to suffer an adverse drug reaction (ADR). This risk is more closely related to an increasing number of long term medical conditions than an increasing age. Although the severity of ADRs is varied, and the extent is not fully known, it has been shown that ADRs cause between 5-17% of all unplanned hospital admissions in the UK.

The provision of medications to patients includes prescribing as the first step following an exhaustive or less careful diagnostic procedure; there are so many actors who can be involved in the medication provision, with their roles and practices varying between the countries, complicating the analysis of the information to implement and drive change.

As the population ages, the number of people suffering from long term conditions increases and as a consequence their number of medicines they are taking. The risk of ADR and harm causing is an everyday issue that thousands of patients, across Europe, have experienced and thousands of professionals have tried to reverse the situation, by giving changing and/or reduce medication to prevent patient's admission to hospital. So the aspect of preventing citizens from any harm due to conflicting medication is, should be, a priority for all Health systems; by addressing safety and quality unnecessary costs can be avoided.

The number and type of factors that lead to inappropriate Polypharmacy may partly differ or coincide between the various countries; they are subject to be analysed from the perspective of the necessary change that must be introduced, stakeholders need to be engaged and aware why change needs to be introduced and be involved in the design of the change processes needed within their health systems and the question if we can design and then implement such a change can be addressed by the SIMPATHY project but it is recognised as a big challenge. Assuming the EU understands and accepts the urgency to manage appropriate Polypharmacy and places a high priority to achieve this global solutions need to be mobilised and coordinated in order to achieve the change. These are illustrated in the following Figure 1.
As is obvious in the figure, a mechanism of interactive parts - which cannot be separated - must be leveraged in order to mobilise the change. The will of professionals to empower patients and the power of the EU to roll out should be supported by the templates and tools that are necessary in order to transform the ideas into practice, and in turn, to transform new practice into well-established professional behaviour. This latter is one of the major contributions of the SIMPATHY programme. The aim is to consider if successful delivery in a country, or within a country can be scaled up across that country and then across Europe. SIMPATHY aims to achieve this by gathering the successes and challenges and how these were addressed from the partner countries to provide tools.

Thus a well-structured and concrete programme such as SIMPATHY, that includes partners from countries with different backgrounds and systems in place, and experts of different system levels and disciplines, has to provide the expertise to study and analyse the situation and design a realistic process for change.

More specifically the aims of the programme are:

- To inform the change management policies for improved outcomes from multi-disciplinary health care delivery, in order to help strategy building
- To address sustainability of EU health systems
- To develop and provide useful example models and tools to support innovation and improve adherence to new policies from both professionals and patients,
- To model a Strategic Plan for appropriate Polypharmacy and adherence, that will include not only the vision but also the tools to achieve the change.
2.2 Strengths, Weaknesses, Opportunities and Threats

The need for change across EU healthcare systems is supported by a SWOT analysis performed by the SIMPATHY consortium. A summary of the reported strengths, weaknesses, opportunities and threats is provided below. Full details of the analysis, similarities and differences are reported in Annex 1.

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>National governments are increasingly aware of medication safety issue for patients with polypharmacy and are seeking strategies focusing on quality improvement including implementation of regional best practices for managing polypharmacy and adherence.</td>
<td>Lack of a common vision on how exactly the problem of inappropriate polypharmacy should be tackled.</td>
</tr>
<tr>
<td>Healthcare professionals have the skills and competence to manage polypharmacy.</td>
<td>Technology deficiencies in ICT connectivity and data analytics exist.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedding a strategy for polypharmacy management in the national strategic plan for medication in general.</td>
<td>Limited evidence of the efficacy of existing solutions for polypharmacy management deployed at population level.</td>
</tr>
<tr>
<td>Lessons can be learned from countries where new models of care for medicines optimisation for older people have been tested and are being scaled up nationally.</td>
<td>Lack of co-operative culture among health professionals and organisations, in different levels, may delay the change towards integrated types of care and maintain the silos.</td>
</tr>
<tr>
<td>The development of the clinical pharmacy workforce in general practice can be a key enabler of service provision in polypharmacy and adherence.</td>
<td>Lack of healthcare professionals due to an increase in elderly patients: this threat is already the reality</td>
</tr>
</tbody>
</table>
3 Emergent vision from a focus on Change management

In this section we outlines the results of the three exercises performed during and as follow up to the SIMPATHY Change Management Workshop. These exercises aimed to answer the questions “Where are we going?” and “How will we get there?” which were extensively discussed through brainstorming sessions and group exercises in the context of why the change was needed. What does success look like is related to the Vision, “Where are we going?” and “How will we get there?” and relates to the Road Map illustrated in the SIMPATHY vision (Page 79). All answers have been illustrated in three templates. Workshop outputs include (a) three specific templates (one for each exercise) which illustrate the similarities and the differences between teams (in each of the exercises) and (b) a commentary text that interprets the answers. Finally a commentary that focuses on the common or different issues will close this chapter.

The key element of the emergent vision are illustrated below;
Patient Vision for SIMPATHY

I have diabetes and asthma and take 10 different medicines. I manage my medicines using my phone app with the support of my pharmacist, nurse and doctor. They listen to my concerns and “what matters to me” and regularly check my medication with me. When I was unwell recently I spoke to my pharmacist in the health centre. I was able to stop a couple of medicines but the pharmacist also added another one and now I feel much more in control.

I know when I have a problem with my medication, I can contact my doctor or pharmacist for advice or queries.

Understanding why I need to take each of my medicines and what they are for, enables me to make my own decisions with the help of the healthcare team.
3.1 The 2025 Polypharmacy report

The exercise

Answering the question “where are we going” or “where do we really want to go” or “where do we believe we can really go” is of major importance. When setting off on a project and in order to ensure success, it is crucial to define the destination and clarify and describe in detail what the ultimate goal and expected outcome is. Furthermore the Vision includes – apart of the above - the dream we have about a situation; the vision needs to be shared, be common across all parties, be believed in, and supported with consistency by all actions.

Within this framework, the first Group exercise asked to develop the “Executive Summary of the 2025 Report”. The exercise aimed at setting the Vision for polypharmacy - how it can be defined, what it means, how the level of accomplishment can be measured.

People participating in the workshop were split into three groups. In essence, they were asked to imagine it was ten years into the future, and put themselves in the position of being the author of the 2025 report, describing what success in changing the polypharmacy landscape would look like in that year, by looking back and trying to evaluate whether/how the goals were achieved (through the Change Management processes). Ideas and opinions of the teams were captured on drawing boards and flipcharts. Through this exercise it was expected to arrive at and share a Vision, reaching a common understanding that is assessed as fair for the patients and professionals and mainly feasible.

The teams were briefed that the ultimate goal is to achieve transformational change and were asked to answer the following:

a. “What does success look like. What will it (polypharmacy) be like in 2025?”

Teams had approx. 30 mins to prepare this part, which consisted of the following sub-steps:

i. Individually and in silence, each team member put together post-it notes with ideas answering the question

ii. In turn put the Post-It notes were placed on the drawing boards

iii. Post-it notes were subsequently grouped and discussed among team members

Some tips provided to the teams were:

- Describe the features of the system for managing polypharmacy which meets the shared purposes of individual stakeholders

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1 See Annex 6: Team members
- Identify the key performance metrics (shared results: socioeconomic, epidemiological and health outcomes indicators), e.g. number of hospitalisations during follow-up period (unplanned admissions, re-admissions, admissions related to medication, attendances to emergency departments); extra ADR-related bed days; numbers of patients prescribed a large number (e.g. > 7) different drugs; changes in QoL measure by the EQ-5D; information about healthcare services use (number of unplanned visits to GP practices, number of out of hour visits); and, broadly, healthcare costs (incl. labour inputs of carrying out the polypharmacy reviews)

- Chart the progress between 2015 and 2025
- Describe the shared values that have driven the transformation in an appropriate way and how these Values are maintained in 2025

b. “What does success look like for WP5 during the lifetime of SIMPATHY?”

Again teams were given approx. 30 mins to address this question following the same sub-steps. Following these two 30-min sessions, groups were asked to discuss the content of the “Executive Summary” of the “Polypharmacy Report for 2025” and then put together individually for each country the “Executive Summary”. Finally, one speaker from each group was asked to present their team’s 2025 vision.

**Similarities and differences between teams**

The three teams developed and submitted extended Reports for 2025 which all have different structures, thus they are not directly comparable. But it is worth describing similarities and differences among the teams because the way SIMPATHY partners approach the Vision is very critical, in order to achieve common understanding and establish the Change Management process.

The first team described the background of Polypharmacy (similar to the situation currently experienced) and then described what and how has been obtained; at that point they were able to give evidence of improvements and to present interventions (as the legal ones and the redesign of organisational framework) and measures (as incentives to players, involvement of patients, communication). They finally described their Vision in which Polypharmacy management is part of the routine, run by interdisciplinary teams within a supportive European context.

The second team provided evidence about the anticipated future 2025 situation, and described this as being totally different than the current one, focusing on patient-centered care and multi-disciplinary teams, having built everything on this basis. They also mentioned the milestones they managed to meet. Their Vision is not clearly mentioned but can be derived by the well-structured 2025 picture.

The third team presented a very brief executive summary and described an integrated care model that has been achieved to run effectively in 2025. There is not a separated Vision included but it can be assumed that the integrated care model is the vision for this team, meaning that an aspect for a solution in the problem of Polypharmacy could be managed under such a model.

So, the Vision appeared to include, as common understanding of all teams, legal and organisational interventions, less co-morbidity and admissions due to less AEM as measure, multidisciplinary teams and guidelines, patients’ empowerment and measure to provide evidence. The involvement of different disciplines does not seem to be a problem but they are perceived as advantage for the change process.

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2 See Annex 5: The three “2025 Report on Polypharmacy”, despite the common issues differ regarding the expression of the Vision, the steps, the measures, due to different background of the team and the leader.
The overview table for exercise 1 that is table number 1 will follow in order to provide the overview picture and more detailed information, though the rephrasing kept in the table the most essential issue. Table 1 illustrates similarities and differences from exercise A.

### Table 1: Similarities and differences among Teams, Exercise A of CM Workshop

<table>
<thead>
<tr>
<th>Similarities among Team 1, Team 2 and Team 3</th>
<th>Differences Team 1, Team 2 and Team 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several factors played a crucial role in obtaining this change on European level:</td>
<td>Several factors played a crucial role in obtaining this change on European level:</td>
</tr>
<tr>
<td><strong>Multi-disciplinary teams / Integrated system</strong></td>
<td><strong>National and European legislation</strong></td>
</tr>
<tr>
<td>• Supporting management of polypharmacy by multi-disciplinary teams, including community pharmacists working hand by hand with GP teams, taking structured care of multimorbid patients.</td>
<td>relevant changes in national and European legislation enabled stakeholders to take more active role in polypharmacy management</td>
</tr>
<tr>
<td>• Multi disciplinary teams (including physicians, nurses, pharmacists, psychologists, social workers and other HP) and integrated health care are fully deployed</td>
<td><strong>Finance and resources</strong></td>
</tr>
<tr>
<td>• We are coming close to the implementation of our vision to create one overarching system across all of health care, including primary and secondary care, community pharmacy, as well as political support.</td>
<td>The reductions in the overall prescription rates and the total number of drugs prescribed per patient over the last 10 years are significant. The mechanism to achieve that is the new type of contract, for GPs and CPs, based on patient outcomes, away from a strict linear pay per prescription structure.</td>
</tr>
<tr>
<td><strong>ICT communication</strong></td>
<td><strong>Education HCP</strong></td>
</tr>
<tr>
<td>• integrated, user friendly dedicated ICT tools to support the management of multimorbidity and polytherapy has been made available to all stakeholders.</td>
<td>Health Care Professionals (HCP) are trained in a structured way to perform medication optimisation and they train together to improve team work and increase therapeutic benefits for the patients.</td>
</tr>
<tr>
<td>• Communication, based on ICT systems in all health care organizations, has been improved between all providers, who adopted the new electronic patient records system, which is 99% complete.</td>
<td></td>
</tr>
<tr>
<td>• E-health is implemented across EU and each citizen has a personalised HealthCare record and an updated unique administered medication list.</td>
<td></td>
</tr>
<tr>
<td><strong>Patients’ involvement and empowerment</strong></td>
<td></td>
</tr>
<tr>
<td>• Patients’ involvement and empowerment has been put in the centre of interest from the very beginning, helping acceptance of this new philosophy of health management by European elderly patients.</td>
<td></td>
</tr>
<tr>
<td>• Patients are making informed decisions about their pharmacotherapy and they are active partners in all aspects of health services</td>
<td></td>
</tr>
<tr>
<td>• Our patient information initiative was taken up by patient groups and they, as well as care home residents, have had an active involvement in the development of guidelines over the last couple of years.</td>
<td></td>
</tr>
<tr>
<td><strong>Polypharmacy management</strong></td>
<td></td>
</tr>
</tbody>
</table>
3.2 The Road Map toward 2025 Polypharmacy Vision

The exercise

Group exercise II aimed at addressing the question “How do we get there”, i.e. How do we realise and make steps towards the Vision defined in group exercise I. In particular, once the teams had described how the story of the transformational change sought turned out in 2025, they were asked to work back from the “destination” to define the “road-map from 2015 to 2025”, i.e.:

- describe the specific steps that need to be undertaken
- describe the strategies that will underpin the progress
- identify the key stakeholders and their roles and responsibilities
- determine the key metrics that will be used to measure success.

This part of the workshop aimed to link the previous phase (exercise A) and project the identified, as necessary, characteristics to the road map. So a clear link between the two phases – exercises were required in order to ensure continuity and even deeper thinking on the subject of transformational change.

Teams were asked to prepare a road-map based on a predefined - Model template (Figure 3).

Figure 3: Road-map template

---

3 The template selected to be presented here is a completed one, in order to help to understand the whole concept. This is an example for teams complete. The template had the two vertical axes, the diagonals and the years 2015 as beginning of the program, the 2017 and 2020 as milestones, 2025 as the future point.
Within this template, many of the steps and actions towards the vision are reported, with a chronological order (horizontal axis defining time) and by grouping information by “policy” and “medicine” related actions. Teams should think strategically and identify the key milestones in the process (including key changes, events and reports), include in the diagram the key performance indicators (KPIs), and populate this template backwards, starting from the envisaged destination point 2025. SIMPATHY identified the need to be integrated within the first two-years (2015-2017) in order to have the time horizon to achieve a real change and then to make this change stable. This later is one of the difficult issues in all changes, even more in a large scale change.

In Table 2, the similarities and differences in opinions and approaches for Exercise B –Road map are illustrated.
### Table 2: Similarities and Differences among Teams, Exercise B of CM Workshop

<table>
<thead>
<tr>
<th>Similarities among Team 1, Team 2 and Team 3</th>
<th>Differences among Team 1, Team 2 and Team 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sep 2015-Sep 2017</strong></td>
<td></td>
</tr>
<tr>
<td>• Identify and share evidence of effect of multi-professional work. “Break silos”, (Literature review)</td>
<td>• Measurements of cost of ADR presented at international health economy forum</td>
</tr>
<tr>
<td>• Describe baseline situation of polypharmacy and adherence locally.</td>
<td>• Educate HCP on management of polypharmacy – always inter-professional training when possible.</td>
</tr>
<tr>
<td>• Convince and educate policy makers and politicians, make them want to make a change. (Stakeholders’ interviews)</td>
<td>• Set of KPIs</td>
</tr>
<tr>
<td>• Make the public aware and advocate change (Increased awareness of polypharmacy across EU)</td>
<td>• Build multi-professional teams with shared goals; patient in center. The scope of practice and role of each member should be clear to all.</td>
</tr>
<tr>
<td>• Case studies presented at conferences and workshops</td>
<td></td>
</tr>
<tr>
<td>• Best practice guidance on gold standard</td>
<td></td>
</tr>
<tr>
<td><strong>Sep 2017-Sep 2020:</strong></td>
<td></td>
</tr>
<tr>
<td>• Local pilots performed to optimize processes (Pilot studies, intervention studies)</td>
<td>• Scaling up model</td>
</tr>
<tr>
<td>• New tools e-health implemented (Creating instruments for pharmacy reviews, Set up/ integrate e-databases &amp; analyses)</td>
<td>• Teams in Place to Inspire Change management</td>
</tr>
<tr>
<td>• Fill gaps between institutions, PC, hospital, University etc. (Set-up/ integrate/ move towards a single institution in health care/ in primary care)</td>
<td>• Patient incentive scheme</td>
</tr>
<tr>
<td>• Guidelines &amp; protocols, Widely adopted throughout EU, (Change of national/EU guidelines)</td>
<td>• Moving from only elderly to all patients</td>
</tr>
<tr>
<td><strong>M1: Cost of ADR bed-days</strong></td>
<td><strong>M1: % of patients with 7+ drugs</strong></td>
</tr>
<tr>
<td>• Sep 2015: 1.5 m Euro</td>
<td>• Sep 2015: 100%</td>
</tr>
<tr>
<td>• Sep 2017: 1 m Euro</td>
<td>• Sep 2017: 80%</td>
</tr>
<tr>
<td>• Sep 2020: 0.5 m Euro</td>
<td>• Sep 2020: 70%</td>
</tr>
<tr>
<td>• Sep 2025: 0.1 m Euro</td>
<td>• Sep 2025: 50%</td>
</tr>
<tr>
<td><strong>M2: % of all medicines management services to elderly delivered by multi-professional teams (i.e. the SIMPATHY model)</strong></td>
<td><strong>M2: % of completeness of patient records &amp; ICT systems</strong></td>
</tr>
<tr>
<td>• Sep 2015: 0%</td>
<td>• Sep 2015: 0%</td>
</tr>
<tr>
<td>• Sep 2017: 25%</td>
<td>• Sep 2017: 10%</td>
</tr>
<tr>
<td>• Sep 2020: 50%</td>
<td>• Sep 2020: 50%</td>
</tr>
<tr>
<td>• Sep 2025: 100%</td>
<td>• Sep 2025: 100%</td>
</tr>
</tbody>
</table>
### Similarities and differences between teams

Trying to summarise and emphasise the similarities of the opinions and approaches, it is obvious that some major categories of interventions are described by all Teams and can be identified:

One is that Breaking Silos is important; this category entails multi-disciplinary work, the recommended filling of gaps between institutions, e-health applications that promotion of real time information and communication.

The second is that all partners share the belief of making the public aware (including patients) as well as involving stakeholders and politicians.

Also the use of protocols and pilot studies are considered as important, because they can provide evidence that will help to convince professionals or politicians to want the change.

In addition quantitative standards are targeted to be achieved on certain milestones. Supplementary to these additional indicators can be also adopted and targeted during an integration process, which has indeed being desirable for the first two years of the programme.

The same principle applies regarding the supplementary use of the more sophisticated measures or actions proposed by some of the participants. On the other hand the additional issues, introduced probably by a minority, need to be examined, in order to ensure that these should be adopted or rejected and, if it is the first, I could be an issue for discussion and clarification about the usefulness and the way of adopting them.

Finally the clarification of roles is suggested as an issue.

Taking into account that this exercise reflects the Road Map it is recommended to discuss on all these and achieve really a common understanding and knowledge on the issues in order to be able to adopt any of them that are considered as useful.

### 3.3 Drivers and Barriers for Changing Polypharmacy PESTLE

**The Exercise**
The objective of the last exercise of the CM Workshop was to outline the drivers and barriers that will emerge during the CM process. Identifying the drivers and barriers constitutes an indispensable component of the discussion started in group exercise II, aiming to answer Question 3 “how to get there”. Drivers need to be identified because they will help us get quicker and closer to our vision. Barriers need to be identified in order to attract efforts to manage, reduce, or even eliminate them. In particular, workshop participants;

- worked within their groups in order to list the main drivers and barriers
- rated them using a 5 point scale (1 = least influential… 5 = most influential)
- took the 3 strongest/ most influential drivers and barriers and provide some ideas on how these could be strengthened and eliminated, respectively.

In this process, team members were asked to think of the drivers and barriers to the vision for 2025 first in their own organisation, and then in other organisations and at the local and national levels.

The Drivers and Barriers, which are fundamental in every change process, are rather easy concepts to be understood and worked out. They might also be included in other exercises; for example writing the “2025 Polypharmacy report” one may think that of course some barriers may have been overcome by relative actions, or when drawing the Road Map actions to overcome the possible negative issues have to be developed. Despite this sense of possible inclusion in other exercises, it is important to clearly identify the Drivers and Barriers to change. Additionally the familiarity of the concept help the people to realize them easier and take them into account when building the change strategy.

### Table 3: Similarities and Differences among Teams, Exercise C Drivers to Change

<table>
<thead>
<tr>
<th>DRIVERS</th>
<th>Similarities among Team 1, Team 2 and Team 3</th>
<th>Differences among Team 1, Team 2 and Team 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandate to use public money efficiently</td>
<td>5 Ideas to strengthen:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gather and present (local and national) data on money not used efficiently</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Payment for polypharmacy review by GP if made with advice of pharmacist</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Budget controls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benchmarking exercises to assess which areas/ specialties etc are associated with increased expenditure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ideas to strengthen:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduce the waste of professionals’ and patients’ time by task shifting and work (multi-professionally) with “lean” processes. Demonstrate effects and try to gain momentum.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Physician professionalism: Development of guidelines</td>
<td></td>
</tr>
<tr>
<td>Physician Professionalism (to provide the best service)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Modern approaches as</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>DRIVERS</td>
<td>Similarities among Team 1, Team 2 and Team 3</td>
<td>Differences among Team 1, Team 2 and Team 3</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>information/ awareness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients’ demand for better Quality of care</td>
<td>4</td>
<td>2-3 (other team)</td>
</tr>
</tbody>
</table>
| Increasing trend for HTA in pharmaceuticals | 3 | Ideas to strengthen:  
- Liaise with patients to help them articulate needs and wants. Contact and discuss management also with the patients’ carers (individuals and residential homes) and relatives if the patient is not managing his/her own drug therapy. Help them articulate wants & needs. |
| IT technology to support respective apps (e- prescribing, patient health e-card) | 3 | 4 (other team) |
| Accreditation of health care institution and legislation | 5 | Ideas to strengthen:  
- Relentlessly inform health care providers and decision makers of the legislation/demands and come up with solution. Work on a higher level and try to instigate “payment for performance”, monitor the progress. |
**Table 4: Similarities and Differences, Exercise C Barriers to Change**

<table>
<thead>
<tr>
<th>BARRIERS</th>
<th>Similarities among Team 1, Team 2 &amp; Team 3</th>
<th>Further among Team 1, Team 2 and Team 3</th>
<th>Ideas to eliminate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural issues of professionals/ involvement (Doctors independency/ security feeling in short term)</td>
<td>5</td>
<td>2-3 (other team)</td>
<td>Ideas to eliminate:</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td>• Multi-professional under- and post graduate training in polypharmacy management.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Show evidence of effect of multi-professional models</td>
</tr>
<tr>
<td>Cultural issues of patients (e.g. trust more the doctors who prescribes a lot of medication)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology barriers (poor or inadequate IT systems)</td>
<td>3</td>
<td></td>
<td>Ideas to eliminate:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Create integrated electronic databases, registries, patient files</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Educate health care professionals to use these tools</td>
</tr>
<tr>
<td>Legal and regulatory framework (protective to old work manners or exclusive to modern and integrated approaches)</td>
<td>5</td>
<td></td>
<td>Ideas to eliminate:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Work on higher political level to initiate changes in legislation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Avoid multiple legislative acts that create a vague framework that confuses as to what is actually in effect</td>
</tr>
<tr>
<td>Health Systems development and current structure (PHC or integrated care of hospital focused care)</td>
<td>5</td>
<td></td>
<td>Ideas to eliminate:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Restructuring the healthcare system, so that primary healthcare becomes the foundation of the system, through inviting all stakeholders to sit on the same table and reach agreement on a win-win solution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Develop an integrated system, esp. in PHC, potentially with gatekeepers or health care professionals with a central role, who will coordinate communication across disciplines and work towards a holistic view of the patient</td>
</tr>
<tr>
<td>Reimbursement system and institutions autonomy</td>
<td>3</td>
<td>4 (other team)</td>
<td>Ideas to eliminate:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Exchange of multiple providers necessary</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Knowledge sharing between multiple providers necessary e.g. liberalisation of data protection laws so that different IT-systems can be linked together</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Inform and train patient groups to present their demands and protect their rights for qualitative services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Healthcare systems should not work under silos /patient is not a passive element – work to promote changes!</td>
</tr>
</tbody>
</table>
### 3.4 Synthesis of Change Management Workshop Results

The results of the group exercises have been presented in tables and briefly discussed in the previous chapter. The following section provides a summary of the key points that constitute common ground across all teams for each of the three elements: Vision, Road-map, Drivers and Barriers. All the parameters arising from consensus should form the basis for the CM process.

**The vision**

With respect to the first exercise and the identification of the vision, there was strong consensus across teams that the ultimate general goal is *"Managing appropriate Polypharmacy and increasing adherence in the elderly, while maintaining or improving quality of life"*. The partners’ Vision includes dimensions that support the Vision (and finally become part of it) such as (a) the multi-disciplinary approach of Health service delivery and the patient centered care, as well as (b) professionals’ training for understanding and serving patients more effectively, (c) integrated care models and redesign of professionals’ roles.

The metrics to be used in order to assess success of achieving this vision include readmissions due to ADR, the percentage of patients receiving 7+ drugs, QALYs, the rate of drug-related hospitalizations, and total drug costs.

**The road-map**

In terms of “how to get there”, all groups agreed that there is a need for *establishing multidisciplinary teams and integrated systems, which would support the management of polypharmacy*. Teams should include community pharmacists, GPs, nurses, psychologists, social workers and other health care professionals (e.g. other physician specialties), and would adopt a more holistic approach to the management of the patient, developing structured and systematic care for patients with multiple morbidities. For this to be implemented, integrated, user friendly dedicated ICT tools should be fully deployed and functioning across all levels of health care provision, including primary and secondary care. All information should be available to all stakeholders.

Further to the above common grounds, groups agreed that *in order to implement a new approach towards polypharmacy management public and professional communication should be improved and sustained*. In addition, *guidelines on polypharmacy and management of multi-morbidities should be developed, disseminated and successfully implemented across the EU*.
For these changes to take place at the national and European levels, *relevant changes in the legislation should take place that would enable stakeholders to undertake more active roles in polypharmacy management*. It should ideally also be evidenced that implementation of the changes can in the medium to long-term lead to efficiency gains, where medium and long term benefits through reduced drug cost and capacity released in the system outweigh the short-term costs of implementation. The key stakeholders identified by the groups were the following:

- **Patients** - patient involvement and empowerment should be increased. Patients should be placed in the centre of the process from the very beginning, and thought of as active partners making informed decisions on their therapies. They should be educated to contribute to this process (e.g. active involvement in the development of guidelines) and increase acceptance of the new philosophy.
- **Payers (finance and resources)** – mechanisms to achieve reductions in the overall prescription rates and total costs could be a new type of contract, for GPs and CPs, based on patient outcomes, away from a strict linear pay per prescription structure.
- **Health Care Professionals (HCP)** should be trained in a structured way in order to perform medication optimization, improve team work and increase therapeutic benefits for the patients.

Teams also identified specific steps that should be undertaken towards the vision:

- Description of the current situation of polypharmacy and adherence.
- Literature review to identify and share evidence on the effect of multi-professional work
- Campaigns to increase awareness of polypharmacy across the EU
- Stakeholder interviews
- Education of policy makers and politicians
- Presentation of SIMPATHY case studies at conferences and workshops
- Development of a best practice guidance or gold standard on how to implement or undertake a review

**Drivers and Barriers**

One of the key drivers of the CM process is the mandate to use public money efficiently. Payers are increasingly concerned about health care budgets and rising expenditure, thus a discussion around how appropriate polypharmacy management could help towards cost containment could be a very important step in bringing payers on board and engaging them to help with the CM process. Specific steps that could be taken to strengthen this driver are presenting local and national data on health care spending, showing how these could be controlled if HCPs worked in teams, and developing benchmarking exercises to assess which areas and/or specialties are associated with increased expenditure.
An economic analysis considering the costs and benefits of implementing new models of appropriate polypharmacy management should ideally take into consideration not only the direct costs of implementation versus potential savings to the system, but also wider (indirect) benefits, e.g. of subsequent improvements in patients’ health, capacity released in the wider healthcare system, and even long-term welfare improvements at societal level.

Direct costs would centre mainly around the resource implications, i.e. staff time and pay, as well as other capital expenditure or changes to infrastructure if these were needed. Direct savings will most likely be obtained through the optimisation of medicines, i.e. a reduction in inappropriate prescriptions, reductions in unnecessary repeats and possibly an overall reduction in the number of drugs taken. Evidence from the literature suggests that there can also be expected indirect benefits in the form of reductions in adverse drug reactions and subsequent avoided hospital admissions and hospital bed days. While these might not be immediately cash releasing, they will have a positive, capacity releasing impact on the healthcare system. If a small proportion of those cases addressed leads to reduced mortality, the societal welfare gains of avoided deaths would be large.

Patient demand for better quality of care is also identified as a key driver towards the CM. Ideas to strengthen this barrier include liaising with patients to help them articulate needs and wants and also contact and discuss management with the patients’ carers (paid and non-paid, i.e. relatives or friends).

The development of ICT technology to support applications such as e-prescribing and patient health e-card are also considered as key drivers. The development of such tools should be accompanied by incentives to physicians and other health care professionals (e.g. pharmacists) to use them. In addition, teams should be built to manage the large databases, analyse data and produce regular reports.

The legal and regulatory framework, as well as the current structure of the health systems were identified by all groups as the strongest barriers. In particular, current legal frameworks that are protective of old ways of working or exclusive to modern and integrated approaches can be a major obstacle that can hinder the CM process. To overcome this work should be undertaken on a high political level to initiate changes in legislation and trigger political will. The framework should provide long-term stability through broad political acceptance, while multiple legislative acts should be avoided, as these create a vague and confusing legal environment.

As far as minimising the hindering effect of the current structure of the health care systems, restructuring work should be undertaken, so that primary healthcare becomes the foundation upon which secondary and tertiary healthcare are based, through inviting all stakeholders to sit on the same table and reach agreement on a win-win basis. Integrated systems, esp. in primary health care, potentially with gatekeepers or health care professionals with a central role, who will coordinate communication across disciplines and work towards a holistic view of the patient should be developed and implemented.
3.5 PESTEL Analysis

3.5.1 Political Factors

Political factors below arose from the study, the relative importance and impact of these external factors on management of polypharmacy are illustrated in the diagrams below.

<table>
<thead>
<tr>
<th>P1. Health services delivery/Health services network and coordination of services (The extent to which different parts of the PHC - Ambulatory Care - Hospital Care system are connected. Keep in mind “who prescribes, who has the right to give drugs?”)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1.</strong> To what extent will the degree of networking, integration/fragmentation of health care delivery “lines” across your country IMPACT in the management of polypharmacy to 2025?</td>
</tr>
<tr>
<td><strong>A) Public sector</strong></td>
</tr>
<tr>
<td><strong>P1a.</strong> To what extent would a trend (increasing or decreasing) in the ratio of hospital beds per inhabitants impact upon polypharmacy to 2025?</td>
</tr>
<tr>
<td><strong>B) Private sector</strong></td>
</tr>
<tr>
<td><strong>P1b.</strong> To what extent would a trend (increasing or decreasing) in the number of doctors practising privately impact on the management of polypharmacy to 2025?</td>
</tr>
<tr>
<td><strong>c) Family Care Units</strong></td>
</tr>
<tr>
<td><strong>P1c.</strong> To what extent would a trend (increasing or decreasing) in the prevalence of General Practice/Primary care Units impact on the management of polypharmacy to 2025?</td>
</tr>
<tr>
<td><strong>P3. Governance structure/ decision making and resulting impact (Keep in mind decision making on pharmaceuticals and service lines, (who decides for regulations on prescribing system, pharmacies function, family health units, guidelines and outcomes assessment, controlling, cost measures etc.)</strong></td>
</tr>
<tr>
<td><strong>P3.</strong> To what extent will the degree to which centrally devised policy is adhered and implemented at different levels impact upon the management of polypharmacy?</td>
</tr>
<tr>
<td><strong>P3a. Ministry of Health?</strong></td>
</tr>
<tr>
<td><strong>P3b. Regional Health Authorities?</strong></td>
</tr>
<tr>
<td><strong>P3c. Other regulatory bodies in Pharma-sector decision making?</strong></td>
</tr>
<tr>
<td><strong>P4. Political trust</strong></td>
</tr>
<tr>
<td><strong>P4.</strong> To what extent will the influence of pharmaceutical companies and the provision of prescribing incentives impact upon the management of polypharmacy to 2025?</td>
</tr>
<tr>
<td><strong>P2. Primary health care - Chronic disease management</strong></td>
</tr>
<tr>
<td><strong>To what extent will levels of coordination/independence between service lines be a factor in the management of polypharmacy to 2025?</strong>*</td>
</tr>
<tr>
<td><strong>To what extent will specific health policies for the elderly be a factor in the overall management of polypharmacy to 2025?</strong>*</td>
</tr>
</tbody>
</table>
### Impact

**P1a: Health services delivery/Health services network, Public sector: ratio of hospital beds per inhabitants**

<table>
<thead>
<tr>
<th>Country</th>
<th>N. Ireland</th>
<th>Poland</th>
<th>Sweden</th>
<th>Germany</th>
<th>Portugal</th>
<th>Scotland</th>
<th>Catalonia</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>1.0</td>
<td>2.5</td>
<td>3.2</td>
<td>4.1</td>
<td>2.8</td>
<td>3.8</td>
<td>4.5</td>
<td>6.0</td>
</tr>
</tbody>
</table>

**P1b: Health services delivery/Health services network, Private sector: number of doctors practising privately**

<table>
<thead>
<tr>
<th>Country</th>
<th>N. Ireland</th>
<th>Poland</th>
<th>Sweden</th>
<th>Germany</th>
<th>Portugal</th>
<th>Scotland</th>
<th>Catalonia</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>1.0</td>
<td>2.5</td>
<td>3.2</td>
<td>4.1</td>
<td>2.8</td>
<td>3.8</td>
<td>4.5</td>
<td>6.0</td>
</tr>
</tbody>
</table>
P1c Health services delivery/Health services network, Family Care Units: prevalence of General Practice/Primary care Units

Poland
Sweden
Scotland
Portugal
Germany
Catalonia
Greece
Italy

P1. Health services delivery/Health services network: ratio of hospital beds per inhabitants, number of doctors practising privately and prevalence of General Practice/Primary care Units

N.Ireland
Poland
Sweden
Scotland
Portugal
Germany
Catalonia
Greece
Italy
Factors 3a – 3c

P3a. Governance structure: Ministry of Health

- Italy
- Greece
- Catalonia
- Germany
- Portugal
- Scotland
- Sweden
- Poland
- N.Ireland

P3b. Governance structure: Regional Health Authorities

- Italy
- Greece
- Catalonia
- Germany
- Portugal
- Scotland
- Sweden
- Poland
- N.Ireland
Factor P4:

- Governance structure: Other regulatory bodies
- Influence of pharmaceutical companies and the provision of prescribing incentives

---

P3c. Governance structure: Other regulatory bodies

N.Ireland, Poland, Sweden, Scotland, Portugal, Germany, Catalonia, Greece, Italy

P4. Influence of pharmaceutical companies and the provision of prescribing incentives

N.Ireland, Poland, Sweden, Scotland, Portugal, Germany, Catalonia, Greece, Italy

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D5.1
Dissemination level: PU
Political factors: visualization of all factors and all countries:

Factor P1 has a high impact in all countries (4 to 5), all other factors have different impact across the countries. In general, the political factors have a high impact in several countries e.g. Northern Ireland, whereas in Italy the political factors show a much lower impact.
3.5.2 Economic factors

Economic factors below arose from the study, the relative importance and impact of these external factors on management of polypharmacy are illustrated in the diagrams below.

<table>
<thead>
<tr>
<th>E1. Overall economic success</th>
<th>E2. Health system’s structure and financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. To what extent will the current trajectory of growth (or lack of it) in the economy impact upon the management of polypharmacy to 2025?</td>
<td>E2. To what extent would an increase in the number of inhabitants who have covered access to health care services (including demographic changes and the impact of an ageing population) be a factor in the management of polypharmacy to 2025?</td>
</tr>
</tbody>
</table>

![E1. Overall economic success: current trajectory of growth (or lack of it) in the economy](image1)

![E2. Health system’s structure and financing: increase in the number of inhabitants who have covered access to health care services](image2)
Economic uncertainties around growth and funding were regarded as most significant and uncertain in their impact on polypharmacy management in Italy, Greece and Catalonia, Northern Ireland regarded economic growth as an important factor.
3.5.3 Social Factors

Social factors below arose from the study, the relative importance and impact of these external factors on management of polypharmacy are illustrated in the diagrams below.

**S1. Access to health care**
- **S1a** To what extent would access to health care services (easy/difficult) for patients living in remote areas be a factor influencing polypharmacy management to 2025?
- **S1b** To what extent would access to health care services (easy/difficult) for specific population groups (e.g. the elderly) be a factor influencing polypharmacy management to 2025?

**S2. Attitudes and beliefs, cross-cultural diversities:**
- **S2a** To what extent will attitudes and beliefs of clinicians have an impact upon polypharmacy management to 2025?
- **S2b** To what extent do the following attitudes, beliefs and cross-cultural diversities of patients have an impact upon polypharmacy management to 2025?

**S3. Education**
- **S3a** To what extent would an increased investment in the education of clinicians be a factor in the management of polypharmacy to 2025? For example:
- **S3b** To what extent would adoption of multiple-disease guidelines impact upon polypharmacy management to 2025?
- **S3c** To what extent can we predict the reaction of patients to public awareness campaigns and how that will affect the management of polypharmacy to 2025?
The impact of investing in clinical training and adoption of multiple-disease guidelines upon polypharmacy management was seen as universally high while the impact of patient response was variable.
Social factors: visualization of all factors and all countries:

Factors S2b and S3a which relate to investment in clinical training have a high impact (4 to 5) across all the countries. The social factors have in Sweden generally a lower impact.
3.5.4 Technological factors

Technological factors below arose from the study, the relative importance and impact of these external factors on management of polypharmacy are illustrated in the diagrams below.

**T1. Existence of ICT integrated systems**

<table>
<thead>
<tr>
<th>Country</th>
<th>T1a Lack of inter-connectedness of ICT</th>
<th>T1b Shortcomings in the capture of admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td></td>
<td></td>
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<tr>
<td>Greece</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catalonia</td>
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<tr>
<td>Germany</td>
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<td>Portugal</td>
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<tr>
<td>Scotland</td>
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<tr>
<td>Sweden</td>
<td></td>
<td></td>
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<tr>
<td>Poland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N.Ireland</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**T2. Innovative drugs policies**

<table>
<thead>
<tr>
<th>Country</th>
<th>T2 Innovative drug policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td></td>
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<tr>
<td>Greece</td>
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<td>Catalonia</td>
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<td>Germany</td>
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<td>Portugal</td>
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<td>Scotland</td>
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<td>Sweden</td>
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<tr>
<td>Poland</td>
<td></td>
</tr>
<tr>
<td>N.Ireland</td>
<td></td>
</tr>
</tbody>
</table>

PESTEL: technological factors

The uncertainty regarding the interconnectedness of ICT followed by admissions data capture were major factors in all countries except Scotland and Sweden. Innovative drug policies were reported as a lower and less consistent factor in management of polypharmacy.
3.5.5 Legal Factors

Legal factors below arose from the study, the relative importance and impact of these external factors on management of polypharmacy are illustrated in the diagrams below.

L1. Legal authorities and regulatory bodies, roles and responsibilities

L1a To what extent would the development of legislation on pharmaceutical pricing and reimbursement criteria and mechanism impact upon polypharmacy to 2025?

L1b To what extent would the existence/implementation of controls on health expenditures and pharmaceuticals impact upon polypharmacy to 2025?

L2. Patients’ rights empowerment:

L2 To what extent would a strengthening of patients’ rights (provision for malpractice etc.) impact upon polypharmacy to 2025?

L3. EU Guidelines

L3 To what extent would the existence of EU guidelines regarding geriatric care impact upon polypharmacy to 2025?
The impact and importance of legal factors was the most variable areas of the analysis. Legislation on pharmaceutical pricing and reimbursement and EU legislation around guidelines for polypharmacy management were seen as significant uncertainties in countries where these do not currently exist.
4 Change management tools and approaches

4.1 Application of Kotter’s eight steps and Simmons questions

What is critical for change is to focus on those characteristics that are influential regarding the introduction and the stability of change in accordance to Kotter’s steps and Simmons questions that test the strategy that is adopted. The choice to follow these two approaches is based on their power as concrete analytical tools, especially for multi-attributed situations like polypharmacy; they are also understandable by the experts and mainly by the people who will undertake the change implementation and, at the same time, they are applicable to all kinds and levels of change, including the large scale ones.

Diagram to show Application of the eight steps in transforming change in Polypharmacy Management:

1 Establishing a sense of urgency
   Communicating to stakeholders the need to change current ways of reviewing medication to benefit patient care- improvement in patient safety and outcomes from medicines. Examining other projects that are developing and whether they pose a threat to the development of the framework. Existing projects may focus on cost efficiencies rather than on patient safety due to budgetary pressures.

2 Forming a powerful guiding coalition
   A project group is assembled including both primary and secondary care clinicians made up of doctors, pharmacists and geriatricians and Long-term Conditions collaborative leads locally and nationally. Have discussions about working together to inform work of Director of Pharmacy and public health both locally and nationally.

3 Creating a vision
   A vision is created as to what the project might achieve for patient care and for the Healthcare Provider. Project plan outlines strategies for achieving the vision.

4 Communicating the vision
   Share this in written communication and have face to face dialogue with people both locally and nationally.

5 Empowering others to act on the vision
   Looking at the obstacles to change the biggest one will be ownership so provide feedback and adaptation of the protocol e.g. link with anticipatory care plans

6 Planning for and creating short-term wins
   To gather data and provide feedback within a relatively short space of time after review framework is piloted; share data from pilots and used to build the business case. Break the project down into smaller tasks so that results can be seen and shared. E.g. design of guidance for review.

7 Consolidating improvements and producing still more change
   Engage with individuals that might influence change in policy to adopt the vision. Transfer of project to other areas to reinvigorate the project e.g. running project in another locality and other health care providers.

8 Institutionalising new approaches
   Sharing of benefits to the new process to the organisation e.g. reduced admissions and improved patient care. Adoption of project into nationally delivered service development, e.g. sharing outcomes with local and national leads on service development.
Diagram to show Application of the Seven Questions Steps in Testing the Strategy:

1. **Who is the primary customer?**
   Communicating to stakeholders - to primary care physicians, strategic planners in the healthcare provider, the need to change current ways of reviewing medication to benefit patient care.

2. **How do core values prioritise the healthcare provider, employees and patients**
   Have assembled a project group including both primary and secondary care and Long-term Conditions collaborative (LTCC) leads locally and nationally and Director of Pharmacy and public health and patients views and experience will inform further development.

3. **What critical performance variables are being tracked?**
   Impact on patients such as hospital admissions, falls and unwanted adverse drug reactions will be tracked and fed back to the decision makers in the health board, strategic planners, financial directors, medical directors.

4. **The strategic boundaries that have been set**
   Scope of project has been clearly identified together with assessment of the best method to deliver; this is not about stopping patients’ medication but to ensure appropriateness of prescribing.

5. **How creative tension has been generated**
   Looking at the obstacles to change the biggest one will be ownership so providing feedback and adaptation of the protocol e.g. link with anticipatory care plans. Nursing staff and physicians are being asked for feedback of effect of medication on patient

6. **Commitment of employees to help each other**
   Support is being provided to primary care physicians to facilitate adaptation of the anticipatory care plans to allow the reviews to take place effectively. A peer review group has been set up with geriatricians, physicians, pharmacists and LTCC who would review the recommendations that are made from the medication reviews.

7. **Strategic uncertainties that could undermine the project**
   Consideration of national services that are being developed have been reviewed in order to produce a framework locally that models the methodology laid out in the project.

### 4.2 PESTEL and SWOT as a tool for CM

**Purpose of PESTEL in SIMPATHY**

The purpose of the PESTEL is two-fold:

1. **To systematically examine the external environment** in which the project exists in order to detect the factors which most impinge upon it. The aim is to capture the impact of these factors on appropriate polypharmacy not only today but also in the future 2025 (for 2025 a Vision has been set). This PESTEL analysis is not only to map the current situation (lines of health care delivery, socio-economic and political factors in each country) and its impact on polypharmacy today, but also what we think could or would impact polypharmacy in the future, under certainty or uncertainty.

2. **To future-proof assessment for Change Management plans** – i.e. so that we are not easily de-railed by changes in the external environment over the period from now until our changes are embedded in all countries (ultimately by 2025). This approach is very important for the Change Management Strategy, since these kinds of programs need time to reward the results and make further adaptations. The 2025 projection, even under uncertainty, would reduce the overall project uncertainty.
In order to help partners to conduct the PESTEL analysis and bearing in mind the necessary objectivity, a template for PESTEL has been prepared along with a guide on how to run the PESTEL workshop and how to facilitate the people to answer it (Annex 3, Page 91).

No formal SWOT analysis template has been provided, since it is thought that, firstly, the detailed recording of factors in PESTEL will guide the SWOT and, secondly, SWOT is intended to be more open for the responders. PESTEL should be the basis of comparisons to identify the common and different factors and their impact when SWOT can be more subjective.

Results of PESTEL and SWOT can be analysed in order to identify the similarities and differences between countries in order to select the common influential factors (both positive and negative). These factors will be the basis of delivering the Change Management strategy that will be the expected result of the part of the program. An overview of tasks involved in Change Management within SIMPATHY are illustrated in the following figures. They illustrate not only all the steps but also combine them with the content expected in each phase. The final realisation of a Model Strategic Plan illustrated will be reported in subsequent reports.

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<tr>
<th>T5.2 PESTEL analysis / T5.3 SWOT analysis</th>
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<tr>
<td>Consultation sessions to partners for PESTEL &amp; SWOT</td>
<td>Apply PESTEL analysis/ case studies</td>
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<tr>
<td>Preparatory work for PESTEL and SWOT</td>
<td>Apply SWOT analysis/ countries</td>
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<td>Explanation sessions, with partners, to facilitate them to use the tools and perform the analyses by themselves, for the case studies and the respective countries.</td>
<td>- Apply PESTEL and SWOT, accordingly, by the partners themselves - grouping and comparing results, to assess CURRENT SITUATION &amp; POTENTIAL INTERVENTIONS</td>
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<td>BUT HOW WE INTERPRETE current situation, as it appears on case studies, and how we BRIDGE it with the FUTURE? WHAT we can learn from the results of the analyses in order to redesign processes WORKSHOP 2: END April</td>
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**SIMPATHY**
**Stimulating Innovation Management of Polypharmacy and Adherence in The Elderly**
**MS16/ M 13:**
**Change management Tools available on SIMPATHY web-site**

**D5.2**
Report on PESTEL and SWOT analyses results. “Diagnosis” of the critical issues and the common barriers and drivers

**D5.3**
Tools "hanged" on the site. Continuity of PESTEL and SWOT performance

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4.3 Communicating the vision

The slide-set included in Annex 2 offer a template for communicating the change management strategy and vision for Management of Polypharmacy. This will be

4.4 Change Management Handbook

The SIMPATHY consortium propose to use elements of the work reported in this deliverable will be used to develop a Change Management Handbook to stimulate and support necessary change in Management of Polypharmacy across the EU. The contents of the handbook have been agreed at a high level to follow the structure below.

CHAPTER ONE
The growing need for improved management of polypharmacy

CHAPTER TWO
Approach to change in the context of multi-medication management

CHAPTER THREE
The polypharmacy management toolbox for the next 15 years
### SWOT ANALYSIS

#### NORTHERN IRELAND

**STRENGTHS**
- During the period 2016-2021 the implementation of regional best practices for managing polypharmacy and adherence will be supported by a number of Government strategies focussing on quality improvement; principally the Medicines Optimisation Quality Framework (MOQF)\(^4\) and Transforming Your Care (TYC)\(^5\).
- An integrated system of health and social care exists aimed at securing improvement in population physical and mental health; prevention, diagnosis and treatment of illness; and social wellbeing.
- Government funding\(^6\) is secured to support the implementation of the MOQF and TYC which will contribute to the enhancement of the integrated care model, involving multi-disciplinary health professionals, enabling more collaborative and patient-centred care, more proactive management of service users and more support for people to live independently.
- Annual clinical medication reviews for all patients are recommended by both the MOQF and NICE Medicines Optimisation Guidance CG5\(^7\).
- An integrated IT infrastructure – the Northern Ireland Electronic Care Record\(^8\) (NIECR) – has been operational since 2013 providing care professionals with a single, comprehensive care record for every service user and aiding better, faster, safer decision-making.
- System integration and simplification are assisted by an electronic Northern Ireland Single Assessment Tool\(^9\) (eNISAT), a standardised, multi-professional assessment tool providing a framework for holistic, person-centred assessment which includes questions relating to medicines adherence.
- There is a skilled health and social care workforce with access to high quality post graduate learning and development.
- Multidisciplinary working is normal practice and prescribing rights are extending to nurses, pharmacists and other allied healthcare professionals.
- All primary care general practices will have a pharmacist employed as part of their multidisciplinary teams by 2020.

**WEAKNESSES**
- There is currently a fragmented approach to polypharmacy and adherence management across the Health and Social Care system
- There is no nationally agreed process for identification, assessment of management of polypharmacy patients.
- Annual clinical medication reviews are not routinely completed for all patients.
- Evidence-based integrated care models are not universal.
- In primary care there is a deficient medicines optimisation system with unclear roles and responsibilities.
- Personal and public involvement (PPI) in service design and development is low.
- Communication across transfers of care is poor; unclear roles & responsibilities
- There is a lack of a full 7 day week system for health and social care
- There is a lack of both technological and human process integration
- Technology deficiencies in ICT connectivity and data analytics exist.
- There is variation in the skill mix and skill sets for polypharmacy and adherence among multidisciplinary teams.

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\(^5\)https://www.dhsspsni.gov.uk/topics/health-policy/transforming-your-care
\(^6\)https://www.dhsspsni.gov.uk/news/hamilton-launches-ps30million-transformation-fund
\(^7\)https://www.nice.org.uk/guidance/ng5
\(^8\)http://www.ehealthandcare.hscni.net/niecr/niecr.aspx
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|         | • There are generic prescribing policies in place and a high level of compliance with a Northern Ireland Drug Formulary[10] informed by clinical evidence and best practices (e.g. NICE).  
• Linked to the MOQF there is a dedicated regional Medicines Optimisation Innovation Centre[11] (MOIC) which aims to develop, test, scale up and market service and technology solutions to improve patient outcomes from medicines.  
• There is cross Government support for medicines optimisation and healthy and active aging with partnerships between the Departments of Health, Economy and Finance.  
• New models of care for medicines optimisation for older people in Care homes and Intermediate Care settings[12] have been tested and will be scaled up nationally.  
• Two pre-commercial procurement projects for medicines optimisation are currently operating which are seeking new technology solutions for medicines adherence.  
• The small size of Northern Ireland and the integrated health and social care system is an advantage for the development and scaling up of good practices that can be shared with other countries.  
• Strong primary care, including community nurses  
• Intellectual potential to implement effective social campaigns.  
• Healthcare professionals have competence to manage polypharmacy.  
• Primary care units have family physician team (includes community nurse and community midwife)  
• Good cooperation of specialists regarding particular cases (e.g. campaign against homeopathy)  
|         | • Lack of pharmacist in family physician’s team  
• Small number of community nurse visits performed in the community  
• Patient’s voice is not taken into consideration by the healthcare system  
• Patient’s ombudsman does not intervene in positive situations (focuses mainly on negative ones)  
|         | • Lack of coordination and fragmented healthcare system  
|         | • Lack of ICT-based information flow  
| POLAND  | • Strong economy: different possibilities of funding specific activities  
• Electronic medical records (often shared between hospital and primary care): medical records are generally organised at regional level  
• National prescription drug database: all pharmacies and healthcare centres have access to the prescription lists of patients  
• Presence of a clinical pharmacy programme: one in Uppsala mostly focussed on elderly care  
• National quality indicators for drug therapy: both general indicators and specifically for elderly  
• National legislation and guidance for medication reviews: according to law all patients 75+ years old with 5+ medications should receive medication review regularly  
• Relative equal healthcare accessibility: 100% coverage  
• Availability of web-based education regarding medication reviews and medication use among elderly: two national web-based education programmes for nurses and physicians (1 day training)  
| SWEEDN  | • Lack of a common vision on how exactly the problem of inappropriate polypharmacy should be tackled (is a medication review the right thing to do?), mainly due to a lack of evidence  
• Not all physicians foresee a strong role for pharmacists, mainly due to a lack of understanding of the pharmacists’ knowledge and competences  
• No national strategy to fully implement and evaluate medication review legislation and policies: no use proper use of change management strategies  
• Relatively few clinical pharmacists currently within the country: the large majority of healthcare centres and hospital clinics don’t have clinical pharmacists  
• No nationally shared medical record system accessible for all healthcare professionals which is unlikely to fully have been implemented by 2025  

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| SCOTLAND | • Medication use in the elderly is on the political agenda: until 2014 accompanied with significant funding  
• Existence of patient committees within the healthcare system at national, regional and local level: have indirectly much influence on policy | • Factor: Policy changes after 2020  
Why: Expected to be relatively stable up to 2020, more uncertainty around scale and acceleration of policy changes after that  
Degree of certainty/impact: L / M  
How (min risk max benefit): ensure PPH is embedded in future policy direction and is seen as part of the patient pathway for integrated care. Would ensure patient and public education alongside raising awareness among politicians. |

| | • Factor: Government stability  
Why: Centralised, tax-based system, dual function of governance and executive agency. Direct impact of policy on practice, high adherence to guidelines, consistency and best practice.  
Degree of certainty/impact: H / L  
How (min risk max benefit): streamlining policy and implementation process; mandate to use public money efficiently | • Factor: Bureaucratic barriers  
Why: involvement of multiple agencies, potential barrier to change and management of PPH; has been observed in the past.  
Degree of certainty/impact: H / H  
How (min risk max benefit): different agencies have different levels of knowledge regarding the benefit of polypharmacy review and may not focus on quality improvement vs financial pressures, as resource is needed to deliver a model that is sustainable. |
| | • Factor: Execution of the governance or decision-making role  
Why: Changes in public bodies would have high impact on implementation of PPH  
Degree of certainty/impact: H / H  
How (min risk max benefit): priorities of governance bodies needs to address & prioritise that PPH is a public health issue that needs to be addressed for long-term patient care, use of resources especially when redesigning services. This would be by considering wider benefits, not just of cost of medication. | • Factor: Accessibility issues  
Why: some groups affected, incl. remote and rural, mobility difficulties, elderly; fewer clinicians delivering reviews  
Degree of certainty/impact: H / H  
How (min risk max benefit): investment in mitigating factors, e.g. telemedicine; predictive modeling to identify affected groups; ensure appropriate skills mix in both urban and rural settings |
| | • Factor: Financial changes (incl. patients’ co-payments, free prescriptions, etc)  
Why: continuation of free prescription certain, financial changes unlikely  
Degree of certainty/impact: H / L  
How (min risk max benefit): even with change in administration, there is likely to be no change in the provision of free prescriptions for those in the most socially deprived groups as admissions can also be caused by non-adherence to medication. | • Factor: Behavioural changes in patients and professionals, incl. individual practitioners  
Why: lack of trust in community pharmacy v GP prescribing? Differences in readiness to accept change (early adopters v laggards)  
Degree of certainty/impact: H / M  
How (min risk max benefit): better communication with patients and clinicians; early adopter champions; awareness campaigns for community pharmacy services |
| | • Factor: Pharmaceutical pricing and the reimbursement system  
Why: Relevant issue in Scotland, with potential changes and likely impact on PPH  
Degree of certainty/impact: M / M  
How (min risk max benefit): the economic crisis has enabled the consideration of appropriate polypharmacy and adherence due not only to increasing costs of medication (and waste of untaken medication) but also to costs of harm as pressures on demand on healthcare increase. Also consider change in reimbursement system for pharmacists so that it is weighted more for clinical service vs volume of items dispensed. | • Factor: ICT infrastructure (cons)  
Why: better integration between community, primary and secondary care data systems needed  
Degree of certainty/impact: H / M  
How (min risk max benefit): Future improvement in integrated ICT platforms; educate healthcare professionals to use these tools; effective and efficient governance system; patient education; liberalisation of data protection laws |
| | • Factor: Relevant education and training  
Why: designed to deliver upon specific objectives, such as best practice intervention (Evidence Based Medicine) or delivery of appropriate PPH reviews  
Degree of certainty/impact: H / H  
How (min risk max benefit): increased investment in training initiatives for future delivery |
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|         | ▪ Factor: Personalised patient and care giver education  
▪ Why: Based on coherent policy objectives; focused on multidisciplinary approaches, training the trainers and public information initiatives  
▪ Degree of certainty/impact: H / v.H  
▪ How (min risk max benefit): increased investment in training initiatives for future delivery | ▪ Factor: Health Systems development and current structure  
▪ Why: Integrated care between community, primary and secondary care  
▪ Degree of certainty/impact: M / H  
▪ How (min risk max benefit): Develop an integrated system, esp. in PHC, potentially with gatekeepers or health care professionals with a central role, who will coordinate communication across disciplines and work towards a holistic view of the patient |
|         | ▪ Factor: ICT infrastructure (pros)  
▪ Why: Fully developed in Scotland incl. electronic prescribing; fully compatible with ICD10; accessible in any settings  
▪ Degree of certainty/impact: H / M  
▪ How (min risk max benefit): maintaining innovation levels (e.g. PPH app) and investment to update. Future improvement in integrated ICT platforms | ▪ Factor: Legal and regulatory framework  
▪ Why: protective to old work manners or exclusive to modern and integrated approaches  
▪ Degree of certainty/impact: H / H  
▪ How (min risk max benefit): Avoid multiple legislative acts that create a vague framework and lead to confusion; provide a framework with long term stability (avoid frequent changes); payment system which takes multimorbidity into consideration |
|         | ▪ Factor: Migration  
▪ Why: net inward migration; no significant impact on healthcare system, positive impact on workforce  
▪ Degree of certainty/impact: M / L  
▪ How (min risk max benefit): sometimes other cultures have different expectations with respect to prescribing so ensure the same principles of evidence based prescribing are applied so that there is a consistent approach. Address cultural issues that might affect adherence. EU referendum and outcome may influence subsequent polices would need to take this into consideration | ▪ Factor: Over prescribing?  
▪ Why: Over-prescribing due to single disease guidelines?  
▪ Degree of certainty/impact: High  
▪ How (min risk max benefit):Clinical guidance is usually focused on the management of single disease. Change the focus here for implementation of holistic reviews as set out in the polypharmacy system which takes multimorbidity into consideration |
| PORTUGAL | ▪ Existence of technologically advanced software to collect patients' data  
▪ Patients' rights legislation  
▪ NHS that provides universal health care | ▪ Lack of coordination between local authorities and the Ministry of Health  
▪ Lack of interconnection between health system data and electronic systems  
▪ Lack of common software in the National Health Systems  
▪ Complex administrative rules on management procedures  
▪ Lack of guidelines for polypharmacy management  
▪ Lack of data for polypharmacy risks  
▪ Poor registry in patients admissions and re-admissions  
▪ Loss of high specialized professionals due to restriction in hiring human resources |
| GERMANY | ▪ Health politics (government) is aware of medication safety issue for patients with polypharmacy and seeks solutions  
▪ The work regulations for pharmacists of 2012 included medication management as a task for the first time.  
▪ The imminent introduction of the e-health card facilitates inter-professional exchange of patient medication data. This may also be helpful for the pharmacists when doing their medication reviews.  
▪ The goal of pharmacists to have an important role in the medication reviews is supported by pharmacists on the national and regional level. There is a vision 2030 for pharmacists. Also there is a guideline for pharmacists on medication management. | ▪ Doctors have not been very active in providing services to ensure medication safety  
▪ Pharmacists have had a rather insignificant role amongst health care leaders in Germany.  
▪ Doctors and pharmacists have competing interest in regard to the medication review. They both want to be remunerated for this service from the health insurance funds.  
▪ At the moment, there is no legal basis stating that pharmacists should do medication reviews – only doctors are mentioned in the SGB V (social code book).  
▪ The Union of Pharmacists and the Chamber of Pharmacists do not have a common plan and one common voice politically.  
▪ The pharmacists need a proper remuneration from the health insurance funds for their services. If this does not happen the good motivation of the pharmacists cannot be upheld. |

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| **SPAIN** | • The Hospital Pharmacists have the right to review the medication before execute it, for the inpatients only,  
- up to the level of the relevancy between prescription and diagnosis or  
- in order to replace prototypes with generics  
• The e-prescription system has been established and accepted; it provides opportunities for further cross check between prescribed medicines –symptoms and overall medication schemes, if improved  
• The culture of accepting Pharmacists as important health professionals is getting stronger and stronger  | • The main criteria, regarding medication policies, is still related to the economic aspects [pricing, reimbursement] than the safety ones  
• The Hospital Pharmacists and the Privately practiced Pharmacists do not have common interests and profile, so this is an issue to be developed  
• There are no Community Pharmacists, under the status and the role they do have in other countries, so, functionally, there is no legislative provision for a professional role to officially run medication review and correct the possible mistakes  
• Doctors and pharmacists have as target to be remunerated for their services (either consultation/ cure or medication delivery) from the health insurance funds. They focus on it..  
• Health Politics [Government] do not seem clearly aware about the polypharmacy and drug safety issue |
| **General** | • Policy:  
  o National legislation and policies mention the need to manage polypharmacy and adherence  
  o Strong vision with the Catalan Health Plan guiding overall health goals of Catalonia  
• Health system structure  
  o Healthcare in Spain is devolved to the autonomous communities, creating a system that facilitates local innovation  
  o Catalonia is further divided into health regions, with local control and contracts between the public payer (CatSalut) and providers specific to the health needs of the local population. This local control again facilitates innovation.  
• Informatics:  
  o Shared electronic medical records facilitating communication between institutions  
  o Electronic prescribing creating record of all medicines prescribed and dispensed  
  o High penetration of electronic medical records and electronic prescribing allows for population level monitoring of some process indicators and multiple outcome indicators  | • Payment structure for community pharmacists is determined by Spanish (central) law and rewards pharmacists for dispensing medications, not for clinical services. This provides a disincentive to participate in any polypharmacy management programmes unless there is funding from the local or regional government  
• There are currently no truly cross-institutional programmes—primary care operates its own system and the institutional model operates theirs, with limited communication  
• Role of different providers  
  o In both the institutional setting and primary care, the role of different health care providers in polypharmacy and adherence is not clearly defined, potentially leading to inconsistent provision of services  |
| **Primary care** | • Pay for performance contract with CatSalut (the public insurer or payer):  
  o Outlines requirement to conduct medication reviews  
  o Also contains other objectives such as control of certain chronic diseases, which promote rational use of medicines  
• Informatics:  
  o Patients requiring a medication review based on the complexity of their chronic disease state are flagged within the electronic medical record  | • Contract with CatSalut  
  o The contract with primary care providers is sometimes seen as overly prescriptive, or as an order coming from management versus an agreement that is reached between management and those providing care  
• Vertical management  
  o The vertical management structure with new initiatives coming from upper management results in less flexibility for programmes to develop at the clinician level  
  o Sometimes the shared vision at the management level is not transmitted to managers and health care providers  
  o Although the programme is designed to be a general medicines review programme taking into account the whole patient, including the patient’s own goals and objective, in practice it becomes a programme focused on narrow safety goals.  
• Resources  |
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| ITALY   | o Decision support software improving safety and appropriateness of prescribing is standard for all providers within the Catalan Institute of Health, the main public providers of health care services.  
- Policy and training:  
  o Specific policies in place outlining the rationale and procedures for conducting medication reviews  
  o Training provided to physicians on utilizing the new training materials  
- Institutional Network Model (hospital, intermediate care, nursing home)  
- Contract with CatSalut  
  o Flexible contract with less specific objectives around polypharmacy management creates environment where local hospitals can develop programmes that meet their needs  
- Institutional Culture: multiple cultural factors were identified within the institutional model that created a fertile environment for a polypharmacy management programme to grow in  
  o Leaders within the institution see their role as facilitating innovation  
  o Shared vision within the institution that the goal is to improve the global patient quality of life—focus is always on patient centred care  
  o “Culture of geriatrics” facilitates multidisciplinary team approach to care  
- Institutional and departmental alliances  
  o Existing institutional alliances facilitated the sharing of resources and information  
  o Strong interdepartmental relationships (pharmacy, geriatrics) facilitate creation of new programmes  
- Resources  
  o Reallocation of resources within pharmacy department facilitated implementation of pilot programme  
- Evaluation  
  o Evaluation of initial programme has shown positive results, supporting efforts to expand the programme  
  o Ongoing research, including the development of a formal research unit within the organization, provide the necessary evaluation to make changes to the programme and justify scale up |
|          | o Physician time: no specific time is allocated to conducting medication reviews, and the work flow of physicians has not been changed to accommodate the new programme  
- Primary care pharmacists: Very few pharmacists are employed in the primary care setting, and many perform duties that could be performed by an administrative staff—these pharmacists are therefore not available to provide much support to the polypharmacy and adherence programme  
- Nurses: the role of nurses in this programme is not clear, although they frequently interact with patients and could represent an untapped resources |
|          | Institutional network  
- Current model is applied in a geriatric setting—efforts to expand to other practice areas have not been successful, possibly due to a different perspective on patient care and use of multidisciplinary teams  
- Evaluation is difficult  
  o The benefit of polypharmacy management comes primarily in the long term, so the immediate benefit to the hospital or intermediate care facility is limited  
  o Resources to conduct evaluation of programme are needed—currently much of the evaluation has come from PhD students and not an institutional approach  
  o No economic evaluation of the programme has been done  
- The success of the current institutional model depends on the complexity of the organization and on personal working relationship (it has been successful in a smaller institution with fewer layers of bureaucracy and closer personal relationships but less successful in a larger organization with more layers of management and politics) |
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| NORTHERN IRELAND| - Government policy is driving an integrated approach across health and social care systems, involving patients and the public and wider stakeholders.  
- The value of health analytics in predicting and managing individual care needs and risk is recognised and developments in this area will facilitate polypharmacy and adherence approaches.  
- As the policy intention is to keep older people at home (including those who are frail) for as long as possible with a reduction in formal care, the importance of support for medicines optimisation through services supporting appropriate polypharmacy and adherence will be assured.  
- TYC’s vision to shift services from acute care to community based care offers real opportunities for clinical pharmacy services in the community.  
- The development of the clinical pharmacy workforce in general practice will be a key enabler of service provision in polypharmacy and adherence.  
- Funding secured for innovation and change programmes for medicines optimisation and the establishment of MOIC will support improvement.  
- Opportunities for shared learning arising from collaborations with other countries through EU programmes, e.g. Horizon 2020, 3rd Health Programme, Interreg.  
- Networking with other countries through the EIP AHA action groups and ECH Alliance and Coral.  
- Personal and Public Involvement (PPI) is now a legislative requirement for Health and Social Care organisations as laid down in the Health and Social Services (Reform) Northern Ireland Act 2009. | - Delivering change will require significant investment.  
- It is difficult to ascertain given the limited evidence available whether the current approaches to polypharmacy management will result in significant improvements in patient outcomes.  
- There is limited evidence of the efficacy of existing solutions for polypharmacy management deployed at population level.  
- The diversity of healthcare systems across EU means that solutions may not be easily transferable between countries.  
- Commissioning in multiple service streams can result in duplicity and confusion over roles and responsibilities for multidisciplinary working.  
- UK exit from the European Union. |
| POLAND          | - Strengthening the role of family physician  
- Well proved effect of mass-media in conducting social campaigns  
- First experiences with pharmaceutical care available  
- Advanced practice nurse – higher level of community nurse  
- Electronic documentation system – ongoing development of nationwide ‘project p1’ | - Excessive complication of healthcare regulations  
- No funding for new activities (e.g. Pharmaceutical care)  
- Lack of staff/ overload with work  
- Pharmaceutical companies and their lobbying  
- Lack of control of sale of medications and diet supplements being made available in places other than pharmacies  
- Lack of specific regulations regarding products other than drugs (e.g. Diet supplements)  
- Lack of culture of adverse drug effects reporting |
| SWEEDN          | - Imbedding a strategy for polypharmacy management in the national strategic plan for medication in general (M)  
- Starting up a clinical pharmacy programme in other parts of the country as well, or significantly increase the output in Uppsala (M)  
- Integration of more clinical pharmacists within multidisciplinary teams: this is currently happening after clinical pharmacists graduate (H)  
- More patient empowerment, demanding interventions targeting polypharmacy: several initiatives have already been taken (H) | - Current inter-professional rivalry will not cease to exist; this seems to be more a generation issue (L)  
- Disability to show significant/relevant positive results on outcome measures with specific interventions: lack of clinical studies showing positive effects, lack of increase in indicator scores (M)  
- Economic crisis, or lack of growth: Sweden is highly dependent on the EU and global economy (M)  
- Growing lack of healthcare professionals due to an increase in elderly patients: this threats is already the reality (H) |
## OPPORTUNITIES

**SCOTLAND**

- **Factor:** Legal and regulatory framework, incl. new GP contract  
  **Why:** GP contract currently under review in Scotland. Will have a significant impact from the clinical pharmacists’ point of view. Opportunity to make framework more conducive to innovation and change in future  
  **Degree of certainty/impact:** M / H  
  **How** (min risk max benefit): Payment for PPH review by GP if made with advice of pharmacists; guideline development, incl. further development of NICE and SIGN; budget controls; benchmarking exercises to assess which areas/specialties etc are associated with increased variation and expenditure  

- **Factor:** Health Systems development; integration of health and social care  
  **Why:** Integrated care between community, primary and secondary care; including the nature of decision making wrt drug prescribing  
  **Degree of certainty/impact:** M / H  
  **How** (min risk max benefit): Develop an integrated system, esp. in PHC, potentially with gatekeepers or health care professionals with a central role, who will coordinate communication across disciplines and work towards a holistic view of the patient; active stakeholder participation  

- **Factor:** Accessibility issues  
  **Why:** Some groups affected, incl. remote and rural, mobility difficulties, elderly; fewer clinicians delivering reviews. Increased access possible through innovation and initiatives such as telehealth and telecare  
  **Degree of certainty/impact:** H / H  
  **How** (min risk max benefit): Investment in mitigating factors, e.g. telemedicine; predictive modeling to identify affected groups; ensure appropriate skills mix in both urban and rural settings; introduction of specific policies for the elderly  

- **Factor:** ICT infrastructure (pros)  
  **Why:** More complete and joined-up electronic patient records through better ICT, data linkage, e.g. on ADRs and hospital admissions  
  **Degree of certainty/impact:** H / H  
  **How** (min risk max benefit): Build on existing systems and maintain innovation levels (e.g. PPH app; electronic health card) and investment to update. Incentives to physicians and other healthcare professionals (e.g. pharmacists) to use these tools

## THREATS

**SCOTLAND**

- **Factor:** More important issues than polypharmacy on the political agenda, such as mass immigration or war (M)  
  **Why:** Any negative media attention due to a specific case in which a certain polypharmacy intervention turns out to be contra-productive (L)  
  **Slow implementation process, not able to reach the goal in 2025: not considered to be an actual threat, however important to keep in mind (H)**

- **Factor:** Future excess demand for health care  
  **Why:** Future trends in morbidity based on current trends, changes in behavior. Uncertainties around increases or decreases in the ratio of hospital beds, the availability of outpatient appointments and non-medical community services relative to the size of the population  
  **Degree of certainty/impact:** L-M / H  
  **How** (min risk max benefit): Predictive modelling of healthcare system, providing adequate funding for anticipated future demand  

- **Factor:** Regional variation in health inequalities and morbidities  
  **Why:** There are known differences in health profiles, inequalities and morbidity levels in different regions, notably Glasgow compared to the rest of Scotland  
  **Degree of certainty/impact:** H / M  
  **How** (min risk max benefit): Resource focus and needs based allocation, future demand modeling  

- **Factor:** Divergence between policy and practice in chronic disease management  
  **Why:** Organisational structures can be barriers to improved collaboration and co-operation among specialists and those who have not traditionally worked together. Where some patient populations are not reviewed to optimise treatment, or there is no clarity in prioritising treatment for those with multiple morbidities or policies exist that encourage single disease management.  
  **Degree of certainty/impact:** H, H  
  **How** (min risk max benefit): Maintain good quality links between policy and healthcare service and between therapeutic specialties in chronic disease management so that clinicians are given flexibility about how they manage people with multiple morbidities.

- **Factor:** Economic growth after 2020  
  **Why:** Less certainty around growth in the medium to long-term, with public sector funding consequences impacting on affordability of healthcare services  
  **Degree of certainty/impact:** L / M  
  **How** (min risk max benefit): Ensure that the triple aim / health economic analysis of services to address appropriate polypharmacy and adherence is supported with evidence through data capture demonstrating sustainability.  

- **Factor:** Demographic trends  
  **Why:** Anticipated that the population of over 65 year olds will increase by 20.1% to 2024. Service is already geared up to take account of the trends
### COUNTRY: PORTUGAL

- Increase of patients' awareness
- Higher society engagement
- Higher attention from the media to health themes
- Research development
- Creation of multidisciplinary teams
- Implementation of polypharmacy guidelines following other partners expertise
- Teaching inappropriate drugs for the elderly in several contexts of the clinical practice

### COUNTRY: GERMANY

- Pharmacists want to have a more clinical role and are very willing to be trained and motivated to perform medication reviews
- Pharmacists want to be health professionals on equal footing with doctors
- At the moment there are good opportunities for pharmacists to co-operate in research projects which are publically funded.

### COUNTRY: GREECE

- Pharmacists want to play a clinical role, under the main motivation to be as closer doctors' power as possible
- They are willing to be trained to adapt better to this role and perform as clinical pharmacists

### OPPORTUNITIES

- Factor: HTA in pharmaceuticals
  - Why: Incorporate HTA in decision making process
  - Degree of certainty/impact: M / M
  - How: Incorporate HTA in decision making process; set up an independent HTA agency; require from manufacturers to exhibit evidence of budget impact and cost effectiveness

- Factor: Attitudes and believes; Behavioural changes in patients and professionals, incl. individual practitioners
  - Why: lack of trust in community pharmacy v GP prescribing? Lack of clinician buy-in to proposed changes due to held beliefs. Differences in readiness to accept change (early adopters v laggards)
  - Degree of certainty/impact: L / M
  - How: better communication with patients and clinicians; early adopter champions; awareness campaigns for community pharmacy services; policy changes led by clinicians and managers

### THREATS

- Degree of certainty/impact: H / L
  - How: Incorporate HTA in decision making process; service is already geared up to take account of the trends

- Factor: Cross-cultural diversities
  - Why: patients’ willingness to take more (or less) drugs or adherence and compliance to treatment
  - Degree of certainty/impact: L / M
  - How: education and empowerment of patient groups so that they understand the benefits of reviews and the benefits and harms due to medicines.

- Factor: Changes in environmental factors
  - Why: Impact on overall demand for healthcare through worsening/lessening of extreme seasonal temperatures, increases/decreases in vector borne diseases or stronger/weaker allergenic episodes due to climatic changes
  - Degree of certainty/impact: L / M
  - How: routine vaccination schemes already in place (incl. seasonal influenza for over 65s)

### OPPORTUNITIES

- Social and Economic Crisis
- Lack of health care professional (GP’s in particular)
- Lack of nurses in Primary Care
- The absence of specific budget allocated to education in the health institutions (hospitals and primary care units)
- Absence of Primary care units in remote regions
- Inequality in the access to health care system
- Insufficient hardware in NHS/health care units
- Reduction of the investment in research/studies
- Immigration of younger qualified generations

### THREATS

- Thus far, data protection laws inhibit a digital exchange of medication data on a patient level. This prevents contracts with the health insurance companies where it is necessary that medication data are exchanged between sectors and professions without a patient consent form for each exchange. The hope is that the upcoming e-health law in Oct 2016 will provide first solutions.

- The lack of co-operative culture among health professionals and organizations, in different levels, may delay the change towards integrated types of care and maintain the silos
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<th>OPPORTUNITIES</th>
<th>THREATS</th>
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| SPAIN   | - The involvement of Pharmacists in projects is quite strong and this may draw an opportunity for the future  
- The economic crisis and the need for quality may lead to a new approach towards accepting the appropriate polypharmacy  
- The development of IT applications may easily support relevant strategies  
|           | **OPPORTUNITIES** | **THREATS** |
|          | - The need to create more efficient systems will spur innovation in both the primary care and institutional settings  
- Professions such as pharmacy and nursing are interested in utilizing their training in different ways—future initiatives that support these organizations professional goals could be successful. Pharmacists in primary care and community are particularly interested in providing different services and in broadening the scope of their practice.  
- European Union funding opportunities align with the priorities of both the regional and local policy makers, and could be used to fund initiative that would support future programme development and expansion  
- An international focus on integrated care or patient medical homes will create momentum for the development and implementation of these programmes.  
|          | - Professional turf wars—physician centred care  
  - Legislation for expanded prescribing rights for nurses has been under development for some time, but has met significant opposition from physicians  
  - Efforts to improve access to services by utilizing different providers could be stymied by various professional organizations. Currently physicians have the most to “lose” and would represent the largest threat  
- Slow economic recovery  
  - Although the Spanish economy is recovering, it still faces many challenges, with no foreseeable significant increases in future healthcare spending. This means that new scale up efforts that require an initial influx of resources before any savings can be realized may not have the necessary funds available.  
  - There is a current imbalance between the rate of growth in health spending and the increase in demand for services  
  - An ageing infrastructure needs to be replace—healthcare cuts associated with the 2008 recession meant many capital expenditures were put on hold. These will need to be addressed and will take money from other areas.  
- Prevailing culture of medicine  
  - Outside of specific disciplines, such as geriatrics, there is not a culture of involving patients in care decisions or in creating multidisciplinary teams. Any new project will need to address the underlying culture that teaches both physicians and patients how they “should” behave.  
- Lack of working relationship between universities and teaching institutions  
  - Training programmes for students, nursing, pharmacy, and medicine, represent an opportunity to shift culture and create a workforce with the skills necessary to adequately manage polypharmacy and adherence. There is currently not a strong working relationship between the university and public health systems, leading to a potential mismatch between the existing and desired skills of current and future professionals. Furthermore, it is unclear if the appropriate professionalization of students, where they learn to see themselves as part of a larger healthcare team is taking place.  
  - Education standards are governed by the European Commission and Spanish (central) law. The latter is especially prescriptive and difficult to change, meaning that universities represent the status quo versus centres of innovation in professional training.  |
### SIMILARITIES

- During the period 2016-2021 the implementation of regional best practices for managing polypharmacy and adherence will be supported by a number of Government strategies focussing on quality improvement; principally the Medicines Optimisation Quality Framework (MOQF) and Transforming Your Care (TYC).
- The work regulations for pharmacists of 2012 included medication management as a task for the first time.
- Healthcare professionals have competence to manage polypharmacy
- Health politics (government) is aware of medication safety issue for patients with polypharmacy and seeks solutions
- Policy: National legislation and policies mention the need to manage polypharmacy and adherence. Strong vision with the Catalan Health Plan guiding overall health goals of Catalonia
- Factor: Government stability

**Why:** Centralised, tax-based system, dual function of governance and executive agency. Direct impact of policy on practice, high adherence to guidelines, consistency and best practice.

**Degree of certainty/impact:** H / L

**How (min risk max benefit):** streamlining policy and implementation process; mandate to use public money efficiently

- Factor: Execution of the governance or decision-making role

**Why:** Changes in public bodies would have high impact on implementation of PPH

**Degree of certainty/impact:** H / H

**How (min risk max benefit):** priorities of governance bodies needs to address & prioritise that PPH is a public health issue that needs to be addressed for long-term patient care, use of resources especially when redesigning services. This would be by considering wider benefits, not just of cost of medication.

- Factor: Financial changes (incl. patients’ co-payments, free prescriptions, etc)

**Why:** continuation of free prescription certain, financial changes unlikely

**Degree of certainty/impact:** H / L

**How (min risk max benefit):** even with change in administration, there is likely to be no change in the provision of free prescriptions for those in the most socially deprived groups as admissions can also be caused by non-adherence to medication

- Factor: Pharmaceutical pricing and the reimbursement system

**Why:** Relevant issue in Scotland, with potential changes and likely impact on PPH

**Degree of certainty/impact:** M / M

**How (min risk max benefit):** the economic crisis has enabled the consideration of appropriate polypharmacy and adherence due not only to increasing costs of medication (and waste of untaken medication) but also to costs of harm as pressures on demand on healthcare increase. Also

### STRENGTHS

- Government funding is secured to support the implementation of the MOQF and TYC which will contribute to the enhancement of the integrated care model, involving multi-disciplinary health professionals, enabling more collaborative and patient-centred care, more proactive management of service users and more support for people to live independently.
- System integration and simplification are assisted by an electronic Northern Ireland Single Assessment Tool (eNISAT), a standardised, multi-professional assessment tool providing a framework for holistic, person-centred assessment which includes questions relating to medicines adherence.
- Linked to the MOQF there is a dedicated regional Medicines Optimisation Innovation Centre (MOIC) which aims to develop, test, scale up and market service and technology solutions to improve patient outcomes from medicines.
- There is cross Government support for medicines optimisation and healthy and active aging with partnerships between the Departments of Health, Economy and Finance.
- Two pre-commercial procurement projects for medicines optimisation are currently operating which are seeking new technology solutions for medicines adherence.

- **Relative equal healthcare accessibility:** 100% coverage
- **Medication use in the elderly is on the political agenda:** until 2014 accompanied with significant funding
- **Existence of patient committees within the healthcare system at national, regional and local level:** have indirectly much influence on policy

- **Factor:** Migration

**Why:** net inward migration; no significant impact on healthcare system, positive impact on workforce

**Degree of certainty/impact:** M / L

**How (min risk max benefit):** sometimes other cultures have different expectations with respect to prescribing so ensure the same principles of evidence based prescribing are applied so that there is a consistent approach. Address cultural issues that might affect adherence. EU referendum and outcome may influence so subsequent polices would need to take this into consideration.

- **Institutional Network Model (hospital, intermediate care, nursing home)**

**Contract with CatSalut**

Flexible contract with less specific objectives around polypharmacy management creates environment where local hospitals can develop programmes that meet their needs

**Institutional Culture:** multiple cultural factors were identified within the institutional model that created a fertile environment for a polypharmacy management programme to grow in

**Leaders within the institution see their role as facilitating innovation**

**Shared vision within the institution that the goal is to improve the global patient quality of life—focus is always on patient centred care**

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consider change in reimbursement system for pharmacists so that it is weighted more for clinical service vs volume of items dispensed.

- An integrated system of health and social care exists aimed at securing improvement in population physical and mental health; prevention, diagnosis and treatment of illness; and social wellbeing.
- Intellectual potential to implement effective social campaigns. Good cooperation of specialists regarding particular cases (e.g. campaign against homeopathy)
- NHS that provides universal health care
- Annual clinical medication reviews for all patients are recommended by both the MOQF and NICE Medicines Optimisation Guidance CG5.

- An integrated IT infrastructure – the Northern Ireland Electronic Care Record (NIECR) – has been operational since 2013 providing care professionals with a single, comprehensive care record for every service user and aiding better, faster, safer decision-making.
- Electronic medical records (often shared between hospital and primary care): medical records are generally organised at regional level
- Factor: ICT infrastructure (pros)
- Why: Fully developed in Scotland incl. electronic prescribing; fully compatible with ICD10; accessible in any settings
- Degree of certainty/impact: H / M
- How (min risk max benefit): maintaining innovation levels (e.g. PPH app) and investment to update. Future improvement in integrated ICT platforms
- Existence of technologically advanced software to collect patients’ data
- Informatics: Shared electronic medical records facilitating communication between institutions, Electronic prescribing creating record of all medicines prescribed and dispensed, High penetration of electronic medical records and electronic prescribing allows for population level monitoring of some process indicators and multiple outcome indicators
- The imminent introduction of the e-health card facilitates inter-professional exchange of patient medication data. This may also be helpful for the pharmacists when doing their medication reviews.

- There is a skilled health and social care workforce with access to high quality post graduate learning and development.
- Training provided to physicians on utilizing the new training materials
- Availability of web-based education regarding medication reviews and medication use among elderly: two national web-based education programmes for nurses and physicians (1 day training)
- Factor: Relevant education and training
  Why: designed to deliver upon specific objectives, such as best practice intervention (Evidence Based Medicine) or delivery of appropriate PPH reviews
  Degree of certainty/impact: H / H
  How (min risk max benefit): increased investment in training initiatives for future delivery

"Culture of geriatrics" facilitates multidisciplinary team approach to care
The e- prescription system has been established and accepted; it provides opportunities for further cross check between prescribed medicines – symptoms and overall medication schemes, if improved

- The culture of accepting Pharmacists as important health professionals is getting stronger and stronger
• All primary care general practices will have a pharmacist employed as part of their multidisciplinary teams by 2020.
• Strong primary care, including community nurses Primary care units have family physician team (includes community nurse and community midwife)
• Pay for performance contract with CatSalut (the public insurer or payer):
  o Outlines requirement to conduct medication reviews
  o Also contains other objectives such as control of certain chronic diseases, which promote rational use of medicines

There are generic prescribing policies in place and a high level of compliance with a Northern Ireland Drug Formulary informed by clinical evidence and best practices (e.g. NICE).
National prescription drug database: all pharmacies and healthcare centres have access to the prescription lists of patients.
Patients requiring a medication review based on the complexity of their chronic disease state are flagged within the electronic medical record
Decision support software improving safety and appropriateness of prescribing is standard for all providers within the Catalan Institute of Health, the main public providers of health care services.

• New models of care for medicines optimisation for older people in Care homes and Intermediate Care settings have been tested and will be scaled up nationally.
• Presence of a clinical pharmacy programme: one in Uppsala mostly focussed on elderly care. National quality indicators for drug therapy: both general indicators and specifically for elderly.
National legislation and guidance for medication reviews: according to law all patients 75+ years old with 5+ medications should receive medication review regularly.
• Factor: Personalised patient and care giver education
  Why: Based on coherent policy objectives; focused on multidisciplinary approaches, training the trainers and public information initiatives
  Degree of certainty/impact: H / v.H
  How (min risk max benefit): increased investment in training initiatives for future delivery

- The Hospital Pharmacists have the right to review the medication before execute it, for the inpatients only, up to the level of the relevancy between prescription and diagnosis or in order to replace prototypes with generics
- The goal of pharmacists to have an important role in the medication reviews is supported by pharmacists on the national and regional level. There is a vision 2030 for pharmacists. Also there is a guideline for pharmacists on medication management
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<td>- There is currently a fragmented approach to polypharmacy and adherence management across the Health and Social Care system. There is no nationally agreed process for identification, assessment of management of polypharmacy patients.</td>
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<td>- Lack of a common vision on how exactly the problem of inappropriate polypharmacy should be tackled (is a medication review the right thing to do?), mainly due to a lack of evidence No national strategy to fully implement and evaluate medication review legislation and policies: no use proper use of change management strategies</td>
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| - Factor: Policy changes after 2020  
  Why: Expected to be relatively stable up to 2020, more uncertainty around scale and acceleration of policy changes after that |
| - Lack of pharmacist in family physician’s team  
  Relative few clinical pharmacists currently within the country: the large majority of healthcare centres and hospital clinics don’t have clinical pharmacists. Not all physicians foresee a strong role for pharmacists, mainly due to a lack of understanding of the pharmacists’ knowledge and competences. |
| - Annual clinical medication reviews are not routinely completed for all patients.  
  Factor: ICT infrastructure (cons)  
  Why: better integration between community, primary and secondary care data systems needed |
| - Lack of ICT-based information flow |
| - No nationally shared medical record system accessible for all healthcare professionals which is unlikely to fully have been implemented by 2025.  
  Lack of ICT-based information flow |
| - Factor: Legal and regulatory framework  
  Why: protective to old work manners or exclusive to modern and integrated approaches |
| - Factor: Over prescribing?  
  Why: Over-prescribing due to single disease guidelines? |
| - There is variation in the skill mix and skill sets for polypharmacy and adherence among multidisciplinary teams.  
  Patient’s voice is not taken into consideration by the healthcare system  
  Small number of community nurse visits performed in the community |
| - Factor: Behavioural changes in patients and professionals, incl. individual practitioners  
  Why: lack of trust in community pharmacy v GP prescribing? Differences in readiness to accept change (early adopters v laggards)  
  Degree of certainty/impact: M / M |
| - Factor: Bureaucratic barriers  
  Why: involvement of multiple agencies, potential barrier to change and management of PPH; has been observed in the past.  
  Degree of certainty/impact: H / H |
| - Factor: Accessibility issues  
  Why: some groups affected, incl. remote and rural, mobility difficulties, elderly; fewer clinicians delivering reviews  
  Degree of certainty/impact: H / H |
| - Factor: Over prescribing?  
  Why: Over-prescribing due to single disease guidelines?  
  Degree of certainty/impact: High  
  How (min risk max benefit): Clinical guidance is usually focused on the management of single disease. Change the focus here for implementation of holistic reviews as set out in the polypharmacy guidance, but also consider questions in 7 step process when initiating treatment. In parallel development of guidance should address multiple morbidity. Doctors have not been very active in providing services to ensure medication safety |
| - Factor: Legal and regulatory framework  
  Why: protective to old work manners or exclusive to modern and integrated approaches |
| - Factor: Over prescribing?  
  Why: Over-prescribing due to single disease guidelines? |
| - Evidence-based integrated care models are not universal.  
  In primary care there is a deficient medicines optimisation system with unclear roles and responsibilities.  
  Complex administrative rules on management procedures, |
| - Factor: Over prescribing?  
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### WEAKNESSES

**Similarities**

- Pharmacists have had a rather insignificant role amongst health care leaders
  - Personal and public involvement (PPI) in service design and development is low.
  - Communication across transfers of care is poor; unclear roles & responsibilities
  - Lack of coordination between local authorities and the Ministry of Health
  - Lack of interconnection between health system data and electronic systems
    - There is a lack of both technological and human process integration
    - Technology deficiencies in ICT connectivity and data analytics exist.
    - Lack of common software in the National Health Systems

**Differences**

- The Union of Pharmacists and the Chamber of Pharmacists do not have a common plan and one common voice politically.
  - Payment structure for community pharmacists is determined by Spanish (central) law and rewards pharmacists for dispensing medications, not for clinical services. This provides a disincentive to participate in any polypharmacy management programmes unless there is funding from the local or regional government
  - Vertical management
    - The vertical management structure with new initiatives coming from upper management results in less flexibility for programmes to develop at the clinician level
    - Sometimes the shared vision at the management level is not transmitted to managers and health care providers
    - Although the programme is designed to be a general medicines review programme taking into account the whole patient, including the patient’s own goals and objective, in practice it becomes a programme focused on narrow safety goals.
    - Primary care pharmacists: Very few pharmacists are employed in the primary care setting, and many perform duties that could be performed by an administrative staff—these pharmacists are therefore not available to provide much support to the polypharmacy and adherence programme
    - Nurses: the role of nurses in this programme is not clear, although they frequently interact with patients and could represent an untapped resources

**Institutional network**

- Current model is applied in a geriatric setting—efforts to expand to other practice areas have not been successful, possibly due to a different perspective on patient care and use of multidisciplinary teams
- Evaluation is difficult
  - The benefit of polypharmacy management comes primarily in the long term, so the immediate benefit to the hospital or intermediate care facility is limited
  - Resources to conduct evaluation of programme are needed—currently much of the evaluation has come from PhD students and not an institutional approach
  - No economic evaluation of the programme has been done
- The success of the current institutional model depends on the complexity of the organization and on personal working relationship (it has been successful in a smaller institution with fewer layers of bureaucracy and closer personal relationships but less successful in a larger organization with more layers of management and politics)
  - The main criteria, regarding medication policies, is still related to the economic aspects (pricing, reimbursement) than the safety ones
  - The Hospital Pharmacists and the Privately practiced Pharmacists do not have common interests and profile, so this is an issue to be developed
  - There are no Community Pharmacists, under the status and the role they do have in other countries, so, functionally, there is no legislative provision for a professional role to officially run medication review and correct the possible mistakes
  - Doctors and pharmacists have as target to be remunerated for their services (either consultation/ cure or medication delivery) from the health insurance funds. They focus on it.
### SIMILARITIES

- Government policy is driving an integrated approach across health and social care systems, involving patients and the public and wider stakeholders. The value of health analytics in predicting and managing individual care needs and risk is recognised and developments in this area will facilitate polypharmacy and adherence approaches.
- Imbedding a strategy for polypharmacy management in the national strategic plan for medication in general.
- Factor: Health Systems development; integration of health and social care

Why: Integrated care between community, primary and secondary care; including the nature of decision making with regard to drug prescribing

Degree of certainty/impact: M / H

How (min risk max benefit): Develop an integrated system, esp. in PHC, potentially with gatekeepers or health care professionals with a central role, who will coordinate communication across disciplines and work towards a holistic view of the patient; active stakeholder participation.

- The development of the clinical pharmacy workforce in general practice will be a key enabler of service provision in polypharmacy and adherence.
- Pharmacists want to play a clinical role, under the main motivation to be as closer doctors’ power as possible. They are willing to be trained to adapt better to this role and perform as clinical pharmacists. Pharmacists want to be health professionals on equal footing with doctors.
- The involvement of Pharmacists in projects is quite strong and this may draw an opportunity for the future.

### OPPORTUNITIES

- As the policy intention is to keep older people at home (including those who are frail) for as long as possible with a reduction in formal care, the importance of support for medicines optimisation through services supporting appropriate polypharmacy and adherence will be assured.
- TYC’s vision to shift services from acute care to community based care offers real opportunities for clinical pharmacy services in the community.
- Funding secured for innovation and change programmes for medicines optimisation and the establishment of MOIC will support improvement.
- Opportunities for shared learning arising from collaborations with other countries through EU programmes, e.g. Horizon 2020, 3rd Health Programme, Interreg.
- Networking with other countries through the EIP AHA action groups and ECH Alliance and Coral.
- Personal and Public Involvement (PPI) is now a legislative requirement for Health and Social Care organisations as laid down in the Health and Social Services (Reform) Northern Ireland Act 2009.
- The economic crisis and the need for quality may lead to a new approach towards accepting the appropriate polypharmacy

- Strengthening the role of family physician
- Well proved effect of mass-media in conducting social campaigns
- First experiences with pharmaceutical care available
- Advanced practice nurse – higher level of community nurse

- Starting up a clinical pharmacy programme in other parts of the country as well, or significantly increase the output in Uppsala (M)
- Integration of more clinical pharmacists within multidisciplinary teams: this is currently happening after clinical pharmacists graduate (H)
- More patient empowerment, demanding interventions targeting polypharmacy: several initiatives have already been taken (H)
- Connecting medical record systems across all relevant stakeholders, incl. patients: not expected to be fully implemented by 2025 (M)

- Factor: Legal and regulatory framework, incl. new GP contract

Why: GP contract currently under review in Scotland. Will have a significant impact from the clinical pharmacists’ point of view. Opportunity to make framework more conducive to innovation and change in future

Degree of certainty/impact: M / H

### DIFFERENCES

- As the policy intention is to keep older people at home (including those who are frail) for as long as possible with a reduction in formal care, the importance of support for medicines optimisation through services supporting appropriate polypharmacy and adherence will be assured.
- TYC’s vision to shift services from acute care to community based care offers real opportunities for clinical pharmacy services in the community.
- Funding secured for innovation and change programmes for medicines optimisation and the establishment of MOIC will support improvement.
- Opportunities for shared learning arising from collaborations with other countries through EU programmes, e.g. Horizon 2020, 3rd Health Programme, Interreg.
- Networking with other countries through the EIP AHA action groups and ECH Alliance and Coral.
- Personal and Public Involvement (PPI) is now a legislative requirement for Health and Social Care organisations as laid down in the Health and Social Services (Reform) Northern Ireland Act 2009.
- The economic crisis and the need for quality may lead to a new approach towards accepting the appropriate polypharmacy

- Strengthening the role of family physician
- Well proved effect of mass-media in conducting social campaigns
- First experiences with pharmaceutical care available
- Advanced practice nurse – higher level of community nurse

- Starting up a clinical pharmacy programme in other parts of the country as well, or significantly increase the output in Uppsala (M)
- Integration of more clinical pharmacists within multidisciplinary teams: this is currently happening after clinical pharmacists graduate (H)
- More patient empowerment, demanding interventions targeting polypharmacy: several initiatives have already been taken (H)
- Connecting medical record systems across all relevant stakeholders, incl. patients: not expected to be fully implemented by 2025 (M)

- Factor: Legal and regulatory framework, incl. new GP contract

Why: GP contract currently under review in Scotland. Will have a significant impact from the clinical pharmacists’ point of view. Opportunity to make framework more conducive to innovation and change in future

Degree of certainty/impact: M / H
<table>
<thead>
<tr>
<th>Factor: ICT infrastructure (pros)</th>
<th>Why: More complete and joined-up electronic patient records through better ICT, data linkage, e.g. on ADRs and hospital admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of certainty/impact: H / H</td>
<td>How (min risk max benefit): build on existing systems and maintain innovation levels (e.g. PPH app; electronic health card) and investment to update. Incentives to physicians and other healthcare professionals (e.g. pharmacists) to use these tools</td>
</tr>
<tr>
<td>Factor: Accessibility issues</td>
<td>Why: some groups affected, incl. remote and rural, mobility difficulties, elderly; fewer clinicians delivering reviews. Increased access possible through innovation and initiatives such as telehealth and telecare</td>
</tr>
<tr>
<td>Degree of certainty/impact: H / H</td>
<td>How (min risk max benefit): investment in mitigating factors, e.g. telemedicine; predictive modeling to identify affected groups; ensure appropriate skills mix in both urban and rural settings; introduction of specific policies for the elderly</td>
</tr>
<tr>
<td>Factor: HTA in pharmaceuticals</td>
<td>Why: Incorporate HTA in decision making process</td>
</tr>
<tr>
<td>Degree of certainty/impact: M / M</td>
<td>How (min risk max benefit): Incorporate HTA in decision making process; set up an independent HTA agency; require from manufacturers to exhibit evidence of budget impact and cost effectiveness</td>
</tr>
<tr>
<td>Factor: Attitudes and believes; Behavioural changes in patients and professionals, incl. individual practitioners</td>
<td>Why: lack of trust in community pharmacy v GP prescribing? Lack of clinician buy-in to proposed changes due to held beliefs. Differences in readiness to accept change (early adopters v laggards)</td>
</tr>
<tr>
<td>Degree of certainty/impact: L / M</td>
<td>How (min risk max benefit): better communication with patients and clinicians; early adopter champions; awareness campaigns for community pharmacy services; policy changes led by clinicians and managers.</td>
</tr>
</tbody>
</table>

- Professions such as pharmacy and nursing are interested in utilizing their training in different ways—future initiatives that support these organizations professional goals could be successful. Pharmacists in primary care and community are particularly interested in providing different services and in broadening the scope of their practice.
## SIMILARITIES
- It is difficult to ascertain given the limited evidence available whether the current approaches to polypharmacy management will result in significant improvements in patient outcomes.
- There is limited evidence of the efficacy of existing solutions for polypharmacy management deployed at population level.

## DIFFERENCES
- The diversity of healthcare systems across EU means that solutions may not be easily transferable between countries.
- Commissioning in multiple service streams can result in duplicity and confusion over roles and responsibilities for multidisciplinary working.

<table>
<thead>
<tr>
<th>Threats</th>
<th>Diffusion of disease</th>
<th>Threats to sustainability</th>
<th>Implementation timelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic crisis, or lack of growth</td>
<td>Sweden is highly dependent on the EU and global economy</td>
<td>Delivery change will require significant investment</td>
<td>Economic crisis, or lack of growth</td>
</tr>
<tr>
<td>No funding for new activities</td>
<td>Pharmaceutical care</td>
<td>Delivered changes will require significant investment</td>
<td>No funding for new activities</td>
</tr>
<tr>
<td>Disability to show significant/relevant positive results on outcome measures with specific interventions</td>
<td>Lack of clinical studies showing positive effects, lack of increase in indicator scores</td>
<td>The lack of co-operative culture among health professionals and organizations, in different levels, may delay the change towards integrated types of care and maintain the silos</td>
<td>Disability to show significant/relevant positive results on outcome measures with specific interventions</td>
</tr>
<tr>
<td>Excessive complication of healthcare regulations</td>
<td>Lack of staff/ overload with work</td>
<td>Lack of health care professional (GP’s in particular)</td>
<td>Excessive complication of healthcare regulations</td>
</tr>
<tr>
<td>Lack of nurses in Primary Care</td>
<td>Lack of control of sale of medications and diet supplements being made available in places other than pharmacies</td>
<td>Lack of specific regulations regarding products other than drugs (e.g. Diet supplements)</td>
<td>Lack of nurses in Primary Care</td>
</tr>
<tr>
<td>Lack of culture of adverse drug effects reporting</td>
<td>Factor: Demographic trends</td>
<td>Why: Anticipated that the population of over 65 year olds will increase by 20.1% to 2024. Service is already geared up to take account of the trends</td>
<td>Lack of culture of adverse drug effects reporting</td>
</tr>
</tbody>
</table>

## Economy
- Economic crisis, or lack of growth: Sweden is highly dependent on the EU and global economy (M)
### SIMILARITIES

- Growing lack of healthcare professionals due to an increase in elderly patients: this threat is already the reality
- The absence of specific budget allocated to education in the health institutions (hospitals and primary care units)
- Absence of Primary care units in remote regions
- Reduction of the investment in research/studies

### DIFFERENCES

<table>
<thead>
<tr>
<th>THREATS</th>
<th>DIFFERENCES</th>
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<tbody>
<tr>
<td>How (min risk max benefit): ensure that the triple aim / health economic analysis of services to address appropriate polypharmacy and adherence is supported with evidence through data capture demonstrating sustainability.</td>
<td></td>
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</tbody>
</table>
| o Factor: Cross-cultural diversities
| Why: patients’ willingness to take more (or less) drugs or adherence and compliance to treatment Degree of certainty/impact: L / M |
| How (min risk max benefit): education and empowerment of patient groups so that they understand the benefits of reviews and the benefits and harms due to medicines. |
| o Factor: Changes in environmental factors
| Why: Impact on overall demand for healthcare through worsening/lessening of extreme seasonal temperatures, increases/decreases in vector borne diseases or stronger/weaker allergenic episodes due to climatic changes Degree of certainty/impact: L / M |
| How (min risk max benefit): routine vaccination schemes already in place (incl. seasonal influenza for over 65s) |
| Immigration of younger qualified generations |
| Professional turf wars—physician centred care
| o Legislation for expanded prescribing rights for nurses has been under development for some time, but has met significant opposition from physicians
| o Efforts to improve access to services by utilizing different providers could be stymied by various professional organizations. Currently physicians have the most to "lose" and would represent the largest threat |
| Lack of working relationship between universities and teaching institutions
| o Training programmes for students, nursing, pharmacy, and medicine, represent an opportunity to shift culture and create a workforce with the skills necessary to adequately manage polypharmacy and adherence. There is currently not a strong working relationship between the university and public health systems, leading to a potential mismatch between the existing and desired skills of current and future professionals. Furthermore, it is unclear if the appropriate professionalization of students, where they learn to see themselves as part of a larger healthcare team is taking place. |
| o Education standards are governed by the European Commission and Spanish (central) law. The latter is especially prescriptive and difficult to change, meaning that universities represent the status quo versus centres of innovation in professional training. |
| Prevailing culture of medicine
| o Outside of specific disciplines, such as geriatrics, there is not a culture of involving patients in care decisions or in creating multidisciplinary teams. Any new project will need to address the underlying culture that teaches both physicians and patients how they “should” behave. |
### IMPACT –P/N- CERTAINTY

| Country          | P1. Health services delivery/Health services network and coordination of services (The extent to which different parts of the PHC - Ambulatory Care - Hospital Care system are connected. Keep in mind "who prescribes, who has the right to give drugs?") | To what extent will the degree of networking, integration/fragmentation of health care delivery "lines" across your country IMPACT in the management of polypharmacy to 2025? | A) Public sector | To what extent would a trend (increasing or decreasing) in the ratio of hospital beds per inhabitants impact upon polypharmacy to 2025? | B) Private sector | To what extent would a trend (increasing or decreasing) in the number of doctors practising privately impact on the management of polypharmacy to 2025? | C) Family Care Units | To what extent would a trend (increasing or decreasing) in the prevalence of General Practice/Primary care Units impact on the management of polypharmacy to 2025? | P2. Primary health care - Chronic disease management | To what extent will levels of coordination/independence between service lines be a factor in the management of polypharmacy to 2025? | To what extent will specific health policies for the elderly be a factor in the overall management of polypharmacy to 2025? | P3. Governance structure/ decision making and resulting impact (Keep in mind decision making on pharmaceuticals and service lines, who decides for regulations on prescribing system, pharmacies function, family health units, guidelines and outcomes assessment, controlling, cost measures etc.) | To what extent will the degree to which centrally devised policy is adhered and implemented at different levels impact upon the management of polypharmacy? | Ø Ministry of Health? | Ø Regional Health Authorities? |
|------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|--------------------------|
| N. Ireland       | 5-P-4                                                                           | 5-P-4                                                                                            | 4-P-2            | 5-P-5                                                                                            | 2-P-2            | 2-P/N-1                                                                                            | 2-P-2            | 1-P-4                                                                                            | 1-P-4            | 2-P/N-1                                                                                            | 1-P-4            | 4-P-4                                                                                            | 5-P-4            | 5-P-N1                                                                                             | 5-P-4            | 5-P-N1              |
| Poland           | 5-N-5                                                                           | 5-P-4                                                                                            |                  | 2-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Sweden           | 5-P-4                                                                           | 4-3                                                                                             |                  | 2-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Scotland         | 5-P-2                                                                           | 5-P-3                                                                                            |                  | 5-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Portugal         | 4-3                                                                             | 5-P-3                                                                                            |                  | 5-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Germany          | 5-P-3                                                                           | 5-P-5                                                                                            |                  | 5-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Catalonia        | 5-P-5                                                                           | 5-P-5                                                                                            |                  | 5-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Greece           | 5-P                                                                              | 5-P-5                                                                                            |                  | 5-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |
| Italy            | 5-P                                                                              | 5-P-5                                                                                            |                  | 5-P-2                                                                                            | 2-P/N-1          | 5-P-5                                                                                            |                  | N/A                                                                                            |                  | 2-P-2                                                                                            | 1-P-4            | 4-P-4                                                                                            |                  | N/A                                                                  |                  | 3-P-2                 |

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Ø Other regulatory bodies in Pharma-sector decision making?

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<tr>
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<tbody>
<tr>
<td>Ø Other regulatory bodies in Pharma-sector decision making?</td>
<td>5-P-5</td>
<td>1-P-5</td>
<td>2-P-4</td>
<td>4-5</td>
<td>5-P-2</td>
<td>5-P-4</td>
<td>5-P-4</td>
<td>3-P-4</td>
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</tbody>
</table>

P4. Corruption level

To what extent will the influence of pharmaceutical companies and the provision of prescribing incentives impact upon the management of polypharmacy to 2025?

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<tbody>
<tr>
<td>To what extent will the influence of pharmaceutical companies and the provision of prescribing incentives impact upon the management of polypharmacy to 2025?</td>
<td>5-N-1</td>
<td>5-N-5</td>
<td>1-4</td>
<td>3–P-4</td>
<td>1 to 2-P-5</td>
<td>4-P-4</td>
<td>5-P-5</td>
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</tbody>
</table>

**ECONOMIC FACTORS’ IMPACT LEVEL IN POLYPHARMACY**

**IMPACT –P/N- CERTAINTY**

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<tbody>
<tr>
<td>E1. Overall economic success</td>
<td></td>
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<tr>
<td>To what extent will the current trajectory of growth (or lack of it) in the economy impact upon the management of polypharmacy to 2025?</td>
<td>S-P</td>
<td>3-P-2</td>
<td>3-5</td>
<td>4-P-4</td>
<td>1-P&amp;N-2</td>
<td>4-P/N-5</td>
<td>5-N-3</td>
<td>5-P-4</td>
<td></td>
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<tr>
<td>E2. Health system’s structure and financing</td>
<td></td>
<td></td>
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<tr>
<td>To what extent would an increase in the number of inhabitants who have covered access to health care services (including demographic changes and the impact of an ageing population) be a factor in the management of polypharmacy to 2025?</td>
<td>NA</td>
<td>4-P-3</td>
<td>4-N-4</td>
<td>4-5</td>
<td>3-P-3</td>
<td>5-P/N-5</td>
<td>4-P-3</td>
<td>5-N-4</td>
<td></td>
</tr>
</tbody>
</table>
### SOCIAL FACTORS' IMPACT LEVEL IN POLYPHARMACY

#### IMPACT --P/N-- CERTAINTY

<table>
<thead>
<tr>
<th>N. Ireland</th>
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<tbody>
<tr>
<td>5-P-5</td>
<td>4-P-4</td>
<td>2-N-3</td>
<td>3-5</td>
<td>5-5</td>
<td>5-N-4</td>
<td>4-P-4</td>
<td>5-P-5</td>
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</tr>
</tbody>
</table>

To what extent would access to health care services (easy/difficult) for patients living in remote areas be a factor influencing polypharmacy management to 2025?

To what extent would access to health care services (easy/difficult) for specific population groups (e.g., the elderly) be a factor influencing polypharmacy management to 2025?

5-P

5-P-4

5-2-N-3

5-3-5

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## TECHNICAL FACTORS' IMPACT LEVEL IN POLYPHARMACY

### IMPACT –P/N- CERTAINTY

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### POLITICAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

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| **P1. Health services delivery/Health services network and coordination of services (The extent to which different parts of the PHC - Ambulatory Care - Hospital Care system are connected. Keep in mind “who prescribes, who has the right to give drugs?”)** | • In the period to 2025 the management of polypharmacy will be positively impacted by a high degree of integration and low level of fragmentation across health and social care services in Northern Ireland. This will be driven by a strategic agenda for transformation, which will include the Medicines Optimisation Quality Framework. Services will be delivered by a multi-skilled medical and non-medical prescribing workforce with pharmacists involved care pathways in all settings.  
• Impact negative in terms of fragmentation  
• We consider this as a core factor in the management of polypharmacy in the elderly. Many problems occur in transition and communication between different parts of the healthcare system. We already see a positive trend concerning different parts of the system getting connected better through transinstitutional programmes and shared information (e.g. medical records) and actions (multidisciplinary teams). There is a high degree of consensus about the importance of this issue. Efforts at national, regional and local level are made to improve integrated care.  
• GP contract and H&S care - high from clinical pharmacists point of view. Influence of funding from councils, access to care homes. Interaction between primary care and social perspective is important.  
• The group was crystal clear about the fact that fragmentation of health care services across the different levels of care in our health system was an important theme. There was agreement about the fact that more integration has a positive impact and that the level of certainty of this statement was very high. The group was also positive about the fact the the trend towards more integration is clear.  
• Medicines Optimisation Quality Framework. Services will be delivered by a multi-skilled medical and non-medical prescribing workforce with pharmacists involved care pathways in all settings. **Impact negative in terms of fragmentation**.  
• There is a high degree of consensus across different stakeholder groups about the importance of this issue. Efforts at national, regional and local level are made to improve integrated care.  
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| **B) Private sector** | • A high increase in private health and social care provision is not predicted in Northern Ireland during the period to 2025. Therefore this is not a significant factor for the management of polypharmacy.  
• Positive only if there is consensus between healthcare professionals  
• This is a complex issue in Sweden. It is hard to define whether solely an increase or decrease will have a positive or negative influence. It mainly depends on the collaboration, communication and contracts these private practices will have with each other, non-private practices and county councils. Next to that it depends on the extent to which investors/shareholders place short term revenues above quality of care.  |
| **c) Family Care Units** | • In terms of reduction of GP practices/units.  
• In the past years the number of primary care practices in Sweden has increased due to the fact that it is now obligatory to be registered at a primary care practice. With an expected increase in population, but a scarcity of healthcare professionals at the same time, we expect a decrease in the number of healthcare professionals/units per inhabitant. This will put pressure on the accessibility of high quality healthcare. It is unclear to what extent this expected decrease in accessibility will be prevented by attracting more healthcare professionals and developing more efficient healthcare processes (i.e. using IT, self-management).  |
| **P2. Primary health care - Chronic disease management** | • In primary care there is a low level of divergence between recommended and actual practice in the treatment of diabetes, hypertension and CDH. This is because primary care practitioners comply with national guidance (NICE) and have a high level of compliance with the Northern Ireland Drug Formulary which is informed by NICE. Health and social care services are integrated in Northern Ireland and multidisciplinary integrated care partnerships exist across Northern Ireland which inform commissioning priorities based on the needs of local communities. Policy support for the management of polypharmacy will come from the Medicines Optimisation Quality Framework.  
• It is essential that policy and practice correspond with each other. Constant evaluation, monitoring and change within both policy and practice can have a significant impact. There seems to be a slow trend in a positive direction with more use of indicators and more communication between policymakers and healthcare providers. Too much bureaucracy and unflexible policy and practice are threats to a positive impact. More knowledge and actions targeting this issue can have great impact. In the past decades, several policies have been developed. These will be further developed and evaluated. Evaluation and adjustment of existing policies are planned/currently ongoing.  |
To what extent will specific health policies for the elderly be a factor in the overall management of polypharmacy to 2025?

P3. Governance structure/decision making and resulting impact (Keep in mind decision making on pharmaceuticals and service lines, who decides for regulations on prescribing system, pharmacies function, family health units, guidelines and outcomes assessment, controlling, cost measures etc.)

- The introduction of consistent regional practice to support the management of polypharmacy has Government support through the Department of Health as evidenced by the Medicines Optimisation Quality Framework. Implementation of the Framework will be supported by regional Health Trusts, Local Commissioning Groups and pharmacy regulators.
- Regarding Regional Health Authorities ‘centrally devised policy’ is concerned in terms of profilactics. Proper evaluation and adjustment of existing legislation can have a major impact on eventual implementation and adherence to these guidelines. Regional health authorities play a central role and have generally large impact on local healthcare provision. The degree of adherence and implementation is generally high. In case specific measures are taken.
- Uncertain whether this will be carried out as the focus on elderly care is shifting towards other important (inter)national political issues. There are ongoing efforts to increase the management of medication therapy and polypharmacy. An increase of the private sector might undermine the regional authorities.

To what extent will the degree to which centrally devised policy is adhered and implemented at different levels impact upon the management of polypharmacy?

- Ministry of Health?
- Regional Health Authorities?

ECONOMIC FACTORS’ IMPACT LEVEL IN POLYPHARMACY

E1. Overall economic success

To what extent will the current trajectory of growth (or lack of it) in the economy impact upon the management of polypharmacy to 2025?

- Periods of austerity create a focus on efficiency savings has the potential to have both positive and negative impacts on the management of polypharmacy. The positive impacts can include support for innovation and change and invest to save approaches which can led to streamlined services, new roles, service models and technologies. The negative impacts include an over emphasis on practices to reduce medicines spend rather than improved quality of outcomes and medicines optimisation and reduced resources for service delivery and staff development.
- Financial recourses always have a significant impact on the quality of care. Sweden has a stable economy with a moderate expected economic growth. It is largely dependent on external economy (Europe etc..), so in case of a financial crisis this could have a significant negative impact.
- Growth to 2020 is relatively certain, although it is mostly being used to support continued austerity, so growth does not necessarily change the way in which health spending is managed. But growth 2020 to 2025 is much less certain.
- The estimated impact could be negative or positive depending of the economic trajectory (economic growth or lack of it)
- The group was clear that the economic growth, whether positive or negative, will have an impact on the management of polypharmacy by 2025 (certainty was maximum). However, there was a significant discussion about a the following issues:
  1) Polypharmacy can also happen regardless of a specific (significant) investment. Therefore, it might be wrong to say that investment is a prerequisite for such a change to take place.
  2) A better economy might mean a push to further develop such a policy (hiring professionals, training them to work in multidisciplinary teams that conduct comprehensive medication reviews...) since economic incentives are available to do it. But economic difficulties might also have a trigger effect prompting the need for more cost-effective services.

E2. Health system’s structure and financing
To what extent would an increase in the number of inhabitants who have covered access to health care services (including demographic changes and the impact of an ageing population) be a factor in the management of polypharmacy to 2025?

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| • In general everyone has covered access to health care services, but the increasing number of inhabitants will have an impact on the accessibility. Shortages in healthcare providers will increase in the upcoming years, pressuring the quality of healthcare. It is quite certain that these shortages will grow in the upcoming years.  
• Free prescriptions are very certain and demographics are also very certain  
• The group was certain in this point. More people in need for health care services in the current scenario of increasing budget limitation will have a major impact in the need for developing more cost-effective services and polypharmacy is one of the pieces to be addressed in such developments. |
### Comments Box

#### S1. Access to health care

To what extent would access to health care services (easy/difficult) for patients living in remote areas be a factor influencing polypharmacy management to 2025?

- Equitable access to healthcare services is an underlying principle of commissioning in Northern Ireland and takes account of population needs taking into consideration rurality and demographics.
- Easier remote access would be a positive factor.
- However, we expect IT solutions (e-Health) to have a positive influence. Uncertain how much impact e-Health can have.
- These factors would impact; and to some extent developments in for example remote areas (e.g. Highland) could influence policy centrally with respect to efforts to ensure consistency (post-code prescribing and post code safety).
- The group considered that, in our current site (Catalonia), difficulties in accessibility related to patients in remote locations are not a problem. This question was skipped.
- These factors would impact; and to some extent developments in for example remote areas (e.g. Highland) could influence policy centrally with respect to efforts to ensure consistency (post-code prescribing and post code safety).

To what extent would access to health care services (easy/difficult) for specific population groups (e.g. the elderly) be a factor influencing polypharmacy management to 2025?

- Influencing clinicians’ attitudes and beliefs will be vital to the successful management of polypharmacy. Limitations of interprofessional collaboration can currently manifest as silo prescribing which contributes to inappropriate polypharmacy. Similarly defensive prescribing, often based on clinical guidelines can contribute to inappropriate polypharmacy. In Northern Ireland the integration of pharmacists into multidisciplinary teams in all health settings in the period to 2025 will provide support to clinicians and assist them with complex decision making when prescribing for multi-morbid older people.
- Positive knowledge and positive polypharmacy management are concerned, evidence based knowledge is concerned.
- We see right attitudes and beliefs towards as major factors. We sense an ongoing positive trend among clinicians towards the management of polypharmacy. Great uncertainty because of the relation with many other factors (e.g. question nr 1, media attentions, influx of migrant healthcare professionals with other attitudes and beliefs).
- These are aspects which are very unpredictable in terms of how they play out. Example of GP doctor in central Scotland who had zero registers of “depression” because he didn't regard it as a medical condition.

To what extent will attitudes and beliefs of clinicians have an impact upon polypharmacy management to 2025?

- Positive knowledge and positive polypharmacy management are concerned, evidence based knowledge is concerned.
- We see right attitudes and beliefs towards as major factors. We sense an ongoing positive trend among clinicians towards the management of polypharmacy. Great uncertainty because of the relation with many other factors (e.g. question nr 1, media attentions, influx of migrant healthcare professionals with other attitudes and beliefs).
- These are aspects which are very unpredictable in terms of how they play out. Example of GP doctor in central Scotland who had zero registers of “depression” because he didn't regard it as a medical condition.

b) To what extent do the following attitudes, beliefs and cross-cultural diversities of patients have an impact upon polypharmacy management to 2025?

- Influencing patient beliefs is recognised as an essential enabler of change in the management of polypharmacy. The history of violent conflict in Northern Ireland has left a legacy of high dependency on health services which manifests as health seeking behaviour with high levels of willingness to take medicines and to seek consultations for treatment. In the period to 2025 these factors are likely to continue to impact on patient behaviours as the population most affected by the conflict enters older age.
- Impact (positive or negative) depends on cultural background.
- We see right attitudes and beliefs as major factors with patient have the most impact on their own medication therapy and adherence. There is more and more patient involvement. Patients take more responsibility for their own medication therapy. There is great certainty that more patient involvement is going to happen. However, it is not 100% sure whether this will only have positive effects. Misinformed patients high pressure prescribers to prescribe inappropriate medication.
- These aspects are also very unpredictable in terms of how they play out. Many social factors involved and growing influence of internet based information, and access to third party internet offers. Mixed views on whether these would very high impact or moderate, so middle ground selected.

#### S2. Attitudes and beliefs
### S1. Access to health care

To what extent will attitudes and beliefs of clinicians have an impact upon polypharmacy management to 2025:

The group agreed that professionals’ attitudes and beliefs have a great impact in the management of polypharmacy. Professionals' attitudes are seen as an important factor but the impact can be positive (professionals are for it) or negative (professionals are not for it).

To what extent do the following attitudes, beliefs and cross-cultural diversities of patients have an impact upon polypharmacy management to 2025?

The group understood that the attitudes and beliefs of patients had a major impact in any strategy of polypharmacy. Also the issue of cultural diversity. In all these cases, the management of polypharmacy might need to be adapted if the vision 2025 is to be successfully achieved.

### S3. Education

#### a) To what extent would an increased investment in the education of clinicians be a factor in the management of polypharmacy to 2025? For example:

- This would have a positive impact on the management of polypharmacy but only if it occurs in tandem with strategic reform and workforce development delivering clinical roles and services to support polypharmacy management.
- Appropriat education of clinicians is a key factor. The more education the better. Although there is a clinical pharmacy programme in Sweden, it is unclear whether this programme will expand significantly towards 2025. Other (online) education on polypharmacy management for physicians and nurses has been developed as well but it is unclear if the use of this education is going to increase. Next to that, there is a risk that physicians and nurses will focus less on medication therapy, as clinical pharmacists become more present.
- All education, training, communication is designed to deliver upon specific objectives.
- The group consider education of professionals as an important issue with a high impact on polypharmacy. They were certain about the impact and uncertain about whether this was likely to happen by 2025.

#### To what extent would adoption of multiple-disease guidelines impact upon polypharmacy management to 2025?

- This would be beneficial as long as awareness results in the delivery of consistent high quality best practices. The is a lack of multiple-disease guidelines in Sweden. In case of adoption from other countries, this could have great impact. This would certainly have a positive impact. There is currently no structure or strategy to make this happen.
- The group was dubious about the availability and, therefore, the adoption of multiple disease guidelines. Only a few efforts in the elaboration of these guidelines are taking place. Additionally, the adoption of guidelines by health professionals remains a challenge. The group was confident about this statement and scored certainty as very high. level of certainty of this diagnose was high for the members of the group.
### TECHNICAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

**Comments Box**

**To what extent will shortcomings in the capture of admissions (and re-admissions) data impact upon the management of polypharmacy to 2025?**

- Although this is already fully electronic in Sweden, the electronic medical record systems are currently not linked between several regions.
- This non-interregional communication of systems will be solved in the upcoming years by the introduction of a national system. Not sure whether this national system will be in place by 2025.
- The group was unanimous and certain about the high negative impact that a lack of inter-connectedness of ICT would have in achieving the 2025 vision on polypharmacy.
- The group rephrased this question since it was difficult to see any relationship between admissions or re-admissions specific data and polypharmacy. The question that was analysed was if shortcomings in patients’ health data/information would impact polypharmacy. And the group was unanimous about this; lack of information has a negative impact on the development of polypharmacy strategies.

**T1. Existence of ICT integrated systems**

**To what extent will a lack of inter-connectedness of ICT linger as a problem impacting upon polypharmacy management to 2025?**

- This would be very beneficial and would support risk stratification of patients and the targeting of services for adherence and polypharmacy based on assessed need.
- Interconnected ICT plays a major role in polypharmacy management. There are already quite some inter-connected ICT systems in Sweden. Currently different ICT systems are not fully connected. More national networks will be developed.
- Where a coding of a new drug has a high rating
## Comments Box

### L1. Legal authorities and regulatory bodies, roles and responsibilities

**To what extent would the development of legislation on pharmaceutical pricing and reimbursement criteria and mechanism impact upon polypharmacy to 2025?**

- Payment for service and care instead of logistics of pharmaceutical products can have a significant impact. The development of more service and quality based reimbursements instead of product/quantity-based. More and more regions and county councils pay for services. By 2025 most likely more widespread and common.
- The group consider that the development of legislation on pharmaceutical pricing and reimbursement criteria would have a major impact in the promotion of polypharmacy.
- The existence of controls on health budgets are to have a high impact on a polypharmacy strategy. However, as it has been mentioned before, this impact can be positive or negative. Thus, reduced budgets might be an stimulus to do more with less and hence benefit a polypharmacy strategy. On the other hand, less budget might mean stopping the introduction of innovative concepts and so, stop the adoption of polypharmacy.

### L2. Patients’ rights empowerment:

**To what extent would a strengthening of patients’ rights (provision for malpractice etc.) impact upon polypharmacy to 2025?**

- This could have an impact in the period to 2025 as patient awareness of what they should expect when medicines are included in their treatment increases as a result of the implementation of policy (MOQF) in Northern Ireland. For example greater awareness of the need for an annual clinical medication review and greater dissatisfaction when best practices are not delivered.
- In general positive, in specific situations patients may force particular drugs to be reimbursed
- There is a slow trend in more patient empowerment. Change in legislation could get public attention and evoke more patient involvement and demand of for example medication reviews.
- Uncertain whether this will only have positive effects. More unjustified complaints towards healthcare providers may have a negative impact.
- The group consider that this aspect was less relevant for the development of a polypharmacy vision.

### L3. EU Guidelines

**To what extent would the existence of EU guidelines regarding geriatric care impact upon polypharmacy to 2025?**

- EU guidelines would establish a common understanding and expectation about what older people should expect when multiple medicines are included in their treatment plans. This could drive improvements in the quality of care for older people at national and EU level.
- We have the idea that EU guidelines will most likely not deviate that much from already existing guidelines in Sweden. European guidelines or legislation might not be innovative/disrupting compared to guidelines or legislation already existing within Sweden but it may help to a certain degree. There might not come legislation/guidelines at EU level and if it comes, it might have more impact than expected.
# POLITICAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

### A) Public sector

- The implementation of key health policies will support a shift from hospital to community-based care during the period to 2025. This will have a positive impact on the management of polypharmacy as optimising the benefits from medicines is seen as an important enabler of health and independence for older people living in their own homes.
- Positive only if there is consensus between healthcare professionals
- We do not consider the ratio of hospital beds to have a direct impact on the management of polypharmacy. It totally depends on factors and reasons behind the change of this ratio (e.g., less hospital beds, due to the trend that hospital-like care is provided within a community setting or less hospital beds due to economic restraints. Currently there are different measures taken to decrease hospital beds in order to provide better patient care within the community setting, but at this moment it is unclear whether or not this will result in more. Other regulatory bodies generally have less impact on the management of polypharmacy. The Medical Products Agency facilitates communication and discussions on the vision and strategy at national level. We do not foresee an increase or change in this situation positive outcome. There is also a trend to have more one-patient rooms (less hospital beds in total) which could have a positive impact. It is uncertain whether this will have a positive or negative impact.
- The group found that the rational for linking hospital beds and polypharmacy was not clear. It was decided to consider the proposed indicator as a proxy for measuring a trend towards shifting care from hospitals to primary care settings (from institutionalise practices to more ambulatory ones). Under this new way of formalising the question, the group was very positive on the fact that a shift towards more ambulatory care should have a significant impact in the needs of establishing a more consistent polypharmacy strategy.

### To what extent would a trend (increasing or decreasing) in the ratio of hospital beds per inhabitants impact upon polypharmacy to 2025?

### Other regulatory bodies in Pharma-sector decision making?

### P4. Corruption level

- Systems are in place to minimise this risk in Northern Ireland.
- We do not consider this an important topic in Sweden anymore. There are currently good regulations and there is much independence from the industry. The industry focuses more on expensive drugs, which we do not consider to directly have much impact on the polypharmacy issue. There is a low level of corruption in general and almost no financial incentive to decrease the quality of prescribing. We do not foresee this situation to change significantly towards 2025.
- Regarding the medicines obtained without prescription there is a high influence from the pharmaceutical companies. This is related with the significant decrease of profit/gains in the pharmacies during the last years. Regarding the medicines without patent (generic medicines) the main influence in prescription is from the ministry/government (costs control). Regarding the medicines with patent there main influence for prescription is from the pharmaceutical companies.
- The group read this question as the transparency and accountability of the system and whether a trend that increases such transparency and accountability is to have an impact on the vision of polypharmacy 2025. The group was positive about it, although not totally positive. In spite of the current society trend towards transparency in all governance areas, hence a good level of certainty, the group expressed the opinion that this was a winding road and there could be unexpected obstacles.

### To what extent will the influence of pharmaceutical companies and the provision of prescribing incentives impact upon the management of polypharmacy to 2025?
SOCIAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

Comments Box

To what extent can we predict the reaction of patients to public awareness campaigns and how that will affect the management of polypharmacy to 2025?

- Public awareness campaigns can have impact if they are properly organised.
- This has potentially a lot of influence. See question nr 15. There is currently only one initiative ongoing in Sweden. Other plans are not known to us.
- The group found difficult to predict the reaction of public to awareness campaigns. The success of some campaigns was noticed (tobacco quitting for instance) but also the failure of other ones (healthy diet or physical exercise). The group was certain about this statement.

TECHNOLOGICAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

Comments Box

T2. Innovative drugs policies

To what extent would access to innovative new drugs and drug technology for both patients and providers impact upon polypharmacy to 2025?

- Access to new drugs and technologies would potentially have a positive impact on polypharmacy. For example new medicines which improve outcomes and reduce the need for multiple medications or new smart technologies that can assist with adherence and self care through telemetry and telemonitoring.
- We do not foresee that new drugs or technology with a significant impact on polypharmacy management will be developed in the upcoming years.
- Better drugs which replace inferior drugs, more knowledge about the appropriate use of drugs, personalized medicine, etc. When it comes to technology and inventions, you never know what is going to happen.
- This question was less easy to answer. The group thought that accessibility to innovative drugs or drug technology is not an issue with a direct impact on polypharmacy.

LEGAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

Comments Box

To what extent would the existence/implementation of controls on health expenditures and pharmaceuticals impact upon polypharmacy to 2025?

- In terms of public finances (according to Polish situation)
- In the past years, there has been an increase in control systems. Constraints to the budget act as barriers for extra resources (e.g. extra clinical pharmacists). Current pressure by controlling authorities (financial department within different levels) is unlikely to decrease
Annex 2. Communicating the Vision slides

**WP5**

**Objectives:**

- To create a platform for ongoing contribution to the development of VISION 2025
  - Build upon the Workshops staged in Athens
  - Utilise the 2025 Reports and Route Maps created
  - Develop and augment the VISION for 20205 as understanding grows
  - Build upon the webinar
VISION 2025 - Contents

- Where are we now?
  - The “As Is” situation

- Where are we going?
  - The “To be” situation
  - What is our vision?

- How do we get there?
  - What is the plan for change

This presentation is part of the SIMPATHY project (663082) which has received funding from the European Union’s Health Programme (2014-2020)

Are the Essentials of Change Present?

- Sense of urgency
  - Do we have it?
  - Does the problem need it?

- Coalition of like-minded people?
  - This starts with us
  - And then expands
  - SIMPATHY sows the seeds

This presentation is part of the SIMPATHY project (663082) which has received funding from the European Union’s Health Programme (2014-2020)
Why is change required?

Figure 1 - Increase in life expectancy 2010 – 2050. Population by age group and sex, percentage of total population. (United Nations, Department of Economic, Social Affairs, Population Division. “World Population Prospects: the 2010 Revision,” New York,

A lack of Effective Policy & Guidelines?

Polypharmacy Guidance
March 2015

This presentation is part of the SIMPATHY project (663082) which has received funding from the European Union’s Health Programme (2014-2020)
Can we implement at scale?

Clinicians, policy makers share learning across EU from case studies and benchmarking

Tools for implementation to review appropriate polypharmacy with multidisciplinary team

EU role out

SIMPATHY – Strategy for success

1. 'Change the world'

Learn lessons from sites using case studies

2. Create the conditions

What is needed across EU to deploy?

3. Make the improvement

Deploy idea across EU

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Where are we going?
Vision, Mission and Values

Every organisation, large or small, public or private has................

• Vision (How do we want the story of our journey to turn out?)
• Mission (Why we exist; what we do)
• Values (What we believe in?)

Where are we going?
The Importance of Vision

• A Vision is a word picture of an organisation (or collaboration) successfully fulfilling its mission

• It is the destination for any change management process

• It tells us where we are going
Communicating the Vision

- Multi-Present
- Frequent
- Email
- Discussions
- Announcements

Where are we going?
The Vision

- All actions support this Vision
- Each step of the journey measured
- “Constancy of Purpose” is an imperative
- Paint the picture as best we can
Where are we going? Vision – key components

• The key components of Vision are:-
  • Shared Purposes... provide focus
  • Shared Values...... provide control
  • Shared Results...... provide challenge

Where are we going? Shared Purposes

Shared Purposes . . . provide focus by driving strategy
The SIMPATHY specific purposes are:
  • Patients: High quality care, and service
  • Health professionals: improve Patient Outcomes; do no harm; effective resource utilisation of disciplines
  • Policymakers: Evidence/data (that policies work) Sustainable and implementable
  • Funders: Value for money
  • Hospitals: Possess resources to run efficiently & effectively
  • Community: Quality provision and coverage of local Healthcare and stability of service
  • Suppliers: Security, partnership
  • Educators: Integrated education

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Where are we going?
Shared Values

- Shared Values....provide control by guiding behaviour
- Patient centred
  - “What Matters to you?” for patient based consultations; patient empowerment
- Sustainability of European Healthcare
  - Triple aim- sustainability in the context of workforce challenges
  - Affordability of legacy
- Best practice dissemination
  - We share our practices, and are open to innovation
- Specific values for polypharmacy/ SIMPATHY/ elderly
  - Address multiple morbidity and appropriate polypharmacy.
- Statement on EU Values in Health/ WHO

Where are we going?
Shared Results

- Shared Results....provide challenge
- Adherence
  - 5% improvement in each country each year against current level
- Admissions/ Re-admissions
  - Reduction of admissions and readmission due to medicines of 1-2% per annum
- Number of medications
  - Decrease in the growth of people on more than 10 medications each year using trend data
**SIMPATHY VISION 2025**

**Vision (how we want the story to turn out?)**

- In 2025 European healthcare all patients will be able understand and to take part in the review of their polypharmacy to ensure it's the treatments that will give them the best outcomes. Multi disciplinary teams that uses an innovative approach of the skills of the pharmacist. This will improve the safety of medicines and reduce harm from medicines for patients and improve adherence through joint patient and clinician decision making.

- **Mission (Why we exist)**
  
  SIMPATHY will stimulate and support innovative solutions across the EU in supporting patients in the management of inappropriate polypharmacy and adherence in all patient groups including innovation in the role of the pharmacist. We will deliver tools and resources to stakeholders to accelerate adoption of effective practices in the journey to excellence.

  **Values (What we believe in)**
  - Sustainability of European Healthcare
  - Best practice dissemination
  - Patient first; patient involvement

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**Patient Vision for SIMPATHY**

I have diabetes and asthma and take 10 different medicines. I manage my medicines using my phone app with the support of my pharmacist, nurse and doctor. They listen to my concerns and “what matters to me” and regularly check my medication with me.

When I was unwell recently I spoke to my pharmacist in the health centre. I was able to stop a couple of medicines but the pharmacist also added another one and now I feel much more in control.

I know when I have a problem with my medication, I can contact my doctor or pharmacist for advice or queries.

Understanding why I need to take each of my medicines and what they are for, enables me to make my own decisions with the help of the healthcare team.
Vision 2025

Patients’ involvement and empowerment

- Patients understand their medications and how they will get the most benefit from them and feel supported to make decisions about their long term conditions.
- Patients’ involvement and empowerment is a key priority, helping secure and sustain acceptance of this new philosophy of health management by European elderly patients.
- Patient information initiatives are well established with good uptake by patient groups as well as care home residents, including mobile apps.
- Active involvement by patient groups in the development of guidelines has been encouraged and helped to shape patient-centered policy.

This presentation is part of the SIMPATHY project (663082) which has received funding from the European Union’s Health Programme (2014-2020).
VISION 2025

- Multi-disciplinary teams / Integrated system
- Multi disciplinary teams (including physicians, pharmacists, nurses psychologists, social workers and other HP) and integrated health care are fully deployed.
- ALL Clinicians all sign up to common methodology to undertake the reviews
- The multi-disciplinary setting supports effective management of polypharmacy, including community pharmacists working hand-in-hand with GP teams, taking structured care of multi-morbid patients.
- We have one overarching system across all of health care, including primary and secondary care, community pharmacy, as well as political support.

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VISION 2025

ICT communication

- Integrated, user friendly dedicated ICT tools support the management of multi-morbidity.
- There is active data collection on harm due to medication and this is addressed
- ICT systems in all health care organizations facilitates improved communication between all providers. Adoption of the new electronic patient records system is 99% complete.
- E-health is implemented across EU and each citizen has a personalised HealthCare record and an updated unique administered medication list.

This presentation is part of the SIMPATHY project (663082) which has received funding from the European Union’s Health Programme (2014-2020)
Annex 3. Template for PESTEL analysis of Polypharmacy Management

### POLITICAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

<table>
<thead>
<tr>
<th>Factor</th>
<th>ESTIMATED IMPACT</th>
<th>Not relevant/ not applicable factor</th>
<th>ESTIMATED DEGREE OF CERTAINTY</th>
<th>Comments Box</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 VERY LOW to 5 VERY HIGH</td>
<td>None</td>
<td>1 VERY LOW to 5 VERY HIGH</td>
<td>Facilitators Notes</td>
</tr>
<tr>
<td>P1. Health services delivery/Health services network and coordination of services (To what extent to which different parts of the PHC - Ambulatory Care - Hospital Care system are connected. Keep in mind &quot;who prescribes, who has the right to give drugs?&quot;)</td>
<td></td>
<td></td>
<td>Probe for opinion on the extent to which there is an expectation of increasing integration or its polar opposite, namely fragmentation, and the impact either will have</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>To what extent will the degree of networking, integration/fragmentation of health care delivery &quot;lines&quot; across your country IMPACT in the management of polypharmacy to 2025?</td>
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<tr>
<td>a) Public sector</td>
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<tr>
<td>2</td>
<td>To what extent would a trend (increasing or decreasing) in the ratio of hospital beds per inhabitants impact upon polypharmacy to 2025?</td>
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<tr>
<td>b) Private sector</td>
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<tr>
<td>3</td>
<td>To what extent would a trend (increasing or decreasing) in the number of doctors practising privately impact on the management of polypharmacy to 2025?</td>
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<tr>
<td>c) Family Care units</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>To what extent would a trend (increasing or decreasing) in the prevalence of General Practice/Primary care Units impact on the management of polypharmacy to 2025?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2. Primary health care - Chronic disease management</td>
<td></td>
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<tr>
<td>5</td>
<td>To what extent will the degree to which centrally devised policy is adhered and implemented at different levels impact upon the management of polypharmacy?</td>
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</tr>
<tr>
<td>a) Ministry of Health?</td>
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<tr>
<td>b) Regional Health Authorities?</td>
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<tr>
<td>c) Other regulatory bodies in Pharma-sector decision making?</td>
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<tr>
<td>P3. Governance structure/decision making and resulting impact</td>
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<tr>
<td>6</td>
<td>To what extent will the influence of pharmaceutical companies and the provision of prescribing incentives impact upon the management of polypharmacy to 2025?</td>
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</tbody>
</table>

### ECONOMIC FACTORS’ IMPACT LEVEL IN POLYPHARMACY

<table>
<thead>
<tr>
<th>Factor</th>
<th>ESTIMATED IMPACT</th>
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<th>ESTIMATED DEGREE OF CERTAINTY</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 VERY LOW to 5 VERY HIGH</td>
<td>None</td>
<td>1 VERY LOW to 5 VERY HIGH</td>
<td>Economic performance is always uncertain. We live in a global economic system and the fortunes of Europe are tied to this but we also have varying degrees of propensity for growth demonstrated in different parts of the EU.</td>
</tr>
<tr>
<td>E1. Overall economic success</td>
<td></td>
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<tr>
<td>7</td>
<td>To what extent will the current trajectory of economic performance (growth or the lack of it) in the economy IMPACT upon the management of polypharmacy to 2025?</td>
<td></td>
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<tr>
<td>E2. Health system’s structure and financing</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>To what extent will the current trajectory of economic performance (growth or the lack of it) in the economy IMPACT upon the management of polypharmacy to 2025?</td>
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<td></td>
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</tbody>
</table>

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### SOCIAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

<table>
<thead>
<tr>
<th>S2. Access to health care</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. To what extent would access to health care services (easy/difficult) for patients living in remote areas be a factor influencing polypharmacy management in 2025?</td>
</tr>
<tr>
<td>10. To what extent would access to health care services (easy/difficult) for specific population groups (e.g., the elderly) be a factor influencing polypharmacy management in 2025?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S2. Attitudes and beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. To what extent will attitudes and beliefs of clinicians have an impact upon polypharmacy management in 2025:</td>
</tr>
<tr>
<td>→ Limitations of inter-professional collaboration?</td>
</tr>
<tr>
<td>→ Defensive medicine (multi-drug prescribing), typically implemented by clinicians?</td>
</tr>
<tr>
<td>→ Differences in patients’ beliefs of taking (more) drugs (beneficial or harmful) in polypharmacy and influence the physicians to prescribe?</td>
</tr>
<tr>
<td>→ Multipleinski physicians in order to seek a second opinion?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S3. Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. a) To what extent would an increased investment in the education of clinicians be a factor in the management of polypharmacy to 2025?:</td>
</tr>
<tr>
<td>→ Training on the appropriate medication review considering the medical outcomes (e.g., following the 7 steps based on Polypharmacy guidance by NHS Scotland).</td>
</tr>
<tr>
<td>→ Training on improving delivery of preventive and medical care.</td>
</tr>
<tr>
<td>→ Training on personalized education of the patient and caregivers on multidisciplinary approaches.</td>
</tr>
<tr>
<td>→ Training on polypharmacy implications in terms of clinical outcomes and economic impact related to the ADRs be a factor in the management of polypharmacy to 2025?</td>
</tr>
<tr>
<td>14. To what extent would adoption of multiple disease guidelines impact upon polypharmacy management to 2025?</td>
</tr>
<tr>
<td>→ Instead of single disease guidelines</td>
</tr>
<tr>
<td>15. b) To what extent can we predict the reaction of patients to public awareness campaigns and how that will affect the management of polypharmacy to 2025?</td>
</tr>
</tbody>
</table>

### TECHNOLOGICAL FACTORS’ IMPACT LEVEL IN POLYPHARMACY

<table>
<thead>
<tr>
<th>T2. Innovative drugs policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. To what extent would a lack of inter-connectedness of ICT linger as a problem impacting upon polypharmacy management in 2025?</td>
</tr>
<tr>
<td>Some countries lack record keeping systems, whilst in other countries “islands” of electronic information exist that are not effectively connected.</td>
</tr>
<tr>
<td>17. To what extent would shortcomings in the capture of admissions (and re-admissions) data impact upon the management of polypharmacy in 2025?</td>
</tr>
<tr>
<td>Data integrity and sharing (including electronic capture facilities sharing).</td>
</tr>
<tr>
<td>18. To what extent would access to innovative new drugs and drug technology for both patients and providers impact upon polypharmacy in 2025?</td>
</tr>
<tr>
<td>Benefits, Costs and Affordability</td>
</tr>
<tr>
<td>Legal Factors</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>L1. Legal authorities and regulatory bodies, roles and responsibilities</td>
</tr>
<tr>
<td>19. To what extent would the development of legislation on pharmaceutical pricing and reimbursement impact polypharmacy in 2025?</td>
</tr>
<tr>
<td>20. To what extent would the existence/implementation of controls on health expenditure budget impact upon polypharmacy in 2025?</td>
</tr>
<tr>
<td>L2. Patients' rights empowerment</td>
</tr>
<tr>
<td>21. To what extent would a strengthening of patients' rights, provision for malpractice etc. impact upon polypharmacy in 2025?</td>
</tr>
<tr>
<td>L4. EU Guidelines</td>
</tr>
<tr>
<td>22. To what extent would the existence of EU guidelines impact upon polypharmacy in 2025?</td>
</tr>
</tbody>
</table>

CHAPTER ONE
The growing need for improved management of polypharmacy

CHAPTER TWO
Approach to change in the context of multi-medication management

CHAPTER THREE
The polypharmacy management toolbox for the next 15 years