

Deliverable

D6.3: Patient-Centred Assessment Framework

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Deliverable abstract

The present deliverable details an assessment framework aligned with MEAT (Most economic Advantageous Tender) awarding criteria. It will put the patient at the centre of the approach by proposing measurements and indicators sufficiently sensitive to detect and enable the quantification of the value potentially gained.

Deliverable Review

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Answer	Comments	Type *	Answer	Comments	Type *

Is the deliverable in accordance with

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* Type of comments: M = Major comment; m = minor comment; a = advice

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INTRODUCTION

The tasks undertaken in WP6 aims to encapsulate and clarify the outputs generated in EURIPHI by the tasks conducted earlier and in parallel. Innovative solutions have been identified in the fields of rapid diagnostic (RD) tools in infectious disease and in the most promising integrated care services (IC). The identification of specific demands and prioritization has been done by expert partners and through the establishment of the Health Regional Network including stakeholders. Following an open market consultation, case testing was performed in order to validate and refine the demands identified on both fields.

All this input will feed the different core activities for a suitable cross border Value-based PPI/PCP, which entails the redesign of clinical pathways having a strong focus on improving health outcomes, and more robust health outcomes measurement, consideration of additional benefit of value for health care actors and resulting in economic most advantageous, cost-efficient purchasing.

The present document contains two principal tools that will be used in two potential procurement on both Rapid Diagnosis and Integrated care:

- i) The overall assessment framework.
- ii) The methodologies to award single functional criteria and to use a multi decision criteria approach to select the offer with the highest value creation being this the most economically advantageous offer.

Given that the type of procedure has yet to be decided for both fields, these will be hypothesized in two different contracting procedures:

1. Rapid diagnosis tool for antibiotic stewardship of VAP – **Open Procedure**⁴
2. Integrated risk assessment tools on Stroke (as a result of the ICPO03 in D3.3/D3.4): **Pre-Commercial Procurement of Innovation (PCP)**

In the case of the PCP procedure, which falls out the guiding principles of EU public procurement legislation, the evaluation framework will also contain the methodology for the monitoring of contract implementation during Phase 1, 2 and 3.

Assessment in both fields needs to be aligned with the objectives of the procurement and is a key part of the procurement process. The purpose of this framework is two-fold: first, to define a coherent awarding criterion that will be part of the tender documentation, and secondly, to outline the future service evaluation and scoring process. The purpose of an evaluation process in sourcing is to identify which bid offers the best value for money i.e. the most economically advantageous tender or proposal. The criteria that are specified in the invitation to tender document are the basis for the buying decision⁵.

For this reason, robust metrics will be needed to be developed to back up the awarding decisions and to ensure that patient perspective becomes a core aspect of the future technology and service implementation.

Also, a Willingness to Pay (W2P) method will be defined in order to, in future terms (it will be theoretically described on the present report), assess the tenders according to the defined awarding criteria. W2P method is an alternative to the classical weighting of criteria and using rankings as it

⁴ Other ordinary procedures (Restricted) and extraordinary procedures (Competitive dialogue, competitive procedure with negotiation,...) under the EU public procurement directives might also be applicable: <https://ec.europa.eu/docsroom/documents/25724/attachments/1/translations/en/renditions/native>

⁵ <https://www.purchasing-procurement-center.com/tender-evaluation.html>

assigns a monetary value to non-monetary criteria such as outcomes or other benefits for HCPs. Even though the present document will not go into detail regarding the application of the method to potential tenders, a description of the method will be done with the aim to understand its usability.

STATE OF THE ART

Integrated risk assessment tools on Stroke: Pre-Commercial Procurement of Innovation (PCP)

Integrated risk assessment tools on Stroke

As stated in D3.3, population and chronic condition risk assessment tools need to be integrated into the care model to identify people at risk to enable appropriate care and support to be targeted at those who are most likely to benefit.

The integrated risk assessment tools are needed to inform primary and secondary prevention strategies at the individual and population level, which would impact positively in Population Health strategies and benefit strategies for Chronic Condition Management.

In the case of stroke, risk assessment online tools are largely limited to a single language domain, and not integrated with local health records or professional platforms and records. A survey of the state of the art in the market showed the use of pull media only and no interface with health systems either to draw risk parameters or to deliver assessment results back into the relevant systems.

The operation of current risk assessment models is imperfect: The ASCVD risk assessment, for example, was found to overestimate hypertension risk in adults, both for those without diabetes overall and across socio-demographic subgroups. Another tool, SCORE, can be used by health professionals to assess their patients, but it is not integrated into their own systems and relies on manual entry of patient parameters by the health professional. Further to this, these tools in most cases “tend to use ‘snap-shot’ measurements of risk factors taken at the time of assessment – such as cholesterol levels and blood pressure – to predict the patient’s overall risk of cardiovascular disease. They do not account for a patient’s medical history and how their risk factors have changed over time, nor do they differentiate the risk by specific heart and circulatory diseases, such as heart attacks, strokes, heart failure or abnormal heart rhythms.” Another shortcoming of such score assessments is that they measure a 5 or 10-year risk for patients and thus under-estimate the life-time risk for younger patients, who are increasingly affected by a stroke.

People who have had a stroke or a Transient Ischemic Attack (TIA) are at increased risk of future stroke, especially in the first few months following a TIA or a stroke. Research shows that patients who suffer a recurrent stroke have poorer outcomes than those who suffer a first stroke. The risk for a recurrent stroke is six times greater than the first stroke, indicating the importance of secondary stroke prevention and timely secondary prevention has proven to be effective in reducing recurrent stroke in patients with stroke or a TIA.

As it is observed, lifestyle is impacting on the risk of having a stroke and there is currently no device that can properly assess the risks of a stroke, taking into account all parameters. The issue is about (easy) integration of the different technologies/devices/apps rather than development of a new one.

The new IT device should be a (cross-institutional) communication IT platform integrating different ‘platforms or data sources’ connecting the different stakeholders (patient, social care, clinicians, other health care practitioners). It must bring both clinical and non-clinical data together and will provide

data to both care practitioners and patients in order to manage stroke risk factors (e.g. blood testing, blood pressure, medication adherence) and to prevent from having a stroke.

The tool should:

- Use lifestyle data, patient tests and -data
- (Inter-) Connect the care practitioners' team to the high-risk stroke patient
- Monitoring stroke risk factors
- Analyse, assess, and predict the risk of a stroke appearance (based on an intelligent algorithms and weighting risk factors)
- Send out alarms, alerts and/or signals to patients and/or the care team

Pre-Commercial Procurement of Innovation (PCP)

The Pre-Commercial Procurement instrument is an approach for public procurement of research and development (R&D) services; where the public buyer does not reserve all the benefits from the research and development service contract exclusively to itself, but shares them with the economic operators under market conditions^[1]. Thus, PCP aims to allow the alignment of innovation supply and demand sides, supports and promotes competition of suppliers and the opportunity for SME to, in different collaborative schemes, get into the public procurement market.

In detail, In the EU context, PCP aims to enable public procurers and suppliers to:

- Develop breakthrough innovative solutions for the societal challenges of the future (including in healthcare and well-being).
- Facilitate the access of new innovative players (e.g. start-ups, SMEs) to the public procurement market.
- Share the risks and benefits of designing, prototyping, and testing new products and services between procurers and suppliers.
- Create optimum conditions for wider commercialisation and take-up of R&D results.
- Reduce market fragmentation, reducing costs for procurers and creating wider markets for companies.
- Act as a "seal of approval" for innovative companies confirming the market potential of new emerging technological developments, thereby attracting new investors.

Although the falling out of the European public procurement directive (2014/24/EU), the procurement framework for the Integrated Care PCP will adopt the guiding principles in line with the EU Treaty principles. In general, a competitive tender process carried out in an open, objective, and transparent manner should achieve the best value for money in public procurement. Essential principles to be observed in conducting procurement for a public contract include:

- Non-discrimination
- Equal treatment, transparency,
- Mutual recognition, and
- Proportionality.

In addition, it will observe the compliance with the R&D services requirement.

In case there is an intention to include both the development and purchase elements in the procedure, the recommendation would be to proceed with an **innovation partnership procedure**, which allows for the combination of development and purchase elements tailored to public requirements, with specific rules in place to ensure equal treatment and transparency.

In simplified terms, innovation partnership can be understood as a restricted procedure followed by a contract containing several milestones comprising the research and development part (creating innovative solution) and the supply of the newly found solution (supplying the innovative solution adapted to the specific needs of the public procurer)⁶.

Rapid diagnosis tool for antibiotic stewardship of VAP – Open Procedure

Rapid diagnosis tool for antibiotic stewardship of VAP

As stated in deliverable D4.2 Final Procurement Demands, appropriate antibiotic therapy needs to be based on the pharmacokinetics and -dynamics, adequate dosages with enough penetration in lung tissue and adapted to local antibiotic susceptibility profile^[2]. It is also recommended that the de-escalation of therapy starts as soon as the patient is stable and microbiology data are available. Both European and USA guidelines prefer to treat a patient for 7-8 days. Each treatment of VAP patients starts with empiric treatment unless low clinical susceptibility or negative culture. This treatment should be based on the local pathogens presents; antibiotic resistance pattern, risk factors of the patient and the type of care.

It has been witnessed the emergence of new diagnostic tools over the last few years that might allow to promptly initial antibiotic therapy or rapid de-escalation after the initial dose. These diagnostic tools are capable of guiding antibiotic treatment, particularly in the case of broad-spectrum antibiotics in Intensive Care Units. Current recommendations for management of VAP in patients at risk of multi-drug resistant pathogens call for prompt broad-spectrum empirical treatment, including dual Gram-negative coverage. This recommendation is supported by consistent findings that delayed appropriate antibiotic therapy in multi-drug resistant pneumonia is associated with increased mortality. However, the definition of “patients at risk for multi-drug resistant pathogens” is very broad and results in massive overtreatment with broad-spectrum antibiotics. Kett et al showed that adherence to empirical treatment of these patients was associated with increased mortality^[3]. A potential explanation for this increased mortality was the antibiotic-specific toxic effects of colistin, aminoglycosides and fluoroquinolones. ATS-IDSA guidelines recommend that the broad-spectrum empirical treatment is de-escalated when possible, based on clinical response and microbiological data. The goal of de-escalation is to limit the emergence of resistance and to reduce mortality.

A set of functional requirements was defined by experts on VAP field, taking into account different level outcomes at a different level (such us Patient, Hospital, etc.). The results can be observed in the deliverable D6.2 Functionalities and technical prescriptions.

Open Procedure

An Open Procedure is where the procurement exercise is open to all suppliers. This means that any interested supplier can bid, within the tender timescales, and the procurement officer cannot limit the number of bids it receives. This is normally used by public sector procurement officers where there is likely to be limited interest in an opportunity, to ensure maximum competition (and therefore value for money for the taxpayer). This procurement procedure is a one-stage process i.e. all selection and award criteria are evaluated in one stage

The main points in the Open Procedure are:

⁶ <https://ec.europa.eu/docsroom/documents/25724/attachments/1/translations/en/renditions/native>

The contract is advertised by the public body at the Contracting Platform. The Contract Notice will clearly state that the contract is being carried out using the Open Procedure; Suppliers read the Contract Notice and, if interested in bidding, should note interest in the contract to view the invitation to tender (ITT) and any associated documents in Contracting Platform i.e. the procurement documents (or Tender if the procurement officer is using this system);

In most cases, public bodies must make available all of the tender procurement documents via the internet. This access must be unrestricted, free of charge and made available from the date of publication of Contract Notice. This is the only procurement process where the procurement officer must make the procurement documents available at the outset of the process.⁷

Therewithal, it will be important to ensure that scrutinize the vendors and the supportive data to verify the effective performance when assessing the vendors' offers. While these will be ensured by new regulatory systems as requirements under the IVDR, until this in place, it is important to define with a cross-border approach for the evaluation. As part of the ability to participate, for example, samples might be requested.

The open procedure provides opportunity for all vendors to apply and evaluation done, which might be appropriate if only the tests will be procured. It might be important to consider the opportunity of going through a pre-tender dialogue, open market consultation, and evaluation of market readiness to understand if there are other alternative solutions in support of the management of VAP.

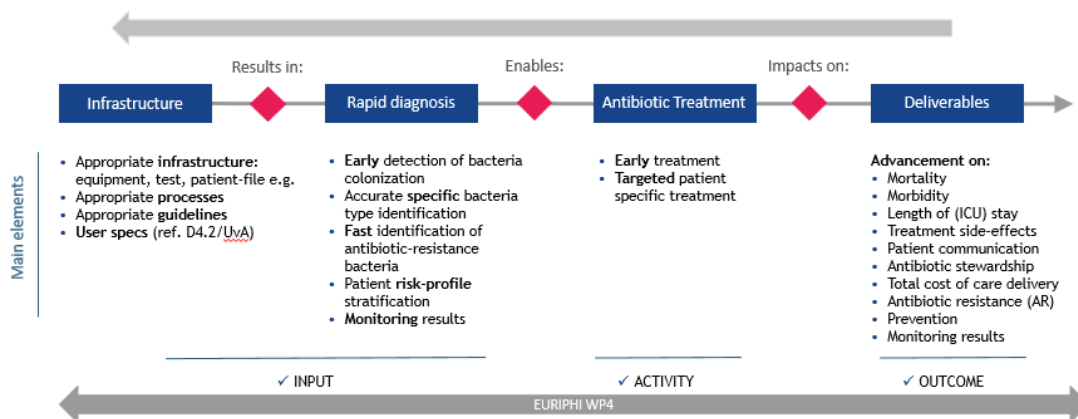


Figure 1. From a rapid diagnostic test on VAP towards management of hospital-acquired respiratory infections

⁷ <https://www.supplierjourney.scot/open-procedure>

METHODOLOGY

MEAT Framework

The overall framework that will be used to define the awarding criteria and indicators of success in both procedures will be based on the MEAT Framework.

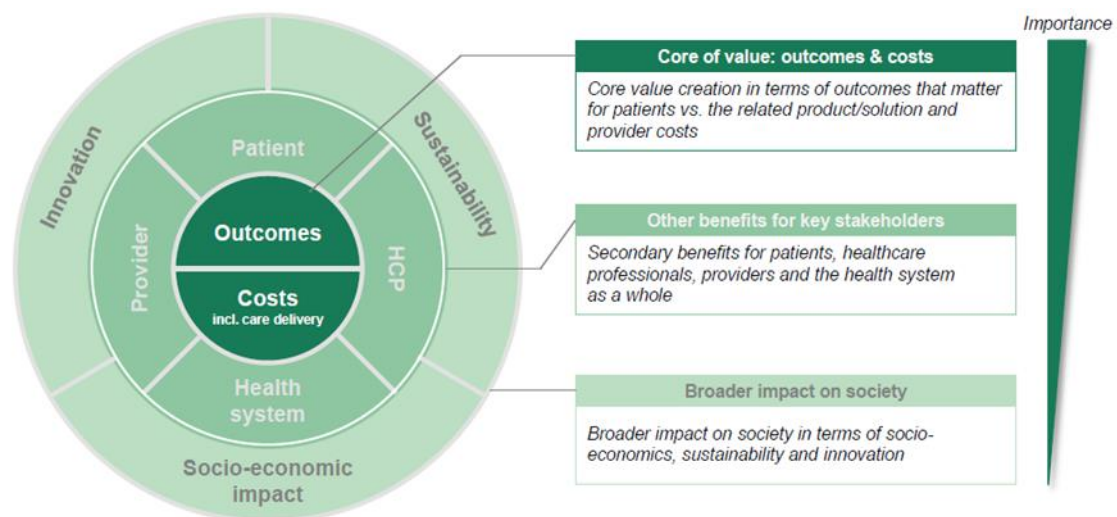


Figure 2. Overall MEAT Framework.

The most economically advantageous tender (MEAT) criterion enables the contracting authority to take account of criteria that reflect qualitative, technical and sustainable aspects of the tender submission as well as price when reaching an award decision^[2]

In any case, awarding criteria should always respect^[3] the following aspects:

- Not confer unrestricted freedom of choice
- Ensure the possibility of effective competition
- Allow the information provided by the tenderers to be verified
- Be linked to the subject-matter of the contract.

Value-based procurement helps answer three key questions of the contracting authority/procurer:

1. What are we going to buy? (Requirement definition)
2. **What matters to us? (Criteria selection)**
3. How much are we willing to pay? (Monetary value assignment)

This document is focused on answering the **second question** on both potential tenders, while introducing the Willingness to Pay method that will be applied once the tender is formalized.

Adapted MEAT Framework to both Integrated Care and Rapid Diagnosis

MEAT VBP framework was adapted to both fields of interest: Rapid Diagnosis and Integrated Care. This was possible thanks to the adaptation of considered VBP criteria as well as generated ad-hoc VBP criteria. This adaptation enables a better comprehensive appreciation of the benefits from the different perspective of patients and health care actors, society and allow to identify economic most advantageous offerings.

The update of the Meat Value Based Procurement tool also facilitates the effective use of the tool within a cross-border setting and obtain the EURIPHI "MEAT Value Based PPI" Tool, including a guidance to facilitate the use in practice and ensuring compliance with national requirements. The "Meat Value Based PPI" ensures to be supportive throughout the different phases of the procurement process with common pre-tender and evaluation and localized awarding, decision making and contracting

In the case of Integrated Care field, the adaptation was based on WP3 stroke IC elements paper, literature review, IFIC input, BCG experience and experts' interviews. On contrary, in the Adapted MEAT VBP framework for Rapid Diagnosis was based on WP4 materials, literature review, University of Antwerp and PPO inputs, BCG experience and experts' interviews. Results can be observed as a result of Milestone 6 and 7 from Work Package 2, provided by Boston Consulting Group (BCG), on **Annex I** on Integrated Care and **Annex II** on Rapid Diagnosis.

In the case of Integrated Care field, a prioritization exercise was performed in May 2019 in Paris (WP2). Doing this, each adapted criterion was scored among the rest in order to prioritise which Outcomes were more applicable to the field. Although the whole prioritization results can be observed in WP2 deliverables and Annex III, a first big layers' rating is outlined:

- Outcomes – **27,1%**
- Costs - **21,3%**
- Patient secondary outcomes – **17,2%**
- HCP secondary outcomes – **5,9%**
- Provider secondary outcomes – **1,6%**
- Health System secondary outcomes - **14,4%**
- Innovation impact - **5,8%**
- Sustainability impact - **1,6%**
- Socio-economic impact – **6,4%**

A second iteration process was performed under WP5 tasks in order to apply the first iteration results of the resulted MEAT-VBP Framework to each of the defined Integrated Care Procurement Objectives (ICPOs). In the case of the *ICP03- Integrated risk assessment tools on Stroke*, although no major modifications were considered, partners showed some concern on how the present MEAT-VBP Framework could be applied in a PCP process.

In the case of rapid diagnosis field, this exercise was not performed. Therefore, this will have to be done by Procurement Organisations (POs) when preparing the potential tender. A decision will be needed if a rapid diagnostics test is what is bought or a diagnosis management. In the latter case in addition to the RDKFR (D2) additional requirements will need to be defined responding to the needs to optimize the management and resulting to listed output and what matters to us (see Figure 1 above).

What matters to us? (Awarding Criteria selection)

Any criteria used must be linked to the subject-matter of the contract in question. The Regulations state that award criteria shall be considered to be linked to the subject matter of the contract where

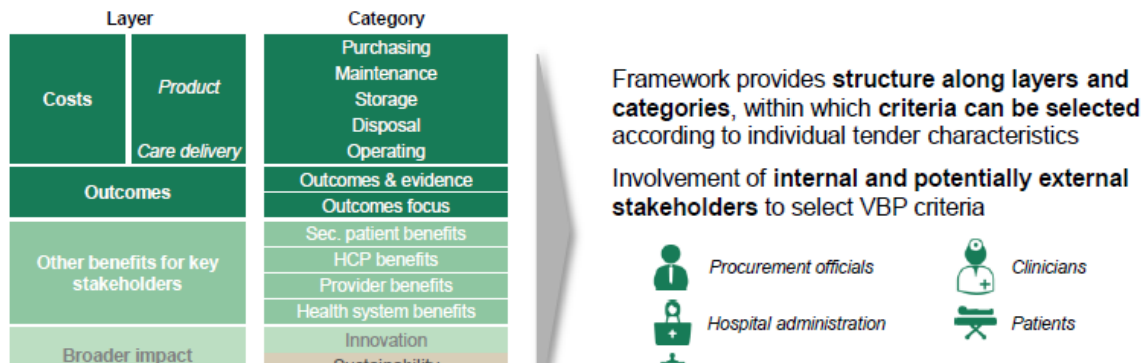


Figure 3. MEAT VBP Framework - What matters to us?

they relate to the works, supplies or services to be provided under that contract in any respect and at any stage of their life-cycle, including factors involved in:

- the specific process of production, provision, or trading of those works, supplies or services; or
- a specific process for another stage of their lifecycle, even where those factors do not form part of their material substance.

As early as possible in the process, preferably when the requirement is advertised in the OJEU, the criteria will be published and advised to the potential tenderers. The relative weighting of each criterion used to assess the submissions must be stated or, where this is not possible for objective reasons, they should be stated in descending order of importance.

Quite often, the award criteria stated in the contract notice and/or the tender documentation will be made up of a number of sub-criteria. These sub-criteria and their weightings should also be notified to the tenderers - the sub-criteria detail could probably be provided within the tender documentation rather than in the contract notice.

The legislation lists the following criteria (although this list is not exhaustive):

- quality
- price or cost using a cost-effectiveness approach
- technical merit
- aesthetic and functional characteristics
- accessibility
- social characteristics
- environmental characteristics
- innovative characteristics
- after-sales service and technical assistance
- delivery conditions such as date, process, and period

It is also permissible for the cost element to take the form of a fixed price or cost on the basis of which tenderers will compete on quality criteria only. Award criteria must not have the effect of conferring an unrestricted freedom of choice on the contracting authority.

When including sustainability-based criteria it is important to remember these criteria must be 'linked to the subject matter of the contract' and be proportionate for the contract. The contract notice must

indicate that the MEAT criterion will be used to award the contract. The details of the individual award criteria should be stated in the contract notice and must be stated in the contract documentation. Once stated, the criteria must be applied as stated and cannot be changed at a later date, particularly not after the tender return deadline.

Scoring Process

In this phase rules or functions for converting performance measurements into scores were defined (i.e. partial value functions). In our two specific cases, we translated performance measures (which used different units for each criteria/sub-criteria) into a common scale, which were bounded between a 0 to 100 scale, when 0 represents the worst outcome (or null/no exist) and 100 the best outcome expected.

It is important to highlight the rationale behind the value functions used in our estimation of the MEAT. As it will be observed on each field section, different approaches were used in the scoring process when determining the score of the tender offers on Rapid Diagnosis and Integrated care.

With the previous steps we defined, first weights (relative importance) for each layer/criteria/sub-criteria independently of the product alternatives to provide consistency across comparisons; second we set the performance measurement thresholds for each criterion per each alternative product (i.e. the products from different companies), and third we designed a performance matrix for each product alternative.

Therefore, at this point it is necessary to transform the performance measurements results into scores to obtain the MEAT; the development of value functions was the approach chosen to do it. A function is a "relation from a set of inputs to a set of possible outputs where each input is related to exactly one output". In our case, for each single value functions developed the inputs were coming from the performance data of each criterion/sub-criterion and the resulting output were the scores of each performance value (e.g. a performance value of 95% in the rapid diagnostic tool sensitivity answer will have a score of X; while a performance value of 85% will have X-x).

The value functions were developed in order to fit in the best way to the performance measurements defined for each criteria, also considering the evidence found on the literature review for each product and criteria.

Considering all the technologies under assessment, two different value functions have been used to find the best fit for performance measurement of criteria/sub-criteria:

- Linear functions [defined as $f(x)=ax$]
- Stepwise approach

Where the parameter is any real number (data on performance value) and x is the input value (a score between 0 to 100). Depending on the criteria, three, four or five cut-off percentages were defined for assigning scores.

As shown in Figure 3, the performance measurement threshold for « Reduction on time-to-result response » criteria was defined as « <15 mins = 100 score; 15-45 mins = 75 score; 45min-2h = 50 score; 4h-8h = 25 score; >8h = 0 score »; these five % from now are called "5 pair of data" referring to 5 cut-off percentages for assigning scores". In the case of « sensitivity rate » criteria, the performance measurement is split in 4 cut-off percentages: >95%=100 score; 90-95%= 75 score; 80-90%=50 score; 70-80%=25 score; <70%=0 score.

As an example of linear function utilization, we can observe the technical staff time and/or reproducibility rate criteria (the measures and scores are linearly defined). On the other hand, a

number of criteria have been defined using a stepwise approach, meaning that no proportional rules are followed when defining the scorings – e.g., reduction on ICUs length of stay)

We can see that for a time-to-result response of 32 minutes the score will be 75 points, or for a time-to-result response of 47 minutes will be 50 points.

Patients secondary benefits	Faster, more accurate identification of patients at risk of infections enables better prevention	Time-to-result response	%	<15 mins 100; 15-45 mins 75; 45min-2h 50; 4h-8h 25; >8h 0	
		Sensitivity rate	%	>95% 100; 90-95% 75; 80-90% 50; 70-80% 25; <70% 0	
		Specificity rate	%	>95% 100; 90-95% 75; 80-90% 50; 70-80% 25; <70% 0	
		Positive predictive value (PPV) rate	%	>95% 100; 90-95% 50 ; <90% 0	
		Negative predictive value (NPV)	%	>95% 100; 90-95% 50 ; <90% 0	
		ESKAPE pathogens identification	%	5 pathogens 100; 4 pathogens 75; 3 pathogens 50; 2 pathogens 25; <2 pathogens 0	
		Reproducibility rate	%	>95% 100; 90-95% 50 ; <90% 0	
	Improved antibiotic stewardship due to precise diagnostic information, antibiotic treatment only if indicated,	%	Reduction on the use of Antimicrobial prescriptions	%	% reduction (>10% 100; 5-10% 50; 1-5% 25; <1% 0)
	More accurate diagnosis enables personalized therapy, lower care burden and empowered patients	%	Reduction on complications on ICUs due to wrong antimicrobial prescriptions	%	% reduction (>10% 100; 5-10% 50; 1-5% 25; <1% 0)

Figure 4. Awarding Criteria definition for Patients secondary benefits

Willingness to Pay Method - How much are we willing to pay?

The willingness to pay (W2P) method assigns a monetary value to non-monetary criteria such as outcomes or other benefits for HCPs. The method aims for comparability between monetary and non-monetary terms and is opposite to the traditional method, which transforms costs in monetary terms into points or weights.

Although classical weighting methods might be utilized in Value-Based Procurement, W2P is a recommended method to be used in to put a monetary value on the key outcome and other benefits criteria. The cumulated monetary value of the fulfilled outcome and other benefit criteria is then subtracted from the total supplier bid and procurer total cost of care impact to identify the most economically advantageous offer.

Main advantage of willingness to pay method is the involvement of clinicians and other stakeholders in prioritizing and valuing the clinical and patient reported outcomes and overcoming limitations from traditional score-based approaches (e.g., converting costs into scores, ranking paradox and relative scoring manipulation).

Despite the fact that this methodology will be just taken into account from a **theoretical perspective and its implementation will not take part in the present report**, the use of the W2P value assignment method in healthcare public procurement is increasing, with strongest adoption in the Nordics and the Netherlands. The W2P value assignment method is used in a wide range of medtech product categories (e.g. OR theatre integration, hip implants, dialysis equipment). In EURIPHI, if bids are evaluated according to a combination of price and quality, monetary value should be assigned to quality characteristics (quality-to-price scoring), rather than by transforming bid prices into scores (price-to-quality scoring). Some key lessons are to be followed when applying W2P for EURIPHI Rapid Diagnosis or Integrated Care modules.

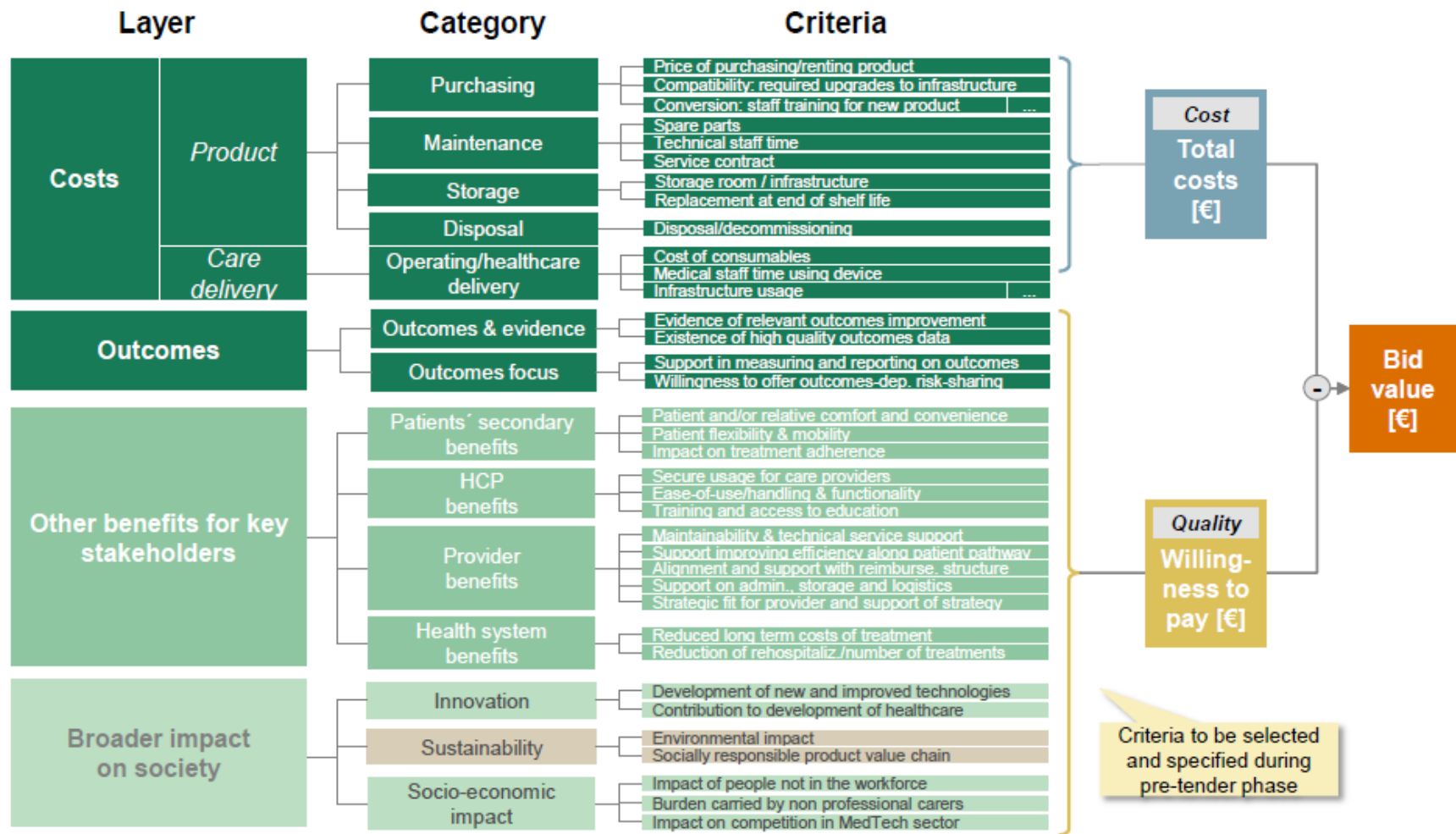


Figure 5. Willingness to pay Methodology within MEAT VBP Framework

As the definition of the MEAT state, the “economic” component needs to be estimated by translating all the performance measures of each product into monetary values. This process is based on the monetary value by layer/criteria/sub-criteria and the scores.

In the literature, several methodologies are mentioned to estimate the willingness-to-pay (WTP) to elicit the economic value that people give to healthcare technologies. Two main methods are usually employed: 1) Contingent valuation method (CVM) and, 2) Choice experiments (CE), which latter have been named conjoint analysis^[4]. These methods have generally been used to set a monetary value on a package of health and/or non-health benefits in the context of a specific intervention. They usually require the design of specific, and sometimes sophisticated and time-consuming, studies. In this case, there is a need to set a monetary value for each criteria/sub-criteria defined for each technology under assessment. Nevertheless, due to limitations in both time and human capital availability to obtain WTP in this pilot test; none of the above-mentioned academic methods were used. The method selected was less sophisticated but still equally rigorous, easier, and less time consuming, and it is used in practice fostering a multidisciplinary decision making.

One way to ascertain the WTP is asking directly professionals participating in the definition of criteria and their weights, how much they value each criterion in monetary terms. Nevertheless, the professionals denied doing so arguing that they do not have any idea on how to value the criteria, they have never done it before and that it is very difficult for them to state an exact amount of money that they were willing to pay to obtain the maximum level of performance for a specific criterion.

Therefore, to set the monetary value of each criterion by technology, we designed the “ideal product” for each technology under assessment. This ideal product would be the product with the best performance, i.e. with 100 points, for each criterion/sub-criterion. The next step was to look for all the criterion/sub-criterion which their performance measure was in monetary unit (Euros), for instance, purchasing price, cost of consumables, etc. Summing all these type of criterion/sub-criterion and taking into consideration their weights, we obtained a monetary value that was used to anchor the other criterion/sub-criterion not expressed in monetary terms (i.e. to be used in the calculation of the WTP for the other criteria).

It's important to note that in the calculation of the total amount of “money”; some criteria had a positive monetary value, i.e. represent a cost for the hospital (negative effect for the hospital) (for instance: purchasing price); and other criteria had a negative monetary value, i.e. represent savings or an economic benefit for the hospital (positive effect for the hospital) (for instance: spare parts, training and access to education, support of HCB strategy, reduced long term cost of treatments). The negative/positive effect of some criteria/ sub-criteria was established in this way since the objective is to find out the MEAT, that means the one with the lowest amount in monetary terms (i.e. economic most advantageous). This to make the decision amongst the different offers.

The W2P is an expression on willingness to define how much something is valued, however it is not the effective amount that will be paid, only to enable decision making. This willingness to pay will also be specific and linked to what is valued by the multidisciplinary team

Aggregating values

The final step is to aggregate these value functions taking into account the relative importance (weights given) of different criteria. The additive aggregation (also known as weighted sum approach) is the most common value measurement modelling approach and it is based on the following equation^[5]:

$$V(a) = \sum_{i=1}^n w_i v_i(a), \text{ equation for scores} \quad (1)$$

Where $V(a)$ represents the overall value, w_i represents the relative importance (weights in our case), and $v_i(a)$ represents the score of the criterion for alternative product A, respectively.

We constructed another equation using the monetary units from each criterion/ sub-criterion to estimate the MEAT across the different alternative products.

$$V(a) = \sum_{i=1}^n w_i m_i(a), \text{ equation for MEAT} \quad (2)$$

Where, m_i represents the monetary value of alternative product A on a specific criterion. This weighted sum approach is easy to understand and the parameters can be changed in real time to observe their impact when changed ^[6](Thokala P 2016).

RESULTS AND ANALYSIS

PCP Overall Evaluation Framework

The evaluation framework scheme of Stroke PCP has been designed based on the expertise of the Consortium from the evaluation of previous PCP-related initiatives (ANTISUPERBUGS, DECIPHER, THALEA, NYMPHA, INSPIRE, PRO4VIP) and in line with the guidelines provided in the toolkit by the initiative “European Assistance For Innovation Procurement (EAFIP)⁸”.

The evaluation has been defined to cover the whole project, focusing on two main processes: i) the evaluation of the overall initiative, plus ii) the evaluation of the bids and execution of the contracts awarded in the PCP:

Structure of the evaluation framework for Stroke PCP:

1. Evaluation of the **overall PCP initiative and process** considering the perspective of all the actors involved:
 - 1.1. Achievement of process objectives.
 - 1.1.1. Evaluation of **Phase 0**.
 - 1.2. Compliance with guiding principles of public procurement directive.
2. Evaluation of the **bids and of the execution of the contracts** awarded in the PCP:
 - 2.1. Selection and evaluation of bids, according to the exclusion and selection criteria, and the awarding criteria respectively
 - 2.2. Monitoring of contract implementation (Phase 1, 2, 3)
 - 2.2.1. Interim evaluations
 - 2.2.2. Evaluation of Phase completion
 - 2.3. **Proof of concept** of the developed prototypes (Phase 3); including **end-users experience assessment**)

On the one hand, the **evaluation of the overall PCP** aims to assess whether it achieves the goals according to the users’ needs and whether the guiding principles of value for-money, non-discrimination, equal treatment, transparency, mutual recognition, and proportionality are observed in each and all of the Phases of the Project (Phase 0 plus the 3 phases of PCP execution). Also, it will observe the compliance with the R&D services requirement.

On the other hand, **the evaluation of proposals** received on each Phase after the publication of the Request for Tender aims to verify and assess the technical, financial and organizational feasibility of each tender proposal against the defined awarding criteria and identified user needs. Lastly, during **each PCP phase, contract implementation will be monitored** periodically and reviewed against the expected outcomes (milestones, deliverables and outputs or results) for the corresponding phase. Monitoring will consist on intermediate and end-of-phase evaluations.

In each of the steps, the following components should be defined:

⁸ <https://eafip.eu/>

- Main tasks comprised in the evaluated phase
- Evaluation process
- Responsibilities
- Timing of the evaluation
- Output of the evaluation

Awarding Criteria

MEAT VBP Framework provides structure along layers and categories, within which criteria can be selected according to individual tender characteristics. With this aim, involvement of internal and potentially external stakeholders to select VBP criteria is recommended.

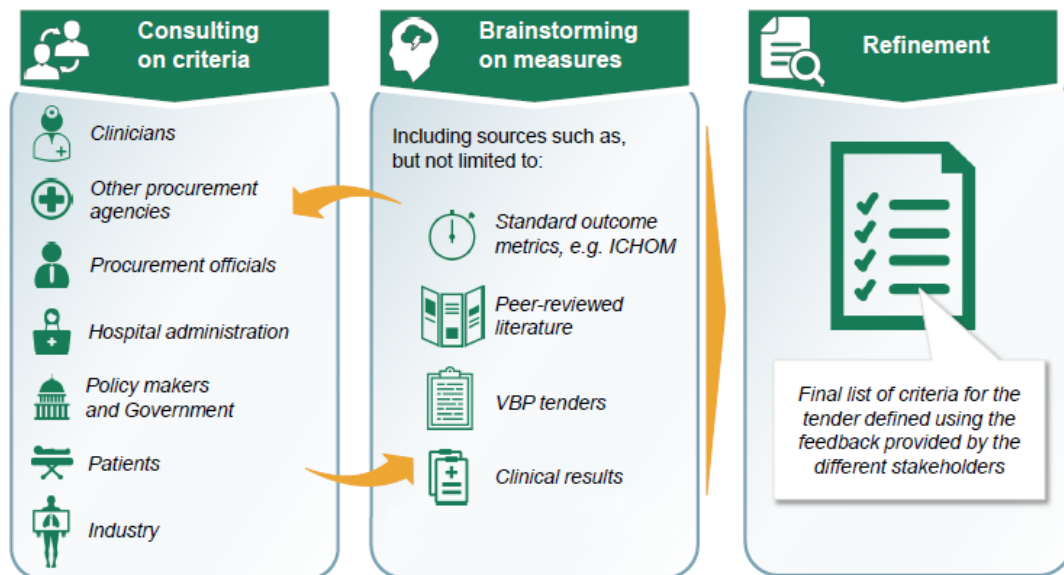


Figure 6. VBP Criteria definition

Evidence/Information regarding the performance for each criteria/sub-criteria of each technology under consideration was assembled in a “performance matrix”; which is similar to the European Medicine Agency’s (EMA’s) effects table for benefit-risk analysis (BRA) (European Medicines Agency 2015). This is a useful way of summarizing the relevant evidence helping to organize the following analysis looking at the best alternative product.

Annex III and **Annex IV** present the final results from the EURIPHI both Integrated Care and Rapid Diagnosis performance matrix to exemplify the task carried out. Given the preliminary work done so far, different content is presented in both performance matrix.

Despite the fact that an awarding criteria has been defined on both topics, these are considered a first approach and, as it will be stated later, **Procurement Organisations (POs) will be responsible to revise, refine and ultimate, according to their specific needs, a final and totally adapted awarding criteria on the fields.**

Integrated risk assessment tools on Stroke

The Procurement Organisations (POs) identified most important value-based award criteria taken from the questionnaire in February 2020, which fall under WP5 tasks. They were asked to indicate their five most important value-based award criteria relevant to the subject of matter, as well as the performance measures description, indicating on what aspects the product/solution should ultimately have an impact (what matters to us).

- | | |
|------------------------|--------------------------------|
| 1. UNIHA | 7. <u>FCRB</u> |
| 2. RESAH | 8. <u>FPT</u> |
| 3. <u>APHP</u> | 9. <u>RSD</u> |
| 4. <u>NHSCS</u> | 10. <u>InnovaPuglia</u> |
| 5. <u>NWSSP</u> | 11. SORESA |
| 6. <u>AQUAS</u> | 12. FDG |

In addition to this exercise, they were asked to refine the technical prescriptions, which can be observed on *D6.3 Functionalities and technical prescriptions* deliverable. Seven out of the twelve POs (58%) gave feedback on the most important value-based award criteria relevant to the subject of matter.

The results of the prioritization awarding criteria for the integrated risk assessment tool on Stroke can be observe in **Annex III**, where different criteria in every layer was defined.

Outcomes and Evidence

Within the Outcomes and Evidence category, six out of the seven respondents (86%) prioritized the “evidence of risk factor reduction” criteria, which focuses on the reduction of risk factors such as Hypertension, current smoking, diet, physical inactivity, or alcohol consumption. Out of the rest, they assigned an average weight of 25% to these criteria. The same number of respondents rated the “Quality of outcomes data to support the claim” criteria, considered the interoperability of the solution a key element to take into account with a 19,5% of the total weight.

Patient-Reported Outcomes measures (PROMs) criteria was also highly recommended by 57% of respondents, with an overall weight of 22%. Lastly, improvement of clinical outcomes due to prevention was considered by 29% of respondents with 17,5% of average weight.

Cost

The 57% of the respondents gave importance to the purchasing price, with an overall weight of 14,75%

Secondary benefits

From patient perspective, behavioural change (20%) was the best considered criteria, followed by patients and/or relatives’ comfort when using the solution (15%). On the other hand, ICT adoption and easiness to use (10%) was also considered.

When pondering HCP outcomes, health & social care staff time using ICT solution was taken into account by 43% of respondents with an average weight of 18,3%. From the provider benefits, support on improving along patient pathway (20%), as well as on the reduction of administration time (10%) was considered.

Lastly, as Health System secondary benefits, reduction on re-hospitalization was the most considered criteria (43% of respondents). However, reduction of emergency visits due to stroke and reduced long term costs were also considered.

Broader Impact outcomes

On innovation subcategory, two main outcomes were considered: Care optimisation across integrated clinical and social care pathway (20%) and the development of new improved service, technologies and care practices (18%) Regarding socio-economic impact subcategory, impact on social inequalities (20%) was contemplated.

As it can be observed on the performance matrix, some criteria defined in the Adapted VBP Framework on Integrated Care were not taken into account when defining the awarding criteria for the integrated risk assessment tool on Stroke. More precisely, from the 43 criteria defined on Integrated Care overall field, 19 (44,2%) were exploited to define the Awarding Criteria on stroke.

It is highlighted that no healthcare delivery costs were taken into consideration, either willingness to offer outcomes-dependent risk-sharing. At any case, **potential Procurement Organisations (POs) will be responsible to revise and refine the present Awarding Criteria, as well as assign final weights to each of the criteria. PO specific results will respond to innovative solutions of highest value for them. We therefore advocate using a LOT based structure, having a LOT for each PPO.**

Rapid diagnosis tool for antibiotic stewardship of VAP

In the case of the awarding criteria definition for rapid diagnosis tool on antibiotic stewardship of VAP, input from the technical requirements defined by University of Antwerp, as well as from the adapted MEAT VBP framework, was taken into consideration. In addition, existing experiences on *VBP tenders* were studied in order take potential information regarding the categories and possible criteria that could be applied to this potential tender. A total of three H2020 funded project tenders were studied:

1. RITMOCORE – PPI ⁹
2. STOP N GO – PPI ¹⁰
3. ANTISUPERBUGS – PCP¹¹

Among them, ANTISUPERBUGS-PCP project was found as a key source. The H2020 funded project showed great resemblance when looking to the technical requirements and outcomes expected from their solution.

The awarding criteria from ANTISUPERBUGS-PCP solution was obtained as a result of mix-methods approach. such as peer-reviewed literature and standard outcome metrics based on clinical results. A final awarding criteria was established in the project as a result of a validation process by a variety group of stakeholders: Clinicians, procurement officials, patients and hospital administration representatives. Lastly, feedback from the industry in the Open Market Consultations served also as an input to define the final Awarding Criteria.

Taking advantage from outlined experience, as well as the Adapted MEAT VBP framework on RD and the technical requirements defined on D6.2 (WP6), a list of Awarding Criteria, divided in MEAT categories, was defined for rapid diagnosis tool on antibiotic stewardship of VAP (see **Annex IV**),

⁹ <http://www.ritmocore-ppi.eu/>

¹⁰ <http://stopandgoproject.eu/>

¹¹ <http://antisuperbugs.eu/index.php/about-the-project/>

As observed in the performance matrix, the defined functional and technical requirements will not act as a knockout criteria's. Procurement organizations (POs) will be responsible to determine whether these requirements end up being considered as **key functional requirements** that the solution would be NICE TO HAVE or, on the contrary, considered as **minimal functional requirements** that the solution MUST HAVE. In the first scenario (observed in Annex IV), the fact that the solution does not meet the requirements will have an impact on the scoring, but not on the exclusion of the offer. In case second scenario is contemplated, the presented requirements' performance measures will need to be modified and consequently considered as Knock-Out (KO) criteria, meaning that if any presented offer that does not respect the minimum quality required, this will be automatically excluded.

Despite the fact that a great criteria definition and description was performed, a prioritisation exercise was not executed on rapid diagnosis topic, meaning that Procurement Organisations (POs) **will be responsible to assign the weights for the different categories prior to launch the potential tender** :

- **VBP Layer**
- **Category**
- **VBP Criteria**
- **VBP Sub-Criteria**

CONCLUSIONS

A first approach of patient-centred framework has been defined on both integrated care - *Integrated risk assessment tools on Stroke* – and rapid diagnosis - *Rapid diagnosis tool for antibiotic stewardship of VAP*.

On the one hand, a Pre-Commercial Procurement evaluation framework has been defined for integrated risk assessment tool on Stroke to cover the whole project, focusing on two main processes:

- i) The evaluation of the overall initiative; plus
- ii) the evaluation of the bids and execution of the contracts awarded in the PCP.

On the other and given that the rapid diagnosis tool for antibiotic stewardship of VAP will be procured through a standard procedure (e.g., open procedure), the evaluation framework has been simplified to the awarding criteria definition on the field.

Thus, a coherent and first version of awarding criteria has been defined, according to MEAT Value Based Procurement Framework, to be part of the tender documentation on two potential procurements on both integrated risk assessment tool on Stroke and rapid diagnosis tool for antibiotic stewardship of VAP. In both cases, the work performed on previous work packages (WP2, WP3, WP4 and WP5) has enabled the definition of a first approach in order to be implemented in both potential tenders.

The potential procurement organisations (PPOs) will be responsible to take the obtained results and adapt them, if considered, according to their innovation ecosystem, their specific needs and local legislation. Each PO will be responsible to revise the defined criteria, as well as the assigned weight and performance measurement description. This as part of a cross-border cooperation for which the principles of cooperation will be defined

Once this the final value for each Criteria and Sub-criteria are defined, Willingness to Pay method is recommended to be used according to the steps defined in the methodology section. To do so, involvement of clinicians, patients and other innovation ecosystem stakeholders will be needed in prioritizing and valuing the clinical and patient reported outcomes and overcoming limitations from traditional score-based approaches (e.g., converting costs into scores, ranking paradox and relative scoring manipulation).

This exercise will be needed to back up awarding decisions and ensure that patient perspective becomes a core aspect of the future service implementation.

Lastly, it is important to take into consideration that the definition of “functionalities and technical prescriptions” and “patient-centred assessment framework” are lengthy processes that POs define before publishing the call for tender. Therefore, POs will need to allocate enough time when scheduling the whole process (PCP or Open Procedure), as well as assessing the market readiness, engage in pre-tender dialogues and open market consultation to define the principles of cross-border cooperation of value and introduce innovative solution by means of value based innovation procurement.

GLOSSARY

Criterion: Specific product's attribute

PPOs: Public Procurement Organisations

Layer: Separate components of the holistic definition of value for the health technologies

MEAT: Most Economically Advantageous Tender

Unit of measurement: Magnitude of a quantity, defined and adopted by convention, that is used as a standard for measurement the performance of criteria and sub-criteria

Scores: Are used to translate performance measures using different units for each criterion onto a common scale, for instance, a 0 to 100 scale.

Sub-Criterion/metrics/attributes: definition on how a specific criterion is going to be measured as well as establishment of what metric will achieve 100 points and which one less than the maximum score.

Value function: Relation from a set of inputs to a set of possible outputs where each input is related to exactly one output

Willingness to pay: Is a term used in economics, which can be defined as the maximum amount a person would be prepared to pay, sacrifice or exchange in order to receive goods or services or to avoid something that is undesired. It can be used in medicine as a method for assessing the value of health benefits

ANNEX I. MEAT VBP FRAMEWORK ADAPTED TO INTEGRATED CARE

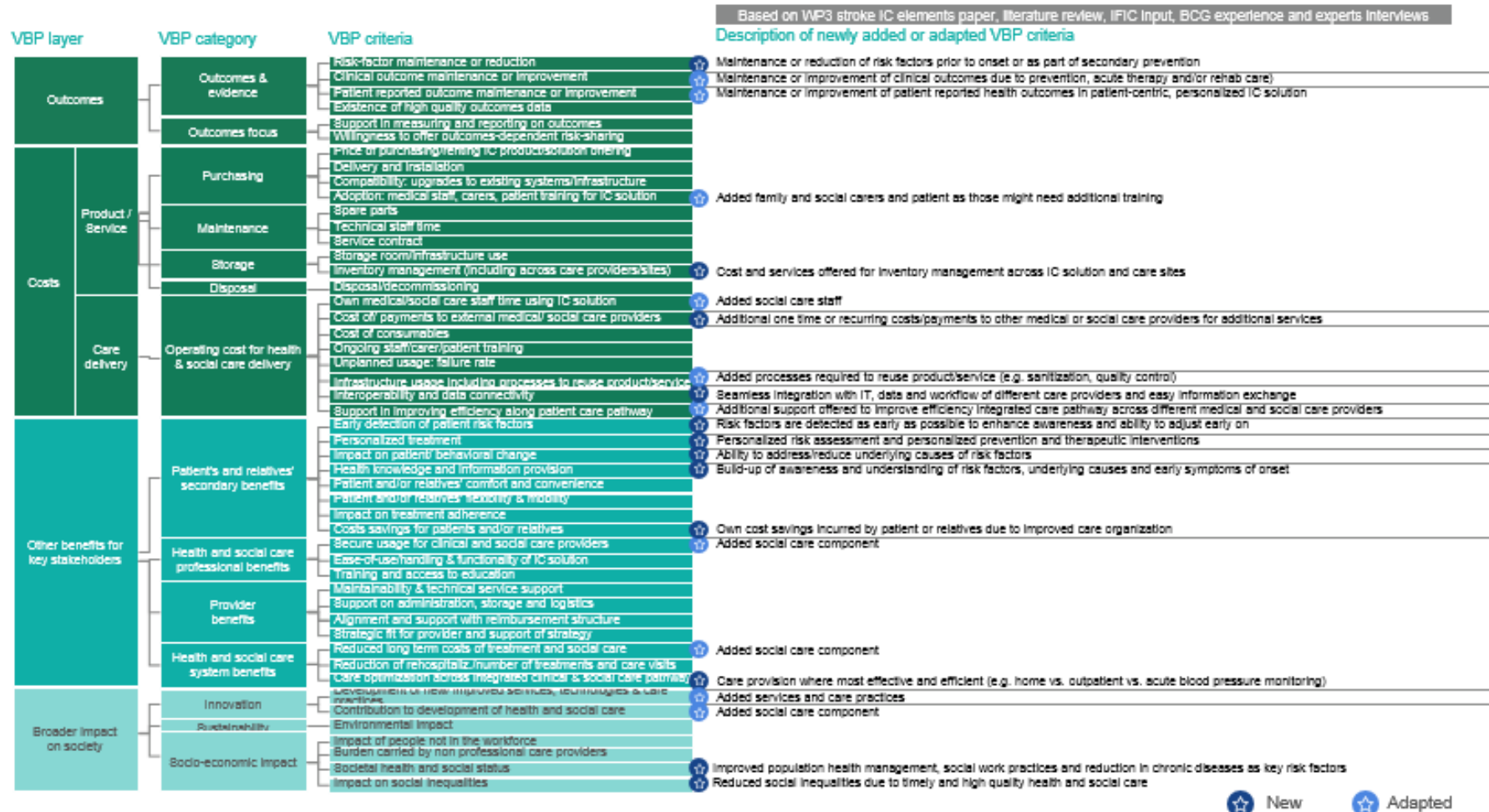


Figure 7. MEAT VBP Framework adapted to Integrated Care

ANNEX II. MEAT VBP FRAMEWORK ADAPTED TO RAPID DIAGNOSIS

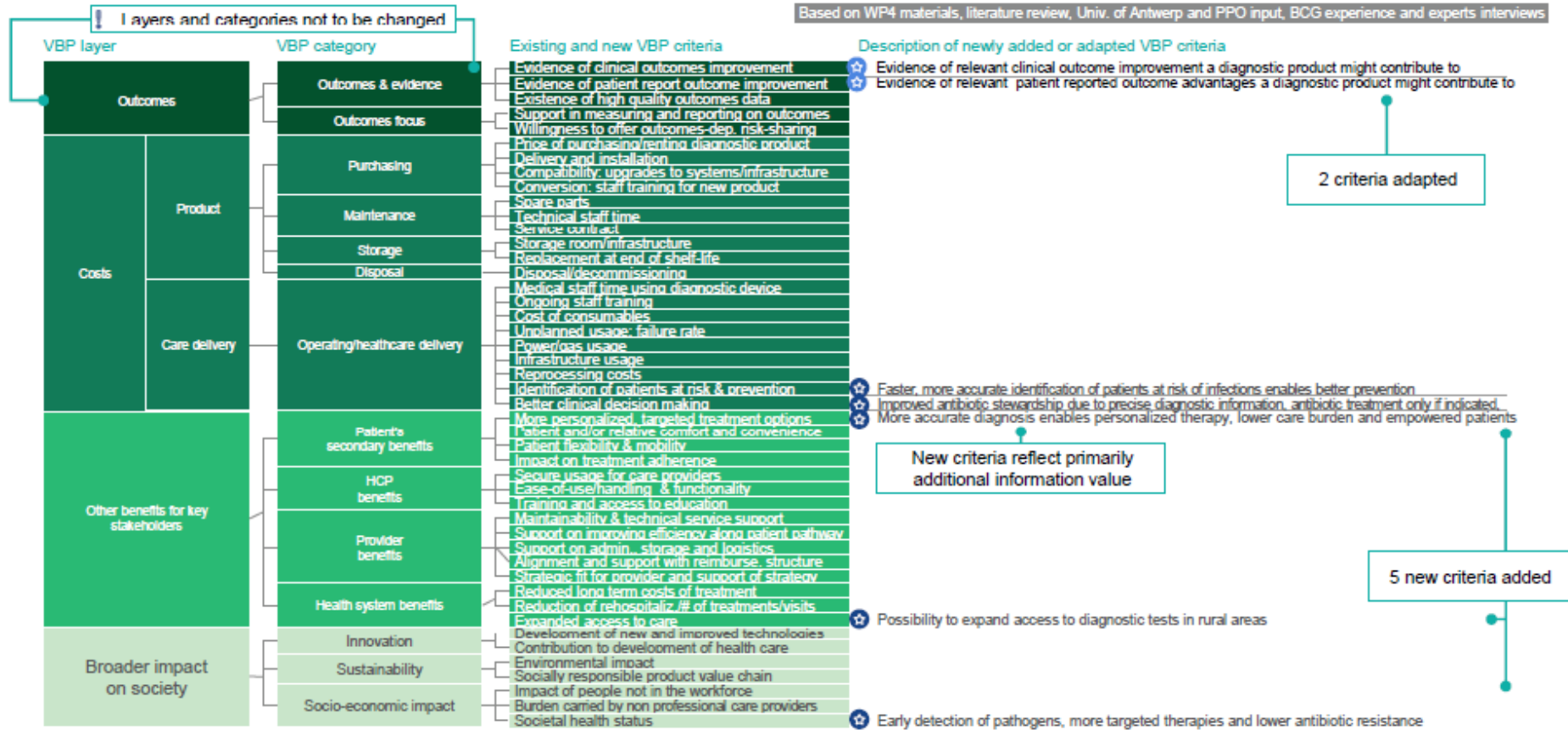


Figure 8. MEAT VBP Framework adapted to Rapid Diagnosis

ANNEX III. AWARDING CRITERIA DEFINITION LIST FOR INTEGRATED RISK ASSESSMENT TOOLS ON STROKE

Layer	W	Category	W	Criteria	W	Subcriteria	W	Description of performance measures				
Outcomes	%	Outcomes & evidence	%	Evidence of risk factor reduction	%	Reduction of stroke risk factors such as: Hypertension Current smoking Waist-to-hip ratio Diet Physical inactivity Hyperlipidemia Diabetes mellitus Alcohol consumption Cardiac causes	25,0%	% reduction on any of mentioned risk factor (>30% 100; 20-30% 50; 10-20% 25; <10%;0)				
				Improvement of clinical outcomes due to prevention	%	First Stroke case reduction	17,5%	% reduction on first stroke cases (>10% 100; 5-10% 50; 2,5-5% 25; <5%;0)				
					%	Second Stroke case reduction		% reduction on second stroke cases (>30% 100; 20-30% 50; 10-20% 25; <10%;0)				
				Evidence of patient reported outcome improvement	%	Improvement of PROMs	22,0%	QOL questionnaire (baseline vs. Ongoing)				
				Evidence of social care outcome improvement								
		Interoperability and data connectivity	%	Product/service has been recorded in existing registries with enough data for high statistical significance (>95%)	19,5%	Yes 100 % or No 0%						
		Outcomes focus		Support in measuring and reporting on outcomes								
				Willingness to offer outcomes-dependent risk-sharing								
Costs	%	Product	%	Purchasing	%	Price of purchasing/renting IC product/solution	%	Purchasing cost (TCO)	14,8%	N* Minimum Purchasing Price / Bid Price		
						Delivery and installation						
						Compatibility: upgrades to existing systems/infrastructure						
				Conversion: medical staff, carers, patient training for IC solution								
		Care delivery	%	Operating / Healthcare delivery	%	Maintenance	%	Spare parts				
								Service contract				
						Own health and social care staff time using IC solution						
						Cost of/payments to external health/social care providers						
						Cost of consumables						
						Ongoing staff/carer/patient training						
						Unplanned usage: failure rate						
		Infrastructure usage										
			Interoperability and data connectivity									
		Support in improving efficiency along patient care pathway										

Other benefits for key stakeholders	%	Patients secondary benefits	ICT solution adoption	%	Patient and carers training for IC solution	10,0%	Satisfaction stated by stakeholders / Number of negligence cases per year using the solution
			Ease-of-use/handling & functionality of IC solution	%	Easy of use and functionality of IT solution	10,0%	Satisfaction by patient / number of uses by patient
			Impact on patient behavioral change	%	Sustained changes in physical activity or nutrition	20,0%	Patient satisfaction measurement survey compared to a zero measurement
			Patient and/or relative comfort and convenience	%	Number of patients treated with bidirectional communication system	15,0%	Number of patients treated with bidirectional communication system
			Patient flexibility & mobility				
			Impact on treatment adherence				
			Cost savings for patient and/or relatives				
	%	HCP benefits	Secure usage for clinical and social providers				
			Ease-of-use/handling & functionality of IC solution				
			health & social care staff time using IC solution		Quality and availability of materials for self-training and live training opportunities		Satisfaction stated by stakeholders / Number of negligence cases per year using the solution
	%	Provider benefits	Integration of IT Data	%	Seamless integration with IT Data and workflow of different providers	20,0%	Continuous monitoring
			Support improving efficiency along patient pathway	%	Support in improving efficiency along patient care pathway	20,0%	Continuous monitoring
			Support on administration, storage or logistics	%	Reduction in admin time for stakeholders	10,0%	Baseline vs. Target
			Alignment and support with reimbursement structure				
%	Health system benefits	Reduced long term costs of treatment and social care	%	Comparison of cost of traditional pathway vs cost of new pathway proposed - Cost benefit analysis	25,0%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
		Reduction of rehospitalization/# of treatments & care visits	%	Lower frequency of complications and associated re-hospitalizations	23,3%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
		Reduction in emergency admissions due to stroke	%	Lower frequency of emergency admissions due to stroke	30,0%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
Broader impact on society	%	Innovation	Development of new and substantial improved technology	%	Development of new improved service, technologies and care practices	18,0%	Survey to users
			Contribution to development of health and social care	%	Care optimisation across integrated clinical and social care pathway	20,0%	Cost benefit Analysis
	%	Socio-economic impact	Environmental impact				
			Burden carried by non professional care providers	%			
			Societal health and social status	%	Impact on social inequalities	20,0%	Patient satisfaction measurement survey compared to a zero measurement

ANNEX IV. AWARDING CRITERIA DEFINITION LIST FOR RAPID DIAGNOSIS TOOL FOR ANTIBIOTIC STEWARDSHIP OF VAP

Outcomes		%	Outcomes & evidence	%	Evidence of relevant clinical outcome improvement a diagnostic product might contribute to	%	Reduction on ICUs length of stay due to ESKAPE pathogens	%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
							Reduction on mortality rates	%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
							Level of satisfaction of inpatients	%	Ordinal variable (1 to 5, 5 being the highest satisfaction)	
							Self-reported health status	%	Ordinal variable (1 to 5, 5 being the highest status)	
			Outcomes focus	%	Willigness to offer outcomes-dep, risk-sharing (Payment per result)	%	Supplier increases/decreases price based on functional requirements compliance and clinical outcome improvements	%	Acceptance of the proposed scheme	
Costs	Product	%	Purchasing	%	Cost per device	%	Purchasing Device Price + pack offers	%	N* Minimum Purchasing Price / Bid Price	
					Delivery and installation	%	Cost of delivery and installation	%	N* Minimum Delivery and installation Price / Bid Price	
					Training of the staff (in days)	%	Cost traduced from the personal time spent on device training	%	Less 2hours 100; 1max day 75; 2 max day 25; 3 max day 0)	
		Maintenance	%	Technical staff time	%	Expected time (in hours per year) technical staff will have to spend maintaining product x yearly fully loaded cost of technical staff in €	%	<25h 100;25-50h 50;50-75h 25;>75h 0		
		Disposal	%	Disposal/decommissioning	%	Volume of waste generated by product by year x cost of diagnostic tool waste removal by volume in €	%	Disposal waste <25 tons peryear 100; 25-50 tons 50; >50 0		
		Care delivery	%	Operating / Healthcare delivery	%	Medical staff time using diagnostic device	%	Time spent by ICU professionals preparing tool for usage in h x estimated interventions per year x fully loaded cost per hour of each professional	%	<10 mins 100, 10-30 mins 75; >30-60mins 25; >60 mins 0)
						Ongoing staff training	%	Continuous training of the annual staff	%	Continuous training of the annual staff (the best contribution 100%)
	Infrastructure usage					%	Cost of test per sample tested	%	<20 euro 100; <40 euro 75; <70 euro 50; <100 euro 25; <200 euro 0	

Other benefits for key stakeholders	%	Patients secondary benefits	Faster, more accurate identification of patients at risk of infections enables better prevention	Time-to-result response	%	<15 mins 100; 15-45 mins 75; 45min-2h 50; 4h-8h 25; >8h 0		
				Sensitivity rate	%	>95% 100; 90-95% 75; 80-90% 50; 70-80% 25; <70% 0		
				Specificity rate	%	>95% 100; 90-95% 75; 80-90% 50; 70-80% 25; <70% 0		
				Positive predictive value (PPV) rate	%	>95% 100; 90-95%50 ; <90% 0		
				Negative predictive value (NPV)	%	>95% 100; 90-95%50 ; <90% 0		
				ESKAPE pathogens identification	%	5 pathogens 100; 4 pathogens 75; 3 pathogens 50; 2 pathogens 25; <2 pathogens 0		
				Reproducibility rate	%	>95% 100; 90-95%50 ; <90% 0		
		Improved antibiotic stewardship due to precise diagnostic information, antibiotic treatment only if indicated, More accurate diagnosis enables personalized therapy, lower care burden and empowered patients	Reduction on the use of Antimicrobial prescriptions	%	% reduction (>10% 100; 5-10% 50; 1-5% 25; <1%;0)			
			Reduction on complications on ICUs due to wrong antimicrobial prescriptions	%	% reduction (>10% 100; 5-10% 50; 1-5% 25; <1%;0)			
		HCP benefits	%	Ease-of-use/handling & functionality	%	Subjective criterion. Professionals value judgement	%	Ordinal variable (1 to 5, 5 being the easiest)
		Provider benefits	%	Maintainability & technical service support	Time to provide a new diagnostic tool unit	%	<1 day 100; 1-3 days 50; 4-7 days 25; >7 days 0	
					Strategic fit for provider and support of strategy	%	Volume discount	%
		Health system benefits	%	Reduced long term costs of treatment	Overall cost reduction of hospital stay per patient/day at ICU	%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
					Cost of antibiotics consumption	%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)	
Overall cost of hospital stay per patient/day (all units)	%				% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)			
Possibility to expand access to diagnostic tests in rural areas	%			Sustaniable Plan to integrate the solution in rural areas	%	Sustaniable Plan to integrate the solution in rural areas Yes-No		
Broader impact on society	%	Innovation	Development of new and improved technologies	%	Maintenatnce of the price before any innovation + number of innovations developed in the last 5 years	%	Maintenatnce of the price before any innovation Not-Yes and number of innovations in the last 5 years	
			Contribution to development of health care	%	Provision or support of disease registry and/or fostering usage	%	Solution comprises an interoperability engine - Yes or No	
		Sustainability	Environmental impact	%	Production chain that incorporates values of environmental respect (ISO, and more)	%	Production chain that incorporates values of environmental respect (ISO, and more) - Yes or No	
			Socially responsible product value chain	%	To have a program of Corporate Social Responsibility	%	To have a program of Corporate Social Responsibility - Yes or No	
		Socio-economic impact	%	Early detection of pathogens, more targeted therapies and lower antibiotic resistance	%	Morbidity and Mortality at a region level	%	% reduction (>5% 100; 2-5% 50; 0,5-2% 25; <0,5%;0)

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