



Joint Action on European Health Workforce Planning and Forecasting Work Package 4

WP4 Toolkit and Recommendations for delivering better quality HWF Planning data for D043 – Report on Health Workforce Planning data “Preparing for tomorrow’s meaningful actions”

Introduction: The Consultation Meeting of National Experts in Reykjavik-Iceland, 24-25 September 2015 will focus on answering the question: “How to make data collections more supportive to systematic HWF planning at national level?”.

Objective: We aim to discuss recommendations supported by different pre-defined tools that are useful, practical, tailored to the national needs and manageable to implement in order to overcome gaps.

Participants invited: 12 country representatives who filled in the D043 Country Template and WP leaders

Gaps: Typical gaps were identified in D043 Country Template and during the discussions of the WP4 Budapest Workshop in June 2015

Recommendations (R): WP4 Toolkit and Recommendations were prepared by WP4 team that focus within the 4 Gap groups on the HWF Planning process, on the preconditions and the evaluation of HWF Planning; and on the HWF Planning Data.

How to use the WP4 Toolkit?

- 1) Identify which Typical Gap groups you face in your country and go to the specific recommendations & tools below.
- 2) If you face difficulties in identifying your Typical Gap group, just start from the R1. "HWF Planning Pathway Model"
- 3) Read the general description of the WP4 Toolkit and the Tool types (see page 2)

GAP GROUP 1 Difficulties in national level collaborations <ul style="list-style-type: none">● information and data flow failures● unclear roles and responsibilities of actors● lack of or unclear resources● unclear structure of planning	Go to R1-2-3-4-5 Tool 1-2-3-4-5-6-7
GAP GROUP 2 Methodological challenges <ul style="list-style-type: none">● linking multiple sources● misuse/lack of models and methods● no tracking of shortage-surplus, i.e. mobility● no consideration of supply-demand side	Go to R6-7-8 Tool 8-9-10
GAP GROUP 3 State of data <ul style="list-style-type: none">● quality● availability● timeliness● estimates	Go to R6-7-8 Tool 8-9-10
GAP GROUP 4 Qualitative approach <ul style="list-style-type: none">● collecting qualitative data● completing quantitative with qualitative data	Go to R8-9-10 Tool 11

WP4 TOOLKIT: collection of practical analytical tools, that is, measurement instruments/inventories e.g., protocols, guidelines, checklists, check-sheets/fact-sheets, rating scales that are invented, designed for helping countries to learn standard processes of HWF Planning. These tools provide support in the identification of process bottlenecks, key components of HWF Planning and the stakeholders to be involved, in addition in formulating appropriate questions, and developing a plan for implementation. Countries can adapt the toolkit to suit their own circumstances.

TOOLS do not address every situation of HWF Planning, do not explain everything in complete detail, however support and ease the implementation of the minimal steps of processes, actions, and enable the improvement of HWF Planning.

The main tool types in this document

- PROTOCOL: a detailed written set of instructions to guide the performance of HWF Planning; a detailed plan of a procedure how professionals should act under certain circumstances (American Medical Association)
- GUIDELINE: series of recommendations by experts, compilation of successful actions (DeRoche 2012)
- CHECKLIST: a list of items required, things to be done, or points to be considered. Checklists usually offer a yes/no format in relation to demonstration of specific criteria. Checklists are used to encourage or verify that a number of specific lines of inquiry, steps, or actions are being taken (Andrews 2008, The Sage Encyclopedia of Qualitative Research Methods)
- SKILL LIST: attempting to identify and define the requirements for effective performance by setting up diverse sets of skills and competencies that are required for team success, for enhancing team performance (Leggat 2007); contains the personal attributes that enhance an individual's interactions, job performance and career prospects (Madden 2014)
- RATING SCALES: Rating scales state the criteria and provide three or four response selections to describe the quality, level of agreement or frequency (Alberta Assessment Consortium 2005)

Definitions from D043 Country Template and colour coding:

HWF Planning Process=data collection, data reporting, data flows and data management

HWF Planning Data=data sources, data categories, data availability and methodology

HWF Planning Evaluation Phase

IDENTIFIED TYPICAL GAP GROUPS AND WP4 TOOLKIT

GAP GROUP 1 Difficulties in national level collaborations

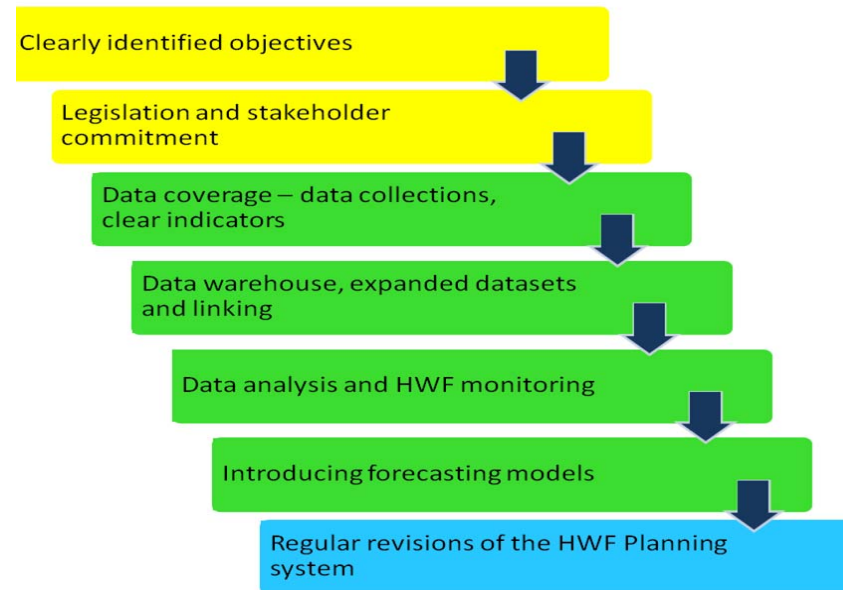
R1. Since countries identified the lack of systematic approach and unstructured line of steps in HWF Planning; a feasible and achievable HWF Planning process should rely on minimal common guiding steps. The “**HWF Planning Pathway Model**” leading towards a systematic HWF Planning consists of Minimal optimal and feasible steps that aim to shape a national level framework of performance in HWF Planning. This model supports the development of simple/lean processes and fosters dialogue to action.

Instruction:

Please, consider your country situation in HWF Planning.

Do you experience difficulties in the abovementioned/listed steps?

If yes: where? Go to Tool 2 to come closer to problematic points



The “**HWF Planning Pathway Model**” leading towards systematic HWF Planning consists of the minimal common steps: 0) Clearly identified objectives (transparency); 1) Legislation and stakeholder commitment (involvement and accountability); 2) Data coverage – data collections, clear indicators (information gathering, cleansing - best available information); 3) Data warehouse, expanded datasets and linking (additional data sources, data exchange); 4) Data analysis and HWF monitoring (environment scan, reflecting changes, interpretation of data and trends); 5) Introducing forecasting models (basic planning principles, simple scenarios with HWF to population ratio); and 6) Regular revisions of the HWF Planning system (maintain, evaluate, refine - impact assessment).

R2. Given that many countries are still on the way towards systematic and strategic HWF Planning, a measurement instrument should be provided for **listing the objective criteria of systematic HWF Planning**. This objective evaluation list sets the selection of elements, the criteria for systematic, proper, and comprehensive HWF Planning that could ease evaluating and comparing currently operating HWF Planning Systems, additionally to reveal areas for improvement.

Tool 1: Objective evaluation list of **Criteria for systematic HWF Planning**

Tool type: Rating scale

Target group: HWF Planning Committee if exists - institution/authority responsible for HWF planning, or Ministry

Benefit of the tool: provides support to explore the current state of the national HWF Planning

Instruction: Test your readiness in systematic, proper, and comprehensive HWF Planning. Please, consider at least 1 of the 5 sectoral HPs, and focus on national level. Score yourself if you already completed the following s: 0 -“not at all” - 1 “somehow” - 2 ”completely”?

		“not at all”	“somehow”	”completely”
1.	Clear set-up objectives for HWF Planning in national health policy - HWF Planning carried out according to a tangible/real definitive goal	0	1	2
2.	Strong political commitment and awareness	0	1	2
3.	Proper communication and information flow among national level stakeholders	0	1	2
4.	Dedicated and established HWF Planning committee at national level - designated responsible entity/specific group	0	1	2
5.	Multisectoral collaboration in HWF Planning	0	1	2
	Please summarize your yellow scores:			

6.	Established methodology and use of explicit model elements (from simple scenarios to complex mathematical simulations)	0	1	2
7.	Data coverage and completeness on both supply and demand side - availability of MDS data categories	0	1	2
8.	Different data sources linked to each other, fostered data exchange - building an integrated interlinked database/warehouse	0	1	2
9.	Support of online platforms, HR information systems	0	1	2
10.	Utilization of qualitative methods	0	1	2
Please summarize your green scores:				
11.	Regular evaluation of HWF Planning System - continuous fine-tuning	0	1	2
12.	Implementation and policy actions based on recommendations of the HWF Planning committee	0	1	2
13.	Sustainability ensured by accomplishable/adequate resources	0	1	2
Please summarize your blue scores:				
Please summarize your total scores (yellow+green+blue):				

Total scores:

if 0-23 → go to Tool 3

if 25-26 → go to Tool 9

R3. In light of the fact that several countries face problems in realization of national level collaborations (e.g., information flow and communication management as a typical bottleneck, that is information and data flow failures occur, roles and responsibilities are often unclear), special attention should be paid for information flow and communication management. Quick tools/instruments should be designed and developed to facilitate overcoming emerging difficulties. The use of the proposed Tools: the “**Information & Coordination Checklist**” could reinforce operation of HWF Planning in an actionable way and provide a **Protocol for information flow and communication management**.

Tool 2: “Information & Coordination Checklist”

Tool type: Checklist

Target group: decision-maker, Ministry

Benefit of the tool: provides support to explore the current state of the national HWF Planning and the areas to be improved

Instruction: Please mark YES or NO in the Table - if you tick NO, please consider further suggestions for improvements in brackets

Preconditions - HWF Planning environment PHASE 1	→ HWF Planning PHASE 2	→ HWF Planning Evaluation/Sustainability PHASE 3
Have you set-up a tangible/reachable definitive goal for HWF Planning? YES NO (go to D052)	Do you have a clearly communicated and accepted HWF Planning structure, information and data flow at national level? YES NO (go to Tool 3)	Are the results of HWF Planning channelled into policy implementation? YES NO (go to Tool 7)
Have you confirmed clear roles of actors in HWF Planning? YES NO (go to HWF Planning Pathway Model and consider the steps)	Have you approved a National HWF Plan/strategic plan? YES NO (prepare one with established components of scope, tasks, timeframe, budget, actors)	Are the interventions and policy actions based on results of HWF Planning? YES NO (go to Tool 7)

<p>Have you authorized any dedicated actors accountable/responsible for HWF Planning, i.e. HWF Planning Committee with appropriate mix of skills?</p> <p>YES NO (go to Tool 4)</p>	<p>Do you have an integrated data warehouse for HWF Planning?</p> <p>YES NO (go to Tool 8)</p>	<p>Do you regularly revise, alter and refine the HWF Planning System?</p> <p>YES NO (go to Tool 7)</p>
<p>Have you prepared a list of relevant types of stakeholders in the field of HWF Planning?</p> <p>YES NO (go to Tool 5)</p>	<p>Do you link different data sources to get a comprehensive overview on HWF?</p> <p>YES NO (go to Tool 8)</p>	<p>Have you dedicated resources (financial, infrastructural, technical, HR) for continuous, sustainable HWF Planning?</p> <p>YES NO (go to Tool 7)</p>
<p>Have you set-up a coordination path among the stakeholders?</p> <p>YES NO (go to Tool 3)</p>	<p>Do you have an explicit national HWF Planning, forecasting model? (from simple scenarios, e.g., HWF to population ratio, to complex mathematical simulations)</p> <p>YES NO (go to D052)</p>	<p>Have you involved stakeholders in the HWF evaluation process?</p> <p>YES NO (go to D054)</p>
<p>Have you involved all stakeholders in the HWF Planning process?</p> <p>YES NO (go to Tool 5)</p>	<p>Do you use platforms, HR information systems to support HWF Planning?</p> <p>YES NO (go to Tool 8)</p>	
<p>Do you have regular consultations with stakeholders?</p> <p>YES NO (go to Tool 3)</p>	<p>Do you carry out environmental scans for continuous situation analysis?</p> <p>YES NO (go to Tool 8)</p>	
<p>Do you collaborate/Have you initiated collaboration with other sectors, e.g., education, finance, labour, social sectors?</p> <p>YES NO (go to Tool 3)</p>	<p>Do you regularly revise, monitor, update HWF Planning (process and data)?</p> <p>YES NO (go to Tool 7)</p>	

Tool 3: WP4 Protocol of information flow and communication management

Tool type: Protocol

Target group: decision-maker, Ministry

Benefit of the tool: supports governance and management of the HWF Planning stakeholder network, and covers/overarches all phases of the whole HWF Planning (see WP4 flow chart)



Description:

1. Attention and engagement for information flow and communication management (R5) - emphasizing the fact of critical bottlenecks!
Governance-Attention to process, direct efforts and recognizing importance and consequences/benefits - successful influence on stakeholders' attitudes, having/building a common vision among stakeholders, teamwork
2. HWF Planning Committee (R5) member with expertise of communication - identify one person responsible for communication management issues who primarily ensures transparency, sustainability, updates and follow-up regarding any changes of HWF Planning field
3. Tasks, detailed functions:
 - Preparing communication-dissemination strategy - knowledge sharing and awareness raising, regular evaluation and revision, more appealing communication on the evidence and interpretation of analyses' results (Communication and dissemination channels: newsletters, online platform, publications etc.)
 - Fostering, monitoring, governing and managing communication - Updating info for stakeholders, exploring new stakeholders and interested parties, investing in network-building
 - Create, Develop, Strengthen, Assess and Manage stakeholder network and any partnerships/alliance more productively
 - Establishing a coordination path - Ministry/decision-maker-HWF Planning Committee-Stakeholders (info flow directions, stakeholder analysis and list, entitled bodies in HWF Planning, how key actors relate to each other)
 - Coordination mechanisms - Strategy development for stakeholder engagement
 - Internal events: Organizing the meetings of the HWF Planning Committee
 - External events: Adequate Stakeholder consultations - national gatherings with all stakeholders annually,
WSs - individual/group meetings/Delphi/revision rounds etc.
International/other sectors/experts - managing the network

R4. HWF Planning tailored **resources** (human, financial, infrastructural, skills-related) should be enhanced and revised annually/biannually at national/Member State level. Such investment and the efficient use of resources would result in cost-effective operation on the long run.

R5. Setting up a **designated responsible entity** - HWF Planning committee - at national/Member State level for operational HWF Planning would be beneficial in strengthening national level collaborations. Stronger leadership - with clear decision-making levels and roles - could help eliminating the fragmented efforts and thus provide more coherent actions. Optimising the broad range of actors/stakeholders would foster having achievable and better defined roles/functions/skills/tasks.

- Composition of national HWF Planning committee/body/team/group would require capacity building, and **multidisciplinary expertise** in e.g., health management, health policy, health financing, statistics, epidemiology, sociology, data analyses, communication, HR information system managers, technical officer/computer operator, administrative support etc. Tool 4: HR **Skill List** summarizes the core competences and fundamental skills desirable for professionals engaging in the HWF Planning practice/performance.
- Ensuring the expertise by involving **stakeholder representatives** of central governmental bodies, Ministries, Regulatory bodies, Authorization offices, Professional representative bodies/organizations, Chambers, Statistical Office, Regional/local representatives, Universities & research institutes, Health insurance funds/insurance companies, Civil society-NGOs, Patient organizations, Multilateral agencies-network representatives etc. Tool 5: **Stakeholder coverage evaluation tool** would support the national stakeholder analysis and ensure the setting up of the collaboration of a national level HWF Planning network.

Tool 4: HUMAN RESOURCES Optimal Skill list for **HWF Planning Committee** - 8 Optimal Core Competency Dimensions reflect foundational skills desirable for professionals engaging in the HWF Planning practice to improve performance

Tool type: Skill list

Target group: decision-maker, Ministry, or HWF Committee if exists - institution/authority responsible for HWF planning

Benefit of the tool: supports to improve the composition and performance of the HWF Planning Committee

Instruction: Take account of the Optimal Skills of the HWF Planning Committee. Do you match/achieve the 8 Optimal Core Competency Dimensions?

	Core Competency	Skill Description	
1.	Health Policy Development and Program Planning Skills	monitor policy implementation, operations planning, implement strategy	
2.	Legal Skills	legal terminology, legal studies	
3.	Management Skills	management, problem solving	
4.	Leadership and Systems Thinking Skills	leadership development	
5.	Communication Skills	share information, information and communication, manage electronic information	
6.	Analytical and Data Assessment Skills	time series analysis, surveying, development of statistical methods, mathematical statistics, statistical forecasting	
7.	Health Informatics Skills	web application/software development	
8.	Financial Planning Skills	financial planning, financial analysis, budget design	

Tool 5: Stakeholder coverage evaluation tool

Tool type: Guideline

Target group: HWF Planning Committee if exists - institution/authority responsible for HWF planning, or Ministry

Benefit of the tool: supports national stakeholder analysis for national HWF Planning stakeholder network



Description:

- Stakeholder motivation - clear common purposes, support for the HWF Planning within the organization, partnership efforts confirmed (How HWF Planning fits the mission of the stakeholder organization/How this HWF Planning stakeholder network supports operation of the stakeholder organization/How you contribute to HWF Planning stakeholder network?)
- Stakeholder expertise - complementarities, previous work/materials/mission in harmony, any positive experience
- Willingness to collaborate - engagement towards mutual benefits, commitment to joint efforts, dialogue
- Stakeholder power - Force Field Analysis (by Lewin)
- Stakeholder capacity - does the organization have the resources - financial, HR, technology, competences/abilities/expertise - staff roles and balancing responsibilities within the stakeholder organization (How to move forward/What are the critical steps/How to avoid or mitigate risks/How to allocate work)

Tool 6: Brief training outline/minimum modules for HWF Planning Committee - knowledge sharing and capacity building

Tool type: Guideline

Target group: HWF Planning Committee if exists - institution/authority responsible for HWF planning, or Trainers, Experts in HWF Planning

Benefit of the tool: supports to improve the composition and performance of the HWF Planning Committee

Instruction: When creating and improving the composition and performance of the HWF Planning Committee, when organizing training programs for people involved in HWF Planning, please consider the following Modules.

Tailored programs are necessary in HWF Planning performance

- Module 1 - Strategic thinking and Program planning
- Module 2 - Data collections and Epidemiology
- Module 3 - Data analyses and Evidence-based interventions
- Module 4 - Health Policy and Management
- Module 5 - Communication and Coordination

Tool 7: HWF Planning Assessment Tool - Managerial innovation to maintain and develop HWF Planning

Tool type: Guideline

Target group: HWF Planning Committee if exists - institution/authority responsible for HWF planning, or Ministry, and Researchers

Benefit of the tool: supports to improve, evaluate and maintain HWF Planning, tests the compliance of HWF Planning Committee

Description: This Tool 7 enhances techniques for setting goals for efficiency and effectiveness; enables to measure how to achieve the targets; monitors operation of HWF Planning (sustainability?); and reveals steps and action to be developed, further identifies where adjustments need to be made to improve overall HWF Planning performance. This tool ensures comparisons with the value of the same measure over time, and encourages reviewing currently used measures/indicator-sets (Other sectoral indicators' good practices?)

Proxy measures vs. more direct (quantifiable) measures are used to anticipate rapid impact and outcomes, long term effects

Using a proxy measure means when you cannot measure exactly what you want/need, you measure what you can - measure something that is close enough to reflect similarly.

- 1) Sometimes you have to use a process measure instead of an outcome;
- 2) Or you use a measurable process in place of one that is tougher to get at (Patient safety - Quality improvement Duke University)

Instruction: Set a date for checking the key measures in your country and repeat it annually. Attempt to set basic values and target values at the listed cornerstones in maintaining and sustaining HWF Planning. WP4 suggestions could govern and guide your attention to desirable way/direction.

KEY MEASURES	WP4 Suggestion
Number of defined HWF Planning objectives/goals to achieve	Initial analysis of HWF Planning objectives - short-, medium- and long-term desirable outcomes (1 year/3-5 years/10 years)
Number of engaged stakeholders involved (All stakeholders/engaged stakeholders)	Tool 5 Stakeholder (coverage) evaluation tool could be used to support setting up and strengthening the national HWF Planning stakeholder network
Number of Stakeholder consultations per year	At least one big event per year, smaller events additionally (Tool 3 External event, and Tool 6)
Number of meetings targeting HWF Planning related topics per year	At least biannually an event should be organized in the topic: policy dialogues/workshops/trainings/conferences etc. by reaching the target group of stakeholders, policy makers, researchers, etc. (Tool 3 External event)
Amount of devoted time for building up the HWF Planning Stakeholder network?	The more the better :)
Number of items/channels in consistent communication	Different channels should be used to reach diverse target groups (Tool 3 identifies the main channels)
Number of HR in national HWF Planning Committee	Increasing HR over years till reaching the core competencies
FTE dedicated to HWF Planning related tasks	Increasing part-time to full time, increasing HR linked to HWF Planning
Range of skills currently required/present in HWF Planning	Tool 4 Skill list - Test the gap between current and listed competences. The more skills covered the better HWF Planning performance!

Number of Annual reports on HWF/HR	Annual reports should be prepared Existing annual HWF/HR reports should be incorporated, utilized in HWF Planning
Data coverage - Availability rate of MDS data categories	Review data collections/data sources and initiate to cover at least supply and basic data of demand side of MDS D051
Number of data collecting organizations	Fewer number of data collectors would provide higher consistency
Number of data sources used in HWF Planning	Multiple data sources contribute to data completeness with proper data source linking
Number of trainings aiming to strengthen HWF Planning knowledge, competences and skills	What kind of trainings would strengthen their skills? (Tool 7, Tool 4 and 9)
Number of official recommendations to decision makers?	Recommendations made by the national HWF Planning Committee, for example training intake Is there adequate political will and leadership to implement the next stage of systems change?
Number of reviewing evaluation results	Regular projection update every 2-3 years → Setting an evaluation schedule: Adjustment every 2-3 year
Goals/steps/short-term expected outcomes achieved	Testing appropriateness and effectiveness using gap analysis Policies and procedures review? Impact assessment Where do performance concerns occur?
Usefulness of common tools (YES-NO)	WP4 Toolkit evaluation
Annual Budget dedicated to HWF Planning - Is there any/What amount? Considered for next year?	Targeted budget annually for HWF Planning

GAP GROUP 2 Methodological challenges

R6. Based on the findings, the availability of data for HWF Planning - particularly migration in- and outflow data - experiences a significant lack; therefore countries should improve and focus on the aspects of data collection, sharing, and management.

The WP4 “**HWF Planning Data Management Checklist**” - supporting R6 - could contribute to optimize and make easier to maintain HWF Planning data specific goals. This Checklist provides a practical approach & simple tools of data-handling process to be specified to the national needs/context. Additionally, a **Skill list of Data Specialist** could contribute to increase the quality of data collections by providing the list of minimal core competences and skills.

Tool 8: HWF Planning Data Management Checklist

Tool type: Checklist

Target group: HWF Planning Committee if exists - institution/authority responsible for HWF planning, HWF data collector and analyst

Benefit of the tool: provides support to explore the current state of the national HWF Planning data, data collections and the areas to be improved

Instruction: Please mark YES or NO in the Table - if NO, please consider further suggestions for improvements in brackets

HWF Planning data-handling	HWF Planning data
<p>Do you use Registry data for HWF Planning?</p> <p>YES NO (please, consider how you could use, maintain, validate and update the Registry data for HWF Planning)</p>	<p>Have you identified the necessary data you need for HWF Planning?</p> <p>YES NO (please, see D041-D051)</p>
<p>Do you conduct different data collection for HWF Planning? (e.g., sampled surveys, additional data collections, secondary data collection)</p> <p>YES NO (please, collect the options how additional data collections could be initiated - see Tool 11 & D061-D052)</p>	<p>Are they available?</p> <p>YES NO (please, check whether MDS is available and manageable to collect in your country)</p>
<p>Do you have standard codes at national level? (data/variables categorized on the same way at every data collecting institute)</p> <p>YES NO (please, consider checking crucial HWF Planning data categories D041-D051)</p>	<p>Do you carry out continuous situation analysis, monitoring and environment scan?</p> <p>YES NO (please, check data coverage - what variables are included in data analyses)</p>

<p>Do you have a specific intersectoral integrated database, proper central data warehouse for HWF Planning?</p> <p>YES NO (please, consider official documents, legislation that require or codify HWF Planning data warehouse, and aim to facilitate data exchange between data collecting and reporting institutes in order to set up and build the HWF Planning data warehouse, which would ideally be multi-sectoral and multi-professional data, where individual data completed with sampled survey results)</p>	<p>Do you have available data to track imbalances of national HWF?</p> <p>YES NO (please, check the frequency of updates)</p>
<p>Is your database, warehouse supported by IT solutions?</p> <p>YES NO (please, consider whether your country is planning to develop this field, contact stakeholders with IT expertise)</p>	<p>Do you regularly revise data coverage and completeness to react, reflect changes?</p> <p>YES NO (please, use Tool 10-Tool 11 to reveal timeliness, availability, accuracy, completeness and comprehensiveness of data)</p> <p>Do you regularly check data quality, reliability and validity?</p> <p>YES NO (please, use Tool 10-Tool 11)</p>
<p>Do you have a national HR/HWF information system?</p> <p>YES NO (please, consider how IT systems are communicating in your country, and consider whether your country is planning to develop business intelligence tools)</p>	<p>Do you use assessment tools?</p> <p>YES NO (please, use Tool 7)</p>
<p>Do you link data sources and data sets?</p> <p>YES NO (please, consider the deal composition of data sources: What data source types to link: Registry - authorization register ideally available online-, residence and employment, tax-payroll)</p>	<p>Do you cover supply and demand side?</p> <p>YES NO (please, check D051-D052 for MDS and good practises in HWF Planning data collections)</p>

<p>Have you set data-sharing agreements/joint ownerships to ensure accessibility?</p> <p>YES NO (please, consider official documents, legislation that require or codify HWF Planning data warehouse, and aim to facilitate data exchange between data collecting and reporting institutes in order to ensure accessibility)</p> <p>Do you use single ID to link data?</p> <p>YES NO (please, consider data protection-information privacy regulations in your country)</p>	<p>Do you have established forecasting models and methodology for HWF Planning?</p> <p>YES NO (see good practices in D052)</p> <p>Is that a simple scenario/estimations or a more complex mathematical simulation? (i.e. HWF to population ratio and/or need based projections)</p> <p>YES NO (see good practices in D052)</p>
<p>Do you have data management standards used in other sectors economic/science as a good practice?</p> <p>YES NO (please, consider collecting good practices from other sectors)</p> <p>Do you intend to build up Big Data?</p> <p>YES NO (please, consider whether your country is planning to develop this field of innovative technology)</p>	<p>Do you endeavour having data in yearly time series for HWF Planning e.g., MDS - FTE, Activity status categories, private sector?</p> <p>YES NO (please, consider checking your data D041-D051)</p>
<p>Have you increased, maintained interest and motivation of data collectors ensuring real engagement, involvement?</p> <p>YES NO (please, consider the interest and motivational factors of data collectors when developing and updating HWF Planning data collections)</p>	<p>Is the projection period long enough to implement actions?</p> <p>YES NO (please, consider your historical context when setting up the projection period)</p>
<p>Do you keep consistency in dissemination - more appealing communication on the evidence and interpretation of analyses' results?</p> <p>YES NO (please, consider Tool 3 and Tool 9)</p>	<p>Do you update HWF Planning projections regularly?</p> <p>YES NO (please consider updates in every 2-3 years - D052)</p>

Tool 9: HUMAN RESOURCES Optimal Skill list for **HWF Planning data specialists** - minimum list of skills and competences required in HWF Planning (Internally or available externally if needed)

Tool type: Skill list

Target group: HWF data collector and analyst, HWF Planning Committee if exists - institution/authority responsible for HWF planning

Benefit of the tool: supports to improve HWF Planning data collections, increase data quality

Instruction: Take account of the Optimal Skills of the HWF Planning Data Specialist. Do you match/achieve the 5 Optimal Core Competency Dimensions?

Core Competency	Skill Description	Professionals	
Math, Statistics skills	statistics, mathematical statistics, descriptive statistics	data analyst	
Analytical, Modelling Skills	data modelling, data processing and analysis	data analyst	
HR information management Skills, Technology and Data Skills	information technology, manage electronic information	IT knowledge and expertise, technical assistance (external)	
Presenting, Communication Skills	presenting techniques, presentation, information and communication		
Interpretation Skills	data communication, interpret data	HWF expert/policy analyst/health economist	

GAP GROUP 3 State of data

R7. Since data is doubtlessly a crucial element in HWF Planning; we should ensure increasing data **quality** by strengthening registry data (providing anonymization and data protection for the individuals), sufficient data collections and cleansing (regularly updated), making the use of existing accurate data, conducting additional surveys, validity and reliability checks by triangulation (duplications in data collection should be eliminated) and increasing transparency - interest and motivation of data collections to modify set of required HWF Planning data and to build up the one and only unified data source linking supported data warehouse.

Health policy interventions should use appropriate evidence with consideration of the methodological limitations.

- Danger of **bias** should be considered in order to step on the way of appropriate health policy actions, that is,
 - misinterpretation of data
 - the lack, misuse-misapplication of data;
 - wrong data use having collected by different aims;
 - no updates-old data that is not even able to follow trends; and
 - the lack of use of real-life databases, (data analysis directly from the operation/real-life databases).

R8. Since trends significantly matter in HWF Planning; utilizing **estimates** (Estimate: An approximate calculation or judgement of the value, number, quantity, or extent of something) based on quantitative and qualitative data in the continuous situation analysis/trend analysis and environment scan should be practised. Quantitative databases should require annual updates in order to understand the latest trends and changes of HWF. Survey based quantitative data, estimates would be preferred in case of lack of comprehensive data in important issues. Qualitative methods and data could complete the overview, understanding and interpretation of current situation in HWF.

In order to increase support good quality and more comprehensive HWF Planning related data collections Tool 10 presents some steps how the “State of data” can be improved and gaps concerning data can be overcome.

Tool 10: Database maintenance and development tool - PHASES of improvement and overcoming gaps of “State of data”

Tool type: Rating scale

Target group: HWF data collector and analyst, HWF Planning Committee if exists - institution/authority responsible for HWF planning

Benefit of the tool: supports to improve HWF Planning data collections, increase data quality

Instruction: Test your HWF Planning data. Please, score yourself if you already completed the followings, which PHASE you are by picking one PHASE in each row:

	PHASE 1	PHASE 2	PHASE 3
Timeliness	No updated database	Annual/Regular updates	Real life/Up-to-date datasets
Availability	No data/Non-accessible data	Aggregated datasets/Yearly time series	Individual data
Accuracy/Validity/Reliability	No accurate data	Estimates/Sample based data/Convenience sampling	High accuracy
Completeness/Consistency	No complete/consistent database	Modifying data collections	Triangulated data collections
Comprehensiveness	No comprehensive data	Data source linking	Single ID integrated database

R9. Big data and e-health solutions should be incorporated to enable more efficient HWF planning data gathering, and the utilization of interoperable and comparable datasets should be fostered. Building a wider network of information and providing increased connectivity could strengthen the need to bring focus to HWF planning data.

GAP GROUP 4 Qualitative approach

R10. In light of the expansion of the utilization of qualitative methodology; qualitative data collections should be incorporated for non-quantifiable issues to enable deeper analysis and understanding in HWF Planning. Qualitative methods and data could complete the overview, understanding and interpretation of current situation in HWF.

Incorporating qualitative approach could be beneficial, since that

1. contributes to continuous situation analysis, main trends - while focussing on non-quantifiable core issues
2. contributes to deeper analysis and understanding - while focussing on issues needing deeper analysis
3. contributes to select methods by rationales (see D061)
4. contributes to utilize qualitative methods in complementing quantitative methods, and emphasize its use in the evidence-based HWF Planning

Tool 11: Guideline for selecting qualitative methods by rationales

Tool type: Guideline

Target group: HWF data collector and analyst, Researcher, or HWF Planning Committee if exists - institution/authority responsible for HWF planning

Benefit of the tool: supports to improve HWF Planning data collections, increase data quality and triangulation

Instruction: Please, focus on the main goals and belonging qualitative methods to deliver an effective use of qualitative approach

Quick start table: Selecting the right method for you

Choose what you would like to do	Method section
Identify people to be involved in your project.	3.1 Identifying stakeholders and experts
Understand what information already exists on a workforce topic.	3.2 Literature review
Interview stakeholders and experts to obtain a deeper understanding of a workforce topic.	3.3 Interviews
Collect qualitative or quantitative information from a defined group.	3.4 Surveys
Investigate plausible futures.	3.5 Scenarios
Quantify scenarios or uncertain variables.	3.6 Delphi exercises