

#### MOMENTUM

European MOMENTUM for Mainstreaming Telemedicine Deployment in Daily Practice (Grant Agreement No 297320)

## D3.4 Personalised Blueprint for telemedicine deployment: validated and tested version

## **Annex 1: MOMENTUM test phase report**

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#### Abstract

This deliverable describes the testing of the MOMENTUM-TREAT method first developed and described in D3.3. The test site was a United4Health telemedicine project initiative that took place in Kristiansand, Norway. MOMENTUM's 18 critical success factors formed the basis of a survey which was distributed among the Norwegian United4Health project members. The survey results were then explored interactively in a focused MOMENTUM-TREAT workshop based on the MOMENTUM-TREAT method. After the workshop, the RSD team performed a semi-structured interview with the Norwegian test team. The aim of the interview was to reveal the test team's views on the strengths and weaknesses of MOMENTUM and its usefulness as a decision-making tool for telemedicine doers working on telemedicine deployment or scale-up. Subsequently, the MOMENTUM Blueprint (D3.4) has been revised and abbreviated on the basis of the Kristiansand test site, and other, feedback.

#### **Key Word List**

Blueprint, critical success factors, MOMENTUM, MOMENTUM-TREAT, personalised blueprint, scaleup, special interest group, survey, testing, tool, toolkit, TREAT, validation, workshop.

#### **Change History**

#### **Version History**

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- 02 18<sup>th</sup> December 2014
- 03 22<sup>nd</sup> January 2015
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#### **Version Changes**

- *01* Initial draft version.
- **02** Second draft version, as a result of initial commentary.
- *03* Third draft version, produced as annex 1 to D3.4.
- **04** Fourth draft version, taking on board commentary from MOMENTUM EXCO and quality review group members.
- **05** Fifth version prepared for submission to project coordinator for approval, based on chapter and section re-structuring and text editing.
- **1.0** Final touch and approval

#### **Statement of originality**

This report contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

The TREAT tool was developed in cooperation between CISCO and the Region of Southern Denmark (RSD) during the course of the Renewing Health project.<sup>1,</sup>

The provisional MOMENTUM-TREAT test method and test site were thoroughly described in MOMENTUM Deliverable D3.3 in September 2014. For ease of reference, some sections from the D3.3 deliverable are re-used in this report. In this way, the readers will be able to understand the MOMENTUM-TREAT process without first having to read any prior report. A number of key sections of D3.3 are thus presented as appendices to this report. When a section has been re-used, this is clearly stated in the document.

• <u>http://www.renewinghealth.eu/documents/28946/394219/D18.2+v1.0+Renewing+Health+Readiness</u> <u>+Evaluation+Model.pdf</u>

<sup>&</sup>lt;sup>1</sup> See: <u>www.RenewingHealth.eu</u> and specifically these two deliverables:

<sup>• &</sup>lt;u>http://www.renewinghealth.eu/documents/28946/394219/D18.4+v1.0+Renewing+Health+Guideline</u> <u>s+for+the+evaluation+process.pdf</u>

## Terminology

Term	Description or definition
Critical success factors (for telemedicine deployment)	The core of a set of guidelines and indicators that can help in defining an action plan for deploying telehealth in routine care and on a large scale.
MOMENTUM Blueprint (or blueprint)	Introduction and presentation of the 18 MOMENTUM critical success factors with their associated set of indicators.
MOMENTUM-TREAT toolkit	The combination of the MOMENTUM critical success factors and the TREAT tool is referred to as the MOMENTUM-TREAT toolkit.
Project team	The entire group of participants at all levels of the United4Health project site in Kristiansand, Norway.
Test team	The team of two people (Senior adviser Undine Knarvik, NST, and project manager Wenche Tangene, Hospital of Sørlandet) who performed the MOMENTUM-TREAT test at the Kristiansand United4Health project site.
TREAT tool	An assessment tool that can help key stakeholders in a telemedicine initiative decide whether their venture is ready for large-scale deployment. The tool was created jointly by the information technology (IT) company CISCO and RSD.
United4Health project	A European Commission co-financed project that includes many different sites that are working to expand telemedicine use. One of them is in Kristiansand, Norway where the MOMENTUM-TREAT testing took place. The project is described in some detail on page 2 of this annex. See also <u>http://www.united4health.eu</u> .

### Abbreviations

CIP	Competitiveness and Innovation Programme
COPD	Chronic Obstructive Pulmonary Disease
CSF	Critical success factor
EIP AHA	European Innovation Partnership on Active and Healthy Ageing
EXCO	Executive Committee
GP	General practitioner
CIP ICT PSP	Competitiveness and Innovation Programme Information and Communication Technology Policy Support Programme
т	Information technology
MOMENTUM	European Momentum for Mainstreaming Telemedicine Deployment in Daily Practice
NST	Norwegian Centre for Integrated Care and Telemedicine
PSC	Project Steering Committee
RSD	Region of Southern Denmark
SIG	Special interest group
SSHF	Hospital of Sørlandet
TREAT	Telemedicine REadiness Assessment Tool
U4H	United4Health

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### **Executive summary**

As a result of its three years of activity, the MOMENTUM thematic network has produced the validated and tested MOMENTUM Blueprint. The blueprint is founded on a set of 18 critical success factors: these form the basis of a set of indicators with regard to the readiness of telemedicine initiatives to scale up their services. The blueprint is accompanied by a brief set of guidelines on how to conduct such an assessment of readiness to scale-up telemedicine deployment.

During earlier stages of the MOMENTUM development process, draft versions of the blueprint and the critical success factors were shared with telemedicine stakeholder organisations and competence centres for their feedback and critical input. In the test phase, which took place in the fall of 2014, the blueprint and the 18 critical success factors were tested in a real-life setting in order to further validate the outcomes of MOMENTUM's work. The test phase was led by WP3 (Region of Southern Denmark (RSD)).

A test site was chosen which had no connection with either the MOMENTUM Network or the TREAT Tool (which has been brought together to form the MOMENTUM-TREAT toolkit). This was to ensure that the test team had no previous experience with or knowledge of the MOMENTUM project so that transparency and objectivity could be maintained.

The testing took place in the municipality of Kristiansand, Norway, and involved a local project that is taking place within the framework of the United4Health project <u>http://www.united4health.eu</u>. The reason for this choice was twofold. First, it was to evaluate both the added value of the success factors and the TREAT process. Second, it was to test whether the MOMENTUM blueprint was understandable and relevant for telemedicine doers, organisations and stakeholders with practical needs for telemedicine implementations guidelines who operate outside of the MOMENTUM consortium itself. Ultimately, this will be the primary target group of the MOMENTUM outcomes.

The test team members found the toolkit helpful. They suggested further uses for the indicators that have been developed in MOMENTUM in earlier phases of other telemedicine initiatives. They also proposed some revisions of the toolkit, mainly concerning the order of the indicators and the need for localisation of some of the critical success factors.

This test phase helped to inspire a restructuring of the 18 MOMENTUM critical success factors and their underlying indicators, which can now be read in deliverable D3.4.

## 1. Introduction

This report is an annex (Annex 1) to MOMENTUM deliverable D.3.4, the project's validated and tested version of the personalised blueprint for telemedicine deployment. This introduction describes the background and purpose to the MOMENTUM test phase and the test site itself.

#### **Purpose of this annex**

The purpose of this report is to show how the MOMENTUM Blueprint and it 18 critical success factors were validated, and thereby to provide insights into the strengths and weaknesses of the MOMENTUM-TREAT toolkit.

The validation process incorporated both:

- The actual content of the critical success factors and the potential for their use.
- The value of the wider MOMENTUM-TREAT toolkit.

The report points out what actions need to be considered before the MOMENTUM-TREAT toolkit is ready for use in other telemedicine deployment initiatives.

On the basis of the insights laid out in this report, revisions to the blueprint were proposed and accepted. For an up-to-date version of the MOMENTUM-TREAT toolkit, see deliverable D3.4.

The report outlines a test made by the Region of Southern Denmark (RSD) team in collaboration with a Norwegian test team from Kristiansand, South Norway. The report describes the preparation of the test, the testing itself, and the final evaluation of the test phase and the toolkit.

The process of choosing a test site and the test site itself were described at some length in Deliverable 3.3, and are repeated in Appendix 5 to this report.

#### Purpose of the test phase and its relations with TREAT

For the test phase, the MOMENTUM critical success factors were paired up with the Telemedicine REadiness Assessment Tool (TREAT). TREAT was developed in an earlier collaboration between the Danish health authority, RSD, and the IT company, CISCO. in MOMENTUM, however, TREAT was adapted for use in this project prior to its testing. The combination of the two elements is now referred to as the MOMENTUM-TREAT toolkit.

The purpose of the test phase was to validate the MOMENTUM Blueprint by testing the 18 critical success factors in a real-life setting. This was done in order to find out whether the tool is helpful for decision-makers when they are deciding whether a piloted telemedicine initiative is ready for large-scale deployment.

The test phase was also used to reveal whether or not the MOMENTUM-TREAT toolkit can function as a self-managing tool i.e., as an autonomous or stand-alone tool, which anyone can use without further instructions or adaptations.

Testing the stand-alone quality of the toolkit will ensure that the results of the MOMENTUM project will be available and useful in a sustainable format after its end. The results of this

test have considerable significance for the MOMENTUM Network when it decides on two items: the options for post-project sustainability and, concretely, the future presentation and availability of the tools on the MOMENTUM website.

TREAT offers a standardised assessment tool to help leaders in regions, health and care organisations, and their funding partners (such as local and national authorities and insurers) to assess their readiness to implement telemedicine solutions. The main issue addressed by TREAT is whether the partners in question are organisationally ready to deploy such services.

TREAT was initially designed as a stand-alone tool. It is now usefully complemented by the MOMENTUM Blueprint because the 18 critical success factors were recognised as offering a useful basis for identifying the indicators to use in the assessment process. In turn, the statements that were identified thanks to TREAT have helped MOMENTUM to identify 51 potential indicators that relate to each of the critical success factors (see deliverable D3.4).

#### The test site

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The Kristiansand test site project is one of the members of the United 4 Health project <u>http://www.united4Health.eu</u>. This project is partially funded under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Programme (CIP) by the European Commission.

The Kristiansand test site focuses its work on a pulse oxymetry recording application of use to patients with chronic obstructive pulmonary disease (COPD). The patients are in network contact with the Norwegian national health network, the local municipality healthcare service, and a variety of healthcare professionals which include general practitioners and COPD specialist doctors. Graphically, the telemedicine initiative of the Kristiansand test site can be represented as follows:



Figure 1: The Kristiansand United4Health project

Four reasons made the Kristiansand test site especially suitable for MOMENTUM's purposes:

- 1. The United4Health Kristiansand site had reached an optimal stage for testing. The pilot project had been carried out, but the decision whether to shift towards or against large-scale deployment had yet to be made. Furthermore, the site was complex, and included a wide range of stakeholders from primary care, hospitals, and social care. It represented a typical site for a decision situation in a telemedicine initiative.
- 2. The Kristiansand test site because it is part of the United4Health project could be a useful platform for spreading the use of the MOMENTUM toolkit further among other initiatives in the CIP ICT PSP.
- 3. The test provided an opportunity to create synergies and transfer knowledge between the two projects, MOMENTUM and the United4Health, and to exploit results from an earlier European Commission co-funded project called Renewing Health <a href="http://www.RenewingHealth.eu">http://www.RenewingHealth.eu</a>.
- 4. Independence was also important. The United4Health project had played no part in the preparation of the MOMENTUM-TREAT toolkit. Therefore its members were able to provide MOMENTUM with an outsider's view on the strengths and weaknesses of the toolkit. This was very helpful, especially when it came to the question of whether or not the MOMENTUM-TREAT toolkit can function as a standalone-tool without any guidance being provided to people using it by members of the MOMENTUM consortium.

Other practical reasons for choosing the Kristiansand site to validate and test MOMENTUM were already discussed in MOMENTUM's deliverable D3.3. Please refer to appendix 5 of this report for details.

## 2. Running the MOMENTUM-TREAT process

The MOMENTUM-TREAT process involved four steps:

- Preparation of the survey.
- The survey phase.
- Preparing and running the associated workshop
- Preparing a report as part of the basis for the decision-makers' to make their decision on large-scale deployment.

Each of these four steps is described below.

#### **Step 1 – Preparing the survey**

To prepare the survey questionnaire, the two teams were involved collaboratively in two sets of activities. First, both the RSD team and the Kristiansand test team prepared the test phase. In this phase, there was concern with regard to a number of language questions and the order of the 51 indicators.

#### Preparing the test phase - the RSD team:

For each critical success factor, a number of indicators were prepared: their aim was to allow telemedicine doers to examine whether the underlying conditions for the factors had been fulfilled. Due to a tight schedule, the indicators were prepared on the basis of four of MOMENTUM's deliverables<sup>2</sup> before the actual consolidated version of the Blueprint (D3.2) was publically available. Please refer to appendices 1, 2 and 3 of this report for the complete list of critical success factors and their associated indicators in the format in which they existed at the time of the test workshop and its preparation.

#### Language considerations:

The four MOMENTUM deliverables and the TREAT materials were all available to both teams in the English language. However, the Kristiansand test team members felt especially that they needed the indicators to be written in Norwegian: they feared that some of the survey tool respondents would feel less confident if they were to respond to the indicators in English. Also, since the workshop itself was going to be held in Norwegian, circulating English language indicators at the survey stage might have led to confusion on the part of the participants.

The strong similarity between the Danish and Norwegian languages, especially in writing, worked to the test teams' advantage. The RSD team members prepared a set of indicators in English and a translation of them into Danish. Based on that background, the Norwegian team prepared a Norwegian set of indicators. Any doubts concerning the content were discussed between the two teams via Skype calls or e-mails. In this way, both teams were confident that important aspects of the indicators would not become lost in translation. As a

<sup>&</sup>lt;sup>2</sup> The relevant MOMENTUM deliverables were D4.2, 5.2, 6.2 and 7.2.

result, they felt that the respondents had an ideal set of circumstances for expressing freely their thoughts and experiences.

#### The order of the indicators

The order of the indicators was not discussed before their release to the Kristiansand test team. The original order of the indicators was as follows:

- 1. Strategy and management.
- 2. Organisation and management.
- 3. Legal, regulatory and security issues.
- 4. Technical and infrastructural issues.

That order was kept at the beginning of the Kristiansand test phase. Each topic e.g., strategy and management, had a number of critical success factors and associated indicators allotted to it. However, when the Norwegian test team members started preparing the test, they soon realised that a different order for the indicators would make more sense to them. They asked the RSD team for permission to rearrange the order of the indicators, and permission was granted.

#### Preparing the test phase - the Kristiansand test team:

The Kristiansand test team members was presented with a list of the 18 critical success factors and an associated list of initial indicators to prepare the test phase. Please refer to appendices 1, 2 and 3 of this report.

#### **Considerations relating to the indicators**

First, the Kristiansand test team prepared three initial background questions in order to be able to group their respondents into categories. Each respondent was required to provide the following types of information on themselves:

- Profession
- doctor
- nurse
- decision-maker
- administrator
- IT professional
- researcher/lecturer.

#### • Role in the project

- member of project group or project subgroup
- member of steering committee
- none of the above.
- Primary place of employment
  - municipal health service
  - specialised health service
  - other.

Second, the Kristiansand test team members were invited to study the list of indicators based on the critical success factors and to leave out any items which they found irrelevant. They were also encouraged to add a number of indicators of their own, in the event they

considered that there were issues which were not sufficiently covered by the original list.

The Kristiansand test team used all the indicators from the original list, but chose to rearrange some in a more logical and coherent order. For example, the test team suggested that indicators concerning patients should appear before indicators about organisational or financial matters. Members felt no need to add further indicators, as they said that the indicators representing the 18 critical success factors were sufficient to cover their needs.

However, the Kristiansand test team found it necessary to rephrase some of the indicators:

- The indicators concerning legal issues had to be adjusted to the context of Norwegian legislation.
- The indicator concerning the needs of the primary user caused some confusion and had to be rephrased entirely for the purposes of the survey in order for respondents not to get its ideas mixed up with the indicators addressing patient-centeredness and user-friendliness.

#### Building familiarity with the SurveyXact survey tool

The Kristiansand test team members familiarised themselves with the survey tool that was being used in the MOMENTUM-TREAT test process: the tool is SurveyXact.<sup>3</sup>

SurveyXact was the on-line tool used for the purpose of examining the indicators addressed by the Kristiansand test team and the survey respondents. SurveyXact allows several options for graphical and numeric depictions of survey results. These graphics are in colour, and are based on a traffic light concept. Details of the system are described below.

The colours representing 1 (disagree, the lowest score) 3 (neutral (neither agree nor disagree i.e., the middle score) and 5 (agree, the top score) are taken from the traditional traffic light colours of red, yellow and green, respectively. Since there are only three traffic light colours (red, yellow and green), the middle values 2 (somewhat disagree – medium low) and 4 (somewhat agree – medium high) are represented in orange and pale green respectively. This range of colours makes a graphical representation of the distribution of all five possible answers given to any indicator, where each optional response has its own colour assigned.

In the test phase, graphical depictions of the percentages of responses given on the different indicators were presented to the Kristiansand test team and the respondents as pie charts.

A standard pie chart example of this is shown below. It is followed – in the description of Step 2 – by two examples of some specific responses to indicators by the Kristiansand respondents: they illustrate how the pie charts are presented in practice.

<sup>&</sup>lt;sup>3</sup> See <u>http://www.surveyxact.com/</u>





#### **Step 2 – Running the survey phase**

The Kristiansand test team invited 58 persons involved in the deployment of the United4Health project in Kristiansand to participate in the survey.

The team made a point of going through all the relevant mailing lists and recruiting respondents from all levels of the project organisation and from a wide range of professions. Initially, the test team discussed the idea of broadening the scope of the survey, and involving stakeholders who were not directly involved in the project. However, for practical reasons, the testing was limited to respondents who were part of the United4Health project site in Kristiansand.

The participants were chosen from among all the site's groups and committees. Prior to sending out the survey, the test team mailed a letter to all the participants explaining the purpose of the test and preparing them for the survey.

After the test team had chosen, re-ordered and, in some cases, edited the indicators, these were returned to the RSD team to be fed into the SurveyXact tool. They were then distributed by e-mail to the 58 respondents.

The respondents were given a two-week deadline to respond to the survey. After two weeks, a reminder was sent out. A total of 31 respondents completed the survey responses. The response rate was seen as acceptable and typical for this kind of survey. The SurveyXact tool allowed the Kristiansand test team to follow the survey process closely and generate spread sheets and graphical depictions of the preliminary results continuously.

Example results of the survey responses, as produced by the SurveyXact survey tool, are shown below as pie charts. These pie charts offer an easy overview of the way in which respondents view the 51 indicators. For example, if a pie chart circle is mainly green and pale green, this shows that the critical success factor is present. The opposite is the case when a pie chart is predominantly red or orange. A pie chart with a larger proportion of orange and red indicates a lack of readiness (i.e., a relative absence of the specific critical success factor).

Thanks to this indicator, in the Kristiansand case, with regard to the example of critical success factor 3 (CSF 3) on "Ensure leadership through a champion", such leadership is very much present. In the figure below, 85 per cent of the respondents chose "agree" or "somewhat agree" to the statement 'In my region/organisation there is one or several influential person(s) who take(s) on a leading role and leads the way towards deployment of the telemedicine solution tested in our project'.

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Figure 3: CSF/Ensure leadership through a champion - in Kristiansand

In the case of Kristiansand, in terms of the critical success factor 14 (CSF 14) on "Involve legal and security experts", 44 per cent of the respondents chose "disagree" or "somewhat disagree" in response to the statement 'In this project we are not experiencing any data security problems'.



Figure 4: CSF/Involve legal and security experts

#### Step 3 – Preparing and running the workshop

Step 3 has two parts: the preparation of the workshop and the actual running of the workshop.

#### Preparing the workshop - the Kristiansand test team:

At the point when the test team members prepared the workshop to follow up on the survey results, they were already quite familiar with the MOMENTUM-TREAT method since they had discussed it with the RSD team throughout the whole preparation process.

The workshop was prepared on the basis of the following three inputs:

- Descriptions of the MOMENTUM-TREAT tool provided by the RSD team.
- The 31 responses from the respondents from the United4Health project Kristiansand site.
- A report on a previous (TREAT) workshop held in Scotland as part of the Renewing Health project which the team members were encouraged to use as an example.

The Kristiansand test team prepared the following workshop agenda:

- 1. Introduction of participants.
- 2. Description of the MOMENTUM-TREAT toolkit.
- 3. Presentation of the results of the survey.
- 4. Discussion in smaller groups.
- 5. Presentation of the results from the smaller groups.
- 6. Conclusions and further work to be done.

For point 4 of the agenda which focused on the group discussions, the test team prepared the following four specific topics for discussion:

- Plan for organisational change.
- Business plan.
- Technology and processes for monitoring the service.
- Resources needed for the service.

#### **Running the workshop - the Kristiansand test team:**

Fifteen survey respondents were invited to take part in a one-day workshop. The purpose was to discuss the results of the survey and the implications for the process of future expansion of the Kristiansand telemedicine deployment initiative. The respondents were chosen based on their activities in the United4Health project Kristiansand site, and their stakeholder influence on the future process. A group of 12-15 people was seen as the ideal number to attend the workshop.

The workshop attendees were expected to be able to represent a number of different points of view and keep up a lively discussion. If a larger number of project participants had been selected, the team would probably have had to run two separate workshops in order

to make sure that everyone involved could be heard. Due to a tight schedule, however, this was not an option.

The workshop was held on 27 October 2014. It was a lively and productive event, with plenty of discussion as the next figures show.

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Figure 5: Participants at work at the test site workshop



Figure 6: Participants in discussion at the test site workshop

#### **Step 4 – Preparing the report**

The workshop report is not included here. However, the main results of the workshop were the following:

- The participants were so pleased with the MOMENTUM-TREAT toolkit that some suggested it as a future standard for all Norwegian national telemedicine projects.
- Some participants suggested a wider use of the MOMENTUM-TREAT toolkit, which could be applied to telemedicine pilot initiatives in earlier phases as well as at the end of them.
- In the survey phase, some participants had struggled to see the relevance of a number of the indicators. In the workshop, however, they gained a broader understanding of them. The workshop permitted them to see the critical success factors and underlying indicators in their proper context.
- Overall, the participants found the MOMENTUM-TREAT toolkit very useful. All parts
  of the toolkit were important and worked well. The workshop led to a number of
  suggestions for changes and clarifications, which are described in chapter 4 of this
  report. Overall, however, satisfaction with the toolkit after the workshop was very
  high.

In addition:

- The participants achieved a shared understanding of the state of the United4Health projects in Kristiansand, the results so far and the challenges ahead. From the survey results they got an impression of their degree of readiness for large-scale deployment.
- The workshop results led to a thorough revision of the plan for future activities in the United4Health project Kristiansand site. As a result, the Kristiansand site now has a new action plan based on the results of the survey and workshop.

## 3. Reflections after the MOMENTUM-TREAT workshop

After the workshop, on 3 November 2014, the RSD team performed a semi-structured interview with the Norwegian test team. The aim was to reveal what the team members had learned from the experience, both of undertaking the survey and running the workshop.

Prior to the interview, an interview guide was prepared with the purpose of covering the following aspects of the process:

- The usability of the MOMENTUM pre-workshop survey.
- The ease-of-use of the MOMENTUM workshop.
- The applicability of the MOMENTUM 18 critical success factors to a scale-up site.
- The value offered by the MOMENTUM-TREAT toolkit to telemedicine doers.

The interview guide was written in English and Danish and can be found in appendix 6 of this report. The interview was conducted via Skype in Norwegian and Danish and lasted about an hour. On request, the interview guide was sent to the test team in advance to allow for the team's preparation. The results of the interview were translated into English by the RSD team for use in this report.

Subsequently, the Kristiansand test team used the interview guide as the structure for their own written (Norwegian language) report on the MOMENTUM-TREAT test phase in the United4Health project.

This chapter reports on the observations made by the Kristiansand test team in relation to the MOMENTUM-TREAT toolkit as a whole and its different components (the chapter is based on the Skype interview as well as the Norwegian written report). Some reflections are then offered on potential revisions of the MOMENTUM critical success factors and indicators.

These discussions (which are called learning points) are summarised in a later chapter of this report. See chapter 4 of this report.

#### Observations on the toolkit as a whole

The Kristiansand test team found the toolkit very useful at the present stage of their telemedicine initiative. The United4Health Kristiansand site is a telemedicine implementation initiative which the team hopes to continue after the actual project period ends. The test team thinks that MOMENTUM-TREAT toolkit helps highlight the possibilities as well as challenges of continuing the service.

The test team sees TREAT as a useful management tool for project managers. It is also a tool which offers a basis for decision-making for a steering committee. For the other participants in an initiative, it is a tool which helps highlight an initiative's strengths and weaknesses.

Furthermore, before becoming involved with the MOMENTUM project, the team members had already decided to hold a workshop in the fall of 2014. They found the MOMENTUM-TREAT toolkit very helpful as it provided them with a specific point of departure for the workshop.

The test team thought that the 18 critical success factors may be useful at earlier stages of an initiative or a project. At the very beginning of an initiative, the success factors could be helpful as a checklist of matters to consider when designing a project plan. During various project stages of an initiative, the success factors could also work as the basis for risk analysis.

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The test team members reported that the workshop participants considered the four chosen discussion topics very relevant for gauging the maturity of their initiative, and would like to apply them to other ventures as well. Some survey/workshop participants suggested that the method should be used at the national level (e.g., in Norway) for the evaluation of telemedicine initiatives.

The team found the TREAT tool useful and dynamic, and mentioned the tool's ability to increase the participants' awareness of the processes involving in deploying telemedicine. The tool also highlighted areas of difficulty (i.e., lack of readiness) and encouraged further work.

The test team found the SurveyXact tool to be very user-friendly, useful and practical, especially the easy way it enables visualisation of the survey results.

Although their attitudes towards the MOMENTUM-TREAT toolkit were mostly positive, the test team pointed out a number of problem areas with the toolkit and made suggestions for potential improvement measures for future use.

As far as possible, these suggested improvements have been taken on board in the way in which the MOMENTUM Blueprint presents the toolkit elements (i.e., the critical success factor and the indicators) in Deliverable D3.4.

#### Suggested revisions of the MOMENTUM-TREAT toolkit

The suggestions made by the test team members have particular relevance for the preworkshop survey, the critical success factors, and the indicators.

The test team suggested that the 5-point Likert scale should be revised. At the present the possible answers to each question are as follows (see figure 7).

The test team called for an additional option which would be: "I don't know". The team members suggested it could be combined with the option "neutral", but this requires some consideration, as being neutral on a subject does not mean the same as the statement "I don't know" which will probably be used by respondents who find the indicator irrelevant to their specific role in the project and see themselves as unqualified for rating it.



#### Figure 7: Likert scale

Some participants struggled to see the relevance of a number of indicators when they were first presented with the survey. Later, during the workshop discussions they recognised their relevance. This led the test team to wonder whether the survey would be easier to understand if it had fewer indicators and there was perhaps a little further explanation on some of the more difficult areas of the critical success factors. Two examples follow.

First, the test team found it hard to distinguish between the two special interest group (SIG) topics "Strategy and Management" and "Strategy and Organisational Changes and Change Management". The team therefore suggested that the latter be referred to as "Organisational Matters". Second, some indicators concerning infrastructure were seen as belonging to the "Strategy and Management" topic rather than the "Technology" topic.

Generally, the test team members suggested a revision of the order of the indicators, as they considered the November 2014 order somewhat illogical and incoherent. They suggested a structure where the indicators concerning the patient form the starting point of any critical success, leading on to the other indicators.

These concerns, along with discussions within the MOMENTUM team during the consolidation process of the four SIG reports, have led to an almost complete reorganisation of the questions, in what is now called the shamrock model. This model is outlined below in figure 8 and in an explanatory (blue) box.

This new structure was described in D3.2, a document which was not available to the Norwegian test team at the time of preparing the survey questionnaire, and again in D3.4.



#### Figure 8: MOMENTUM shamrock model

The test team saw the potential for a more seamless connection between MOMENTUM and TREAT. In November 2014, the terminology was not completely aligned, which caused some confusion and could stand in the way of the MOMENTUM-TREAT toolkit functioning as a "self-managing tool". With a little further work on the terminology, the toolkit may become easier to use. These adaptations have now been made to the relevant documentation in the MOMENTUM Blueprint (see D3.4).

The experience demonstrated that the indicators presented in appendix 3 of this report are generic and need to be localised before they are used by a project or pilot or initiative team.

Finally, when asked to identify areas which need more work or research, the test team suggested that the toolkit might be useful for other information technology (IT) initiatives than those regarding telemedicine, since many of the challenges which emerge when moving from a pilot phase to large-scale deployment are similar in other fields as well.

#### The shamrock model (see also figure 8 of this report)

The idea behind the depiction in figure 8 is to group the critical success factors which logically belong together. The stem represents the prerequisites and the three leaves represent success factors that have to do with people, planning and running the telemedicine service. There are four main categories of critical success factors (context; people; plan; run). The 18 critical success factors are allotted to each category.

This list reflects the final wording of the critical success factors as of January 2015, the project end.

An earlier version of the critical success factors (dated 6 May 2014), which is displayed in the order used by the Kristiansand test team, is available on the MOMENTUM project website: <u>http://telemedicine-MOMENTUM.eu/18-factors/</u> and <u>http://telemedicine-</u> <u>MOMENTUM.eu/wpcontent/uploads/2014/05/MOMENTUM\_CSFs\_v01\_6may2014.pdf.</u>

#### Context

- 1. Ensure that there is a cultural readiness for the telemedicine service
- 2. Coming to a consensus on the advantages of telemedicine in meeting compelling need(s)

#### People

- 3. Ensure leadership through a champion
- 4. Involve healthcare professionals and decision-makers
- 5. Put the patient at the centre of the service
- 6. Ensure that technology is user-friendly

#### Plan

- 7. Pull together the resources needed for deployment
- 8. Address the needs of the primary client(s)
- 9. Prepare and implement a business plan
- 10. Prepare and implement a change management plan
- 11. Assess the conditions under which the service is legal
- 12. Guarantee technology has the potential for scale-up

#### Run

- 13. Identify and apply relevant legal and security guidelines.
- 14. Involve legal and security experts
- 15. Ensure that telemedicine doers and users are privacy aware
- 16. Ensure that appropriate information technology infrastructure and eHealth infrastructure are available
- 17. Put in place the technology and processes needed to monitor the service
- 18. Maintain good procurement processes.

## 4. Learning points from the MOMENTUM test phase

This section of the document focuses on the learning points that have emerged from the MOMENTUM test phase.

Generally, the MOMENTUM-TREAT toolkit is user friendly and helpful. It helps clarify the present stage of a particular telemedicine deployment initiative and highlight areas which need further work.

The following list of learning points focuses on issues related to the pre-workshop survey; conditions of use under which the toolkit/indicators are the most relevant; localisation of the survey indicators; the order, structure and editing of the critical success factors and indicators; and the actual wording of the survey tool :

- <u>Workshop attendees</u>: Although the MOMENTUM-TREAT toolkit is not a scientific instrument as such, it is important to check for bias in the distribution of an initiative's representatives who respond to the survey or accept the invitation to the subsequent workshop. Are the different groups and levels in the project organisation represented? Are the various professions represented?
- <u>Workshop attendees</u>: Consider whether stakeholders who are not directly involved in the initiative could be useful at the workshop phase. Could an outsider ask interesting questions during the workshop and draw attention to areas not covered by the project members?
- <u>Stage and situation of application</u>: Consider when to apply MOMENTUM-TREAT. The tool was designed for application at the end of the pilot phase of an initiative before deciding whether or not to opt for large-scale deployment. Could the CSFs be helpful in other stages, i.e. for making the initial project plan and for assessing risk factors during various project phases?
- <u>Stage and situation of application</u>: The MOMENTUM-TREAT toolkit is especially useful in situations where there is a need to get stakeholders from different organisations or sectors to form the same view of an initiative and the challenges it is facing.
- <u>Stage and situation of application</u>: Consider whether the MOMENTUM-TREAT toolkit could be useful for IT projects other than those which concern telemedicine.
- **Localisation**: Bear in mind that, prior to using the MOMENTUM-TREAT toolkit, there will always be a need to adapt the questions to local conditions.
- <u>Structuring and editing</u>: Change the order of the critical success factors and the underlying indicators to a more logical sequence. The test team has suggested starting with the patient perspective and afterwards branching out into the other areas. The MOMENTUM consortium made another suggestion, which is the order represented in the so-called shamrock model. The value of this re-ordering should be tested in real-life before coming to a precise conclusion.

- <u>Structuring and editing</u>: Go through the critical success factors and consider whether:
  - Some of them could be merged (the test team specifically pointed to the success factors concerning legal matters).
  - Some of the success factors could be explained in more detail (the test team specifically pointed to the factors concerning the needs of the primary client).
- <u>Structuring and editing:</u> Edit the MOMENTUM blueprint and the TREAT toolkit so that their terminology is aligned. A seamless connection between the two elements of the toolkit would make it more user-friendly.
- <u>Survey wording</u>: Expand the Likert scale in the survey questionnaire so that "I don't know" becomes an optional response. It should be discussed whether this should be as a part of the middle option or a separate option.

## **Appendix 1: MOMENTUM's 18 critical success factors**

#### Context

- 1. Ensure that there is a cultural readiness for the telemedicine service
- 2. Coming to a consensus on the advantages of telemedicine in meeting compelling need(s)

#### People

- 3. Ensure leadership through a champion
- 4. Involve healthcare professionals and decision-makers
- 5. Put the patient at the centre of the service
- 6. Ensure that technology is user-friendly

#### Plan

- 7. Pull together the resources needed for deployment
- 8. Address the needs of the primary client(s)
- 9. Prepare and implement a business plan
- 10. Prepare and implement a change management plan
- 11. Assess the conditions under which the service is legal.
- 12. Guarantee technology has the potential for scale-up.

#### Run

- 13. Identify and apply relevant legal and security guidelines.
- 14. Involve legal and security experts
- 15. Ensure that telemedicine doers and users are "privacy aware"

16. Ensure that appropriate information technology infrastructure and eHealth infrastructure are available

- 17. Put in place the technology and processes needed to monitor the service
- 18. Establish and maintain good procurement processes.

## Appendix 2: Survey indicators developed by RSD

ICT PSP – Empowering patients and supporting widespread deployment of telemedicine services



*European MOMENTUM for Mainstreaming Telemedicine Deployment in Daily Practice* (Grant Agreement No 297320)

# Long list of indicators reflecting the critical success factors

Please note that all the indicators in this list relate to the **current** project and the telemedicine services applied within it. You should not answer any questions based on the general conditions for or your general attitudes towards the telemedicine solutions in your region or organisation.

#### Critical success factors relating to strategy and management

#### 1. Ensure that there is cultural readiness for the telemedicine service

- In my organisation/region doctors and other healthcare professionals are ready to share clinical information with each other and with the patient i.e. there is a level of trust among all the stakeholders.<sup>4</sup>
- In my organisation/region patients and providers (healthcare professionals) are ready to use ICT (e.g., computers, tablets, mobile phones).
- In my organisation/region financial and other incentives are aligned with the service to be deployed.
- In my organisation/region an underpinning culture embraces technology.
- In my organisation/region an underpinning culture welcomes and even promotes change, innovation and shows openness to new ideas.

#### 2. Ensure leadership through a champion

- In my region/organisation there is one or several influential person(s) who take(s) on a leading role and leads the way towards deployment of the telemedicine solution tested in our project.
- 3. Come to a consensus on the advantages of telemedicine in meeting compelling need(s)
  - In my region/organisation there is general consensus on the current telemedicine solution being the best available solution for meeting a compelling need.

<sup>&</sup>lt;sup>4</sup> This success factor is relevant in both provider-provider services and provider-patient services. However, in a provider-provider service, the willingness to share information with the patient is less important.

• The current telemedicine solution is the best available solution for meeting a compelling need.

#### 4 Pull together the resources needed for deployment

- In my region/organisation the financial resources needed for deployment of the telemedicine solution are available.
- In my region/organisation the IT competences needed for deployment of the telemedicine solution are available.
- In my region/organisation enough time for the training needed in order to implement the telemedicine solution is available.

Critical success factors relating to organisation and management

- 5. Address the needs of the primary client(s).
  - The telemedicine solution addresses the needs of the primary clients.
  - The telemedicine solution is sufficiently adapted to the needs of the primary users.

#### 6. Involve healthcare professionals and decision-makers.

- Healthcare professionals have been involved in the development of the content of this project.
- Healthcare professionals have been involved in the development of the process and time schedule for this project.
- Decision-makers have been involved in the development of the content of this project.
- Decision-makers have been involved in the development of the process and time schedule for this project.

#### 7. Prepare and implement a business plan.

- A business plan for the project has been developed.
- A business plan for the project has been implemented.
- The business plan has been approved by the relevant management level.

#### 8. Prepare and implement a change management plan.

- A change management plan for the project has been developed.
- A change management plan for the project has been implemented.
- A change management plan has been approved by the relevant management level.

#### 9. Put the patient at the centre of the service.

- In this project the patients have been sufficiently involved in the development of the telemedicine solution.
- In this project telemedicine service is based on the patient's needs.
- In this project enough information and training is provided for the patients in order for them to obtain the best results possible from using the telemedicine solution.

#### Critical success factors relating to legal, regulatory and safety issues

#### 10. Assess the conditions under which the service is legal

• Prior to the project we assessed the conditions under which the service is legal.

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#### **11. Involve legal and security experts**

- We have received advice on the project from legal experts.
- We have received advice on the project from experts on data security matters.
- In this project we are not experiencing any data security problems.
- I have confidence in the legality of this project.
- I have confidence in the security of this project.

12. Identify and apply relevant legal and security guidelines.

- The project is carried out in accordance with the relevant guidelines on legal matters.
- The project is carried out in accordance with the relevant guidelines on security matters.

#### 13. Ensure that telemedicine doers and users are "privacy aware"

 In this project the telemedicine doers are aware of protecting the patients' privacy in terms of health information and other information collected during the course of the project.

Critical success factors relating to technical and infrastructural issues

14. Ensure that the information technology infrastructure and eHealth infrastructure are available

- We have ensured that the IT infrastructures needed are in place for deployment and large-scale implementation.
- We have ensured that the eHealth infrastructures needed are in place for deployment and large-scale implementation.

#### **15. Ensure that the technology is user-friendly**

- The telemedicine technology used in our project is user-friendly for patients
- The telemedicine technology used in our project is user-friendly for health professionals.
- The telemedicine technology used in our project does not need an extended training process prior to using it.

#### 16. Put in place the technology and processes needed to monitor the service

- We have set up a system to monitor our telemedicine service ensure that it is running smoothly at all times.
- We have set up a system to solve any incident that may occur during the service
- We have a system which supports the end-users in resolving any doubts that they might experience with the telemedicine solution.

#### 17. Establish and maintain good procurement processes

- We have clear agreements regarding the quality of the deliveries provided by our vendors
- We have clear agreements regarding the service level provided by our vendors.

#### 18. Guarantee that the technology has the potential for scale-up

• We are fully aware of what it takes for the technology to be deployed on a large scale.

• In our region/organisation we are ready for large-scale deployment of the technology.

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• The project will supply the documentation needed to ensure that there is a basis for large-scale deployment of the project.

# Appendix 3: Survey indicators developed by Kristiansand test team

ICT PSP – Empowering patients and supporting widespread deployment of telemedicine services



*European MOMENTUM for Mainstreaming Telemedicine Deployment in Daily Practice* (Grant Agreement No 297320)

## Long list of indicators reflecting the Critical Success Factors

Please note that all the indicators in this list relate to the **current** project and the telemedicine services applied within it. You should not answer any questions based on the general conditions for or your general attitudes towards the telemedicine solutions in your region or organisation.

#### Specialisation

Physician
Nurse
Decision-maker (political or administrative)
Administrator
Automistrator
IT nersonnel
Research and teaching
Other

#### Critical success factors relating to strategy and management

#### 1. Ensure that there is cultural readiness for the telemedicine service

- In my organisation/region doctors and other healthcare professionals are ready to share clinical information with each other and with the patient i.e. there is a level of trust among all the stakeholders.<sup>5</sup>
- In my organisation/region patients and providers (healthcare professionals) are ready to use ICT (e.g., computers, tablets, mobile phones).
- In my organisation/region financial and other incentives are aligned with the service to be deployed.
- In my organisation/region an underpinning culture embraces technology.
- In my organisation/region an underpinning culture welcomes and even promotes change, innovation and shows openness to new ideas.

#### 2. Ensure leadership through a champion

• In my region/organisation there is one or several influential person(s) who take(s) on a leading role and leads the way towards deployment of the telemedicine solution tested in our project.

#### 3. Come to a consensus on the advantages of telemedicine in meeting compelling need(s)

- In my region/organisation there is general consensus on the current telemedicine solution being the best available solution for meeting a compelling need.
- The current telemedicine solution is the best available solution for meeting a compelling need.

#### 4. Pull together the resources needed for deployment

- In my region/organisation the financial resources needed for deployment of the telemedicine solution are available.
- In my region/organisation the IT competences needed for deployment of the telemedicine solution are available.
- In my region/organisation enough time for the training needed in order to implement the telemedicine solution is available.

#### Critical success factors relating to organisation and management

#### 5. Put the patient at the centre of the service

- In this project the patients have been sufficiently involved in the development of the telemedicine solution.
- In this project telemedicine service is based on the patient's needs.
- In this project enough information and training is provided for the patients in order for them to obtain the best results possible from using the telemedicine solution.

<sup>&</sup>lt;sup>5</sup> This success factor is relevant in both provider-provider services and provider-patient services. However, in a provider-provider service, the willingness to share information with the patient is less important.

#### 6. Address the needs of the primary client(s)

- The telemedicine solution addresses the needs of the primary clients.
- The telemedicine solution is sufficiently adapted to the needs of the primary users.

#### Address the needs of the health sector<sup>6</sup>

The telemedicine service addresses the needs for efficiency improvement and improvement of quality in the health sector.

- The telemedicine service is adapted to the need of the health sector for interaction in with the principle of **B**est Efficient Level of **C**are.
- The telemedicine service is adapted to the need for cooperation between municipalities.

#### 6. Involve healthcare professionals and decision-makers

- Healthcare professionals have been involved in the development of the content of this project.
- Healthcare professionals have been involved in the development of the process and time schedule for this project.
- Decision-makers have been involved in the development of the content of this project.
- Decision-makers have been involved in the development of the process and time schedule for this project.

#### 7. Prepare and implement a business plan

- A business plan for the project has been developed.
- A business plan for the project has been implemented.
- The business plan has been approved by the relevant management level.

#### 8. Prepare and implement a change management plan

- A change management plan for the project has been developed.
- A change management plan for the project has been implemented.
- A change management plan has been approved by the relevant management level.

#### Critical success factors relating to legal, regulatory and safety issues

#### **10.** Assess the conditions under which the service is legal

• Prior to the project we assessed the conditions under which the service is legal.

#### **11. Involve legal and security experts**

- We have received advice on the project from legal experts.
- We have received advice on the project from experts on data security matters.
- In this project we are not experiencing any data security problems.
- I have confidence in the legality of this project.

<sup>&</sup>lt;sup>6</sup> Translation into English of the re-titled Norwegian adaption of this indicator to fit with the health sector specifically.

• I have confidence in the security of this project.

#### 12. Identify and apply relevant legal and security guidelines.

- The project is carried out in accordance with the relevant guidelines on legal matters.
- The project is carried out in accordance with the relevant guidelines on security matters.

#### 13. Ensure that telemedicine doers and users are "privacy aware"

 In this project the telemedicine doers are aware of protecting the patients' privacy in terms of health information and other information collected during the course of the project.

#### Critical success factors relating to technical and infrastructural issues

## 14. Ensure that the information technology infrastructure and eHealth infrastructure are available

- We have ensured that the IT infrastructures needed are in place for deployment and large-scale implementation.
- We have ensured that the eHealth infrastructures needed are in place for deployment and large-scale implementation.

#### **15. Ensure that the technology is user-friendly**

- The telemedicine technology used in our project is user-friendly for patients
- The telemedicine technology used in our project is user-friendly for health professionals.
- The telemedicine technology used in our project does not need an extended training process prior to using it.

#### 16. Put in place the technology and processes needed to monitor the service

- We have set up a system to monitor our telemedicine service ensure that it is running smoothly at all times.
- We have set up a system to solve any incident that may occur during the service
- We have a system which supports the end-users in resolving any doubts that they might experience with the telemedicine solution

#### 17. Establish and maintain good procurement processes

- We have clear agreements regarding the quality of the deliveries provided by our vendors
- We have clear agreements regarding the service level provided by our vendors

#### 18. Guarantee that the technology has the potential for scale-up

- We are fully aware of what it takes for the technology to be deployed on a large scale.
- In our region/organisation we are ready for large-scale deployment of the technology.
- The project will supply the documentation needed to ensure that there is a basis for large-scale deployment of the project.

# Appendix 4: The TREAT tool and its adaptation to MOMENTUM

This text was first presented as part of the deliverable D3.3 on validation of the MOMENTUM Blueprint.

In this section, the TREAT tool is described, covering its objectives, its process and expected outcome. In sections **Error! Reference source not found.** and **Error! Reference source not found.**, the adaption of the application of TREAT to the Kristiansand case and the time table are described more specifically.

The objective of TREAT (Telemedicine REadiness Assessment Tool)<sup>7</sup> is to offer a standardised assessment tool to help leaders in regions, health and care organisations, and their funding partners (such as local and national authorities and insurers) assess their readiness to implement telemedicine solutions. The main issue addressed by TREAT is whether the partners in question are organisationally ready to deploy such services.

TREAT is an assessment tool for helping all the key stakeholders in a telemedicine project to work together to optimise a Proof of Concept roll-out. It has been created jointly by the IT company Cisco and RSD in the context of their collaboration on eHealth and is made available to third parties such as MOMENTUM, provided there is no commercial use made of the tool.

The TREAT assessment is based on the key assumption that telemedicine solutions provide value for citizens, providers, and payers in the following ways:

- They improve access to services (locally or in the home).
- They reduce costs (reduced home visits, better control of inappropriate use of primary or secondary care facilities by patients, and fewer emergency admissions to hospital).
- They improve quality (more personalised and tailored care, easier involvement of family and informal carers).

<sup>&</sup>lt;sup>7</sup> This section of the report builds on materials developed in the Renewing Health project, and also submitted to the European Commission for review and accepted by the project's annual technical review team, as MOMENTUM Deliverable 3.1b "Outline of the MOMENTUM Blueprint: *Towards a Personalised Blueprint*" (v0.8).



#### Figure 1: TREAT's underlying assumptions

TREAT is a two-step process. Step one is an online tool for readiness assessment, and step two is a facilitated leadership workshop.

#### The TREAT online tool

The original online tool is a pre-formatted questionnaire that has three to five general indicators per concept. The tool allows a health region to add a further two indicators per concept of its own.

Each section of the questionnaire contains indicators on those baseline issues that are considered necessary for a telemedicine service, and a section on existing desirable tools which could be leveraged to develop a telemedicine programme in situations where the baseline is poorly developed.

In the online tool, each indicator is scaled on a simple 1-5 scale where 1 = do not agree and 5 = fully agree. See the figure below.



#### Figure 2: TREAT scale of responses to indicators

The results generated by the users of this online tool will help the decision-makers (in this case, in Kristiansand, Norway) to assess the current attitudes towards telemedicine on the part of the key stakeholders in the region. They will then lead to discussions which will help the region identify changes and prioritise actions to be taken before a telemedicine solution can be scaled-up and rolled out.

The various components of the set of indicators posed in the online tool are outlined in the figure below.



Figure 3: Components of the TREAT tool

As can be seen from this figure, the TREAT tool operates based on three sets of enablers which all play an important part in deciding the level of readiness of the test site for scaleup, and which should all be identified for the TREAT analysis.

Posing these questions, and examining their results, then leads to a TREAT workshop.

#### The TREAT workshop

The TREAT workshop will be based on the results from the online self-assessment. For the purpose of this workshop, key players in the telemedicine project using TREAT will be brought together to work on issues that can be categorised under the following headings:

- Their current maturity in terms of organisational enablers.
- The telemedicine solution itself.
- Operational enablers for implementing telemedicine solutions.

The TREAT tool is designed to facilitate a workshop with key players. The tool invites workshop participants to examine their local strategy under each heading and their execution targets. Having identified where they stand in relation to the strategy and execution targets, the stakeholders then work together to identify the main gaps, constraints and challenges to achieving their goals. The tool and the results of the online evaluation provide input for starting the discussion.

The expected outcome of the workshop to be organised will include:

- A common understanding between central stakeholders of the challenges that they are facing.
- A first draft of an action plan for the large-scale implementation of telemedicine.
- Input for issues that need to be changed or adapted in existing strategies.

#### Adapting the TREAT tool for use in the MOMENTUM project

The connection between TREAT and MOMENTUM is illustrated below.



#### Figure 4: The connection between TREAT and MOMENTUM

The above figure shows that MOMENTUM's approach permits certain stages to be achieved when applying the MOMENTUM-TREAT model. The 18 CSFs identified by MOMENTUM will feed into the kinds of contextual questions posed in the TREAT online tool. See section <sup>[2]</sup> for detail on the process of developing these questions.

In order to use the TREAT tool in the MOMENTUM project, a new set of survey indicators has been developed. The indicators are based on the work of the four SIGs of MOMENTUM, which worked in-depth on four aspects of successful telemedicine deployment:

- Strategy and management.
- Organisation and management.
- Legal, regulatory and security issues.
- Technical and infrastructural issues.

Each SIG has produced two outcomes: a report under one of these short headings, and a list of CSFs which must be present for large-scale implementation of a telemedicine solution to be effective. Together, the four groups have produced a list of 18 CSFs.

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The MOMENTUM-TREAT survey is based on the 18 CSFs and the four in-depth reports produced by the SIGs. Each indicator relates to one of the CSFs. When needed, more than one indicator may be presented with regard to each CSF. The SIG reports have been consulted throughout the drafting and writing process to make sure that the indicators will actually cover the issues included in the CSFs.

RSD has developed two sets of indicators: one in English and one in Danish. As the SIG reports and all deliveries are in English, it follows naturally that an English list is needed first. The Norwegian test site team is convinced that an English language questionnaire will be an obstacle to the Kristiansand participants' freely stating and discussing their opinions, and therefore prefers to develop a Norwegian language questionnaire. This constraint has been known from early discussions between the RSD team and the Norwegian project manager. The RSD team has no Norwegian language skills. However, since the Danish and Norwegian languages are quite similar, especially in terms of their two written languages, the Kristiansand test site team will be able to translate the Danish-based indicators quickly and easily.

The MOMENTUM-TREAT workshop will be based on the results from the online selfassessment. For the purpose of this workshop, key players in U4H will be brought together to work on the results of the MOMENTUM-TREAT survey.

## Appendix 5: The United4Health project test site in Kristiansand

This text was first presented as part of the deliverable D3.3 on validation of the MOMENTUM Blueprint, and was worked out prior to the workshop in Kristiansand.

#### **Decisions on a test site for MOMENTUM**

This section of the deliverable lays out the way in which the decision on how to test the MOMENTUM findings was made. It identifies how the shift in location of the proposed test site occurred, and how the test phase which is now located in Kristiansand, Norway, was justified.

#### **Original proposed test site**

The site that was initially identified as the location for the purpose of testing the MOMENTUM method was Estonia. The original concept – as described in the project's Description of Work – was that the testing would be led by Estonian eHealth Foundation (EeHF). Originally, it was conceived that, once the testing had been conducted, Estonia's experiences and issues would, first, be documented and, second, shared with the MOMENTUM consortium, and wider.

According to the initial plan, the test phase of the blueprint had to start by spring 2014 and projects were identified in Estonia that would have been suitable for running the test phase at that time. When the delay encountered during the first period of the project postponed this milestone for six months, the consortium was informed that the new timing was no longer appropriate for the initially considered projects. It was therefore decided that the MOMENTUM consortium would explore the potential appropriateness and availability of other sites to test the MOMENTUM approach. All these discussions and decisions took place in both EXCO meetings and in PSC meetings, and with the ultimate approval of the project co-ordinator.

The decision to use the TREAT model as a basis for testing the MOMENTUM results was made in a formal PSC meeting in the fall of 2013. It was decided that the TREAT tool, described in chapter 5, would be a useful supplement to the 18 CSFs.

#### Presentation of various possible test sites

There were three stages of decision-making about alternative test sites for the MOMENTUM findings: a presentation stage, a reflection stage, and an exploration stage. This sub-section outlines all three of these stages.

**Presentation stage**: As a result of the decision to seek another test site, a range of other potential test sites needed to be identified. Services were invited to present their cases at a MOMENTUM PSC workshop held in Athens on 15 May 2014. These cases included:

- a cardiological telemedicine support provided by Deutsche Gesellschaft für Patientenhilfe (Germany);
- KSYOS presented by its Dutch organisational owner
- Cardio Online Europe, a smart ambulance service operating in the province of Puglia in southern Italy

• a chronic obstructive pulmonary disease (COPD) initiative in the municipality of Kristiansand in Southern Norway.

The Norwegian initiative forms part of the U4H project (<u>www.united4health.eu</u>). One of its main benefits is that it is a case which has yet to decide whether to expand and to deploy its telemedicine services, and to what extent.

**Reflection stage**: This stage followed the 15 May 2014 presentation of the Kristiansand COPD initiative. The project co-ordinator and the knowledge gathering and consolidation team (WP3) of MOMENTUM noted that the Kristiansand, Norway, COPD telemedicine services could be a very good and timely candidate for testing the MOMENTUM method. The Kristiansand personnel were informally approached and appeared open to the proposal of testing MOMENTUM's 18 critical success factors using the "Telemedicine Readiness Assessment Tool (TREAT) as a method.

**Exploration stage**: Throughout June 2014, an exploration stage followed. WP3 of MOMENTUM, together with the MOMENTUM project coordinator, investigated the advantages and disadvantages of the various alternative sites available to MOMENTUM for the purposes of testing.

**Selection stage:** The selection process followed. The team came to the conclusion that the Kristiansand pilot project in U4H is the best option for testing.

#### The U4H project test site in Kristiansand

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Kristiansand is one of the locations of the U4H project. Kristiansand is considered to be the best pilot site to test the MOMENTUM model and findings for a number of reasons. They relate to the project stage in terms of scale-up, the staff and location openness, and a number of practical elements related to language and communication. Specifically, they involve:

- The stage at which the Kristiansand U4H site is at in terms of scaling-up.
- The willingness of its personnel to consider testing.
- The availability of Norwegian NST staff on-site to support the local telemedicine doers.
- The opportunity for promoting the MOMENTUM method and findings inside the wider, large-scale pilot of U4H: <u>www.united4health.eu</u>.
- The way in which this approach might therefore assist other pilot site initiatives to scale-up.
- The use of the English language by both local Norwegian staff and Danish RSD staff.
- The familiarity with which Norwegian and Danish staff understand each other's languages.

The MOMENTUM team will support the Kristiansand U4H site with its expertise. Its three main areas of expertise are (1) at the general level of understanding scale-up; (2) the handling of the MOMENTUM critical success factors; and (3) the interface with the TREAT method. The process is described in more detail in section 5.

Clearly, as explained below, the Region of Southern Denmark (RSD) will play a strong role in the test phase, as the testing process is led by WP3 (coordinated by RSD). However, also in particular, the Norwegian partner in MOMENTUM, the Norwegian Centre for Integrated Care and Telemedicine (NST), has been positively involved in negotiations regarding the MOMENTUM test site and is willing to support this exercise through its local representative. During this testing process, MOMENTUM network members – and in particular the WP leaders of the four work packages (WP4-WP7) – will make themselves available to provide coaching, specialised feedback or other support needed by the site. Specific SIG members may also be drawn on to act as coaches.

The initial concept for this test phase is the following:

- RSD (WP3) will hand over the MOMENTUM "toolkit" to Kristiansand, Norway.
- RSD (WP3) will support Kristiansand in the design of the pre-workshop questionnaire inspired by the MOMENTUM 18 CSFs, i.e., by sending a first list of possible indicators that can be adapted.1
- RSD (WP3) will prepare an electronic questionnaire using the SurveyXact tool and distribute it to respondents pointed out by the Kristiansand team.
- RSD (WP3) will offer to Kristiansand the tools needed to analyse the questionnaire results.
- RSD (WP3) will coach Kristiansand in how to run the MOMENTUM workshop.
- Kristiansand will become self-sufficient and autonomous as a result of the above coaching.
- Kristiansand will obtain from this exercise a stakeholder consensus on a list of issues and actions points to be considered for it to be organisationally ready to move to deployment on a large scale and apply the changes needed for successful deployment.
- RSD (WP3) and Kristiansand will co-author a short "lessons learned" report on the process used, the indicators posed, the workshop run, and the implications considered for the 18 CSFs.

#### Characteristics of the test site

The purpose of the Kristiansand test site project in U4H is to implement large-scale telemedicine solutions within the fields of chronic obstructive pulmonary disease (COPD), diabetes and heart failure. The U4H project runs from 1 April 2014 to 31 December 2015.

The Kristiansand test site area has the following general population and geographic characteristics:

- Population: 292,225 inhabitants.
- Area: 16,493 square kilometres.
- Two counties.
- 30 municipalities.
- A large variation in the size of municipalities: The smallest has 929 inhabitants, and the largest has 84,476 inhabitants.
- A coastline with a high population density, and inland mountainous, rural areas.

#### The aims of the U4H test site

The project has the following aims, in its own right:

- To develop and test coherent and cost effective clinical pathways for COPD patients by means of telemedicine solutions.
- To improve quality of life and increase COPD patients' responsibility for their own health.
- To prevent a loss of functions and worsening of the COPD condition on the part of the patients.

See the figure below for the project setup.

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#### Figure 5: The Kristiansand U4H setup

The health care professionals carrying out the U4H project involve municipal home care nurses, general practitioners and hospital staff. The intervention enables the patients to communicate with health care professionals and perform certain measurements online via a tablet and a secure server.

The interventions that are included involve daily video/telephone communications and the taking of patients' pulse, and other statistics gathered by posing six separate questions, and optional weekly text messages and prompts. These differ in intensity over periods related from admission to discharge.

The patient's data travel via a secure network to a gateway. The data is collected in a health record which can be accessed by a municipal health worker, the patient's GP and a hospital based lung specialist, as shown in the above illustration.



The Kristiansand area has experienced up to 365 hospital admissions related to this particular disease. See the figure (below) for more details.



The intervention is to last for 12 months after the discharge of the patient(s), but there will be a decreasing intensity of contact. This is called a step-down intervention.

The Kristiansand project includes:

- Testing telemedicine equipment for follow-up of 200 COPD patients after discharge from hospital.
- Providing the basis for decisions on the planning of telemedicine centres.
- Reducing readmissions for the 200 project patients (compared to historical data from 100 patients).

#### **Organisation of the Kristiansand U4H project:**

The partners in the U4H project are the Hospital of Sørlandet, the University Hospital of Northern Norway, the University of Agder, the NST, and the municipality of Kristiansand.

The project organisation is illustrated in the following figure.



#### Figure 7: Organisation of the U4H project

Participants from all levels of the project organisation will be asked to take part in the MOMENTUM/TREAT survey and subsequent workshop.

## **Appendix 6: Test site interview guide**

Interviewers:	Claus Duedal Pedersen and Lise Kvistgaard (RSD)
Interviewees:	Wenche Tangene, (SSHF) and Undine Knarvik, (NST)
Date:	3 November 2014

The interview will be conducted in Norwegian and Danish and take place by means of a Skype call. The results will subsequently be translated into English by the RSD team.

Four sets of questions have been prepared. They relate to:

- The usability of the MOMENTUM pre-workshop survey.
- The ease-of-use of the MOMENTUM workshop.
- The applicability of the MOMENTUM 18 critical success factors to a scale-up site.
- The value offered by the MOMENTUM toolkit to telemedicine doers.

The proposed interview questions are listed below, grouped under six headlines:

#### 1. Overall first impression

- Overall usefulness of the MOMENTUM toolkit.
- Relevance of the four main areas and the critical success factors (CSFs) covered in the four MOMENTUM (SIG) reports.

#### 2. Step 1 - Preparing the survey

- Relevance of the SIG questions.
- The selection process: how did you set up criteria and assess the relevance of individual questions?
- Are there CSFs and their underlying questions which you have chosen to leave out entirely?
- If yes, why?
- Selection criteria for respondents.

#### 3. Step 2 - The survey phase

- Receiving the results of the questionnaires.
- Analysing the answers; usefulness of the SurveyXact tool.

#### 4. Step 3 - Preparing and running the workshop

- Usefulness of the answers to the questionnaire.
- Usefulness of guidance from RSD team (if relevant).
- 5. Step 4 After the workshop
  - Value of the practical outcome of the workshop.
  - Which parts of the MOMENTUM-TREAT toolkit were useful?
  - Which parts of the MOMENTUM-TREAT toolkit were not useful?

- Any suggestions for improving the MOMENTUM-TREAT toolkit?
- Has the MOMENTUM-TREAT toolkit helped you get a clear picture of your readiness for upscaling/deploying your telemedicine solution?
- Does the MOMENTUM-TREAT toolkit work "on its own" i.e., can it be described as a "self-managing tool"?
- Would you consider using the MOMENTUM-TREAT toolkit for a future project?
- Would you recommend others to use the MOMENTUM-TREAT toolkit for a project?
- 6. Conclusion: Learning points from the MOMENTUM test phase and further work to be done
  - The most important learning points from the Kristiansand test.
  - List of any further future revisions that need to be made to the 18 CSFs.
  - List of any further possible in-depth research that needs to be undertaken on the 18 CSFs (e.g., as part of potential PhD-related research).