



**D5.2 Report on Identified Cross-Border Use Cases:
Sharing and Learning from Best Practices on
European level
Draft**

WP 5 Innovative Use of Health data

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Table of Contents

INTRODUCTION	5
BACKGROUND.....	5
SCOPE	6
METHODS.....	7
QUESTIONNAIRE.....	8
INTERIM RESULTS OF THE LITERATURE REVIEW	9
CROSS-BORDER USE CASES	9
RECOMMENDATIONS ON BEST PRACTICES ON EUROPEAN LEVEL.....	11
CONCLUSION	11
REFERENCES	12
ANNEXES.....	13
ANNEX 1: WORKING DEFINITIONS.....	14
ANNEX 2: QUESTIONNAIRE	15
ANNEX 3: OVERVIEW ON SCREENING OF SHORT-LISTED PUBLICATIONS	17

Introduction

One of the eHAction's main objectives is to improve the innovative use of health data. Tasks related to this eHAction objective are fulfilled by Work Package Five (WP5): identified cross-border use cases, including assessment of pros & cons of stakeholders, and practical solutions with potential for European scale benefits. WP5 has a vision to develop innovative usage of data across the healthcare sector to improve the knowledge base for health and healthcare policy. This draft report provides information about the objectives, scope and structure of Deliverable 5.2 established in WP5 specific to identified cross-border use cases.

WP5 looks at data as a key driver of disruptive innovation in economic, societal and social systems. Therefore, WP5 is committed to make an impact on the use of health data as well as assisting data-driven innovation leading to patient-centred health systems, evidence-based health policies and decision-making.

We believe that understanding stakeholder needs and real-world use cases is essential in achieving our objectives. Therefore, WP5 is going to collect, compile and share experiences of Member States/Countries for developing a knowledge base and a framework for continuous exchange of best practices on the EU level.

Background

The overall objective of WP5 is to support the application of good practices in Member States (MS) and provide guidance at EU level on handling big data in health within the existing EU regulatory framework on secondary use of personal data (ref. EU General Data Protection Regulation GDPR 216/679), and consequently to ease the uptake of innovative usage of data across the healthcare sector for the benefit of society, individuals and Member State (MS) health systems.

Task 5.2 "*Sharing and learning from best practices on European level*" foresees to:

- define and use methods to identify underlying needs and barriers experienced by stakeholders (pros & cons) affecting efficient and effective sharing of best practices in order to reach the objectives of the WP and the Joint Action.

- investigate already formalised cross-border use cases such as European Reference Networks for rare diseases as well as practical solutions in Research and Development (R&D) including analytics in order to identify new possibilities for innovative use of big data on the European scale, to assess feasibility of network optimisation for cross-border IT infrastructure and data flow management and to enhance interdisciplinary research and openness.
- identify the users and stakeholders with most potential to benefit from innovative cross-border sharing and use of health data.

The purpose of D5.2 is to identify implementable and scalable real-life applications of big data in public health in the EU. This is achieved by collecting, reviewing, analysing and synthesising cases from academia, businesses and service providers.

Scope

D5.2 *“Report on identified cross-border use cases: Sharing and learning best practices on European level”* will investigate already implemented cross-border use cases of big data within the frameworks of existing actions such as European Reference Networks for rare diseases as well as in R&D including analytics. The deliverable will further assess the pros & cons of such data sharing experienced by stakeholders, and finally present practical use cases with potential for European-scale benefits.

The scope of the deliverable will be based on the definitions of innovation, big data especially in health, interoperability and cross-border use cases. The scope of the deliverable will be broadened by reviewing relevant big data applications in fields other than health, where innovative use of data has been demonstrated with the aim to explore the possibilities of employing similar ideas in the field of health.

Finally, the deliverable will address the question of how already existing data sharing ecosystems across the EU can be utilised, and what the long-term perspectives can offer to Member States.

D5.2 will be mainly built upon information from case studies on innovative use of data in the field of public health. It will report on the current status of data sharing in cross-border

settings, specifically relying on literature review. It will also attempt to provide a model for data processing and synchronisation needed for pooling data from various registers, studies, cohorts and countries for analysis.

In the case studies, certain information will be extracted and analysed, e.g. on diseases and population groups addressed, on types of technology, innovations and big data analytics algorithms used, on the data producers (undertaken by academia, industries, joint ventures) and on the scope of scalability to other countries in Europe and globally.

In addition, the acceptability of innovations or technologies to citizens, challenges in combining data from diverse sources and related database management, opportunities in the field of health, and interpretation and sharing of the results, especially by an individual, will be described and discussed. Perceived needs and barriers of users will be analysed as part of the case studies.

Methods

A literature review with the main focus on applications of big data in health and innovations from 2016 onwards has been performed to cover recent developments. Literature has been selected and reviewed and subsequently, the identified use cases and stakeholder engagement are under analysis.

In addition, four reports mentioned below will be reviewed closely. A systematic review of *Study on Big Data in Public Health, Telemedicine and Healthcare* covers topics of big data applications in health and innovations before 2016¹. Two other relevant reports are *From Innovation to Implementation - eHealth in the WHO European Region*² and *eHealth innovations in Western Europe*³, dealing with programmes and initiatives by countries which have more advanced healthcare ICT infrastructure. Yet another closely related report is the *Report on main eHealth activities outside of the EU* (Joint Action to support of the eHealth Network, JAseHN, Deliverable 8.1.4 in WP8)⁴.

Other methods such as interviews with the partners and stakeholders can be employed to collect information which is not available in published form.

Questionnaire

In order to conduct interviews in a structured manner, a questionnaire was produced. The purpose of the interview questionnaire is to collect information about multi-country or cross-border eHealth projects, in which the country in question has been involved. The questionnaire was sent for comments to the Joint Action WP5 members on 12 February, 2019. Comments were received only from Greece. The questionnaire is now ready and presented as Annex 2.

The eleven questions of the questionnaire are:

1. We would like to learn about your projects and their goals that involve more than one country and also use of health data. Could you, please, tell us?
2. Which players were involved in setting up the projects? By players we mean ministries, other authorities, patient organisations, professional organisations, researchers, service providers, other insurance organisations, and the like.
3. What were the motivations of these players targeted by the involvement?
4. What were or have been the obstacles in implementing the projects?
5. What were or have been the challenges related to using data in healthcare?
6. Do you have three (3) smart project level tips emerging from your experience or lessons learnt in the above mentioned project(s)? What can you recommend for projects to avoid or overcome obstacles, or challenges in project planning and implementation, or daily use of project results?
7. Do you have three (3) smart policy-level tips emerging from your experiences or lessons learnt in the above mentioned project(s)? What can you recommend for local, regional or national policy makers to help them to avoid or overcome obstacles or challenges in project planning and implementation, or daily use of project results?
8. In your opinion, which ideas from the above mentioned project(s) are useful and needed to improve public health in relation to eHealth?
9. Which issues should be solved or addressed (on the EU level) in order to improve cross-border cooperation in eHealth?

10. Which ideas are scalable to more countries?

11. Please, share papers or reports, or like project publications, or links to access these if possible.

Interim results of the literature review

An explorative literature research was performed in the databases Medline, Web of Science and EBSCO Discovery Services. Originally 1,878 references were derived. After removing duplicated references and a first selection, 231 articles remained.

Based on the abstracts these references were screened and included when they referred to cross-border or multi-country studies or projects, and applied an innovative approach of using big data or health data. This step led to the inclusion of 90 references which are currently screened on basis of the full text in order to narrow down the final number of references/projects to be included.

A preliminary classification among the 231 selected references was performed to count the number of articles that are 'cross-border' or 'systematic review'. Based on the results, there were 107 (107/231; 46%) cross-border, 30 (13%) systematic reviews whereas 15 (6%) were both cross-border and systematic reviews. Among the 90 screened references the counts were 65 (65/90; 72%), 11 (12%) and 10 (11%), respectively.

Ultimately, the included projects derived from this literature search will serve as a basis for the systematic identification and analysis of needs, barriers, facilitators and best practices for cross-border sharing of health data. This will allow us to define and present use cases with potential for European-scale benefits.

Cross-border use cases

When analysing literature considering cross-border use of health data, it is important to take into consideration the approach of eHAction Task 6.1, as well as the priorities of the eHealth Network, in order to define use cases.

The following pattern for describing use cases has been presented by eHAction WP6, Deliverable 6.1.

Title	Title of the use case
Purpose	Describes the main functionality of the use case – what is it, what does it do?
Relevance	Explains the “why” of the use case. It describes the rationale of the use case: both medical (what problem does it solve?) and economic (business case, costs and benefits)
Domain	The functional domain of the use case. For the Antilope project (ref. https://www.antilope-project.eu/front/index.html), the following domains were used: <ul style="list-style-type: none">• Medication• Radiology• Laboratory• Patient Summary• Referral and Discharge Reporting• Participatory healthcare• Telemonitoring• Multidisciplinary consultation
Scale	Organisational dimensions of the Use Case. The following scales have been defined for the Antilope Use Cases: <ul style="list-style-type: none">- Cross-border- National/Regional- Intra-organisational- Citizens at home and on the move
Context	Describes relevant aspects and influencing factors on the non-technical level
Information	High-level description of what type of information is shared, like “patient summary” or “medication prescription”
Participants	List of the main participants in the process. These can be individuals or organisational units. They are real-world parties.

Functional process steps Real-world, functional description of a sequence of interactions between the participants in the different interaction steps of a process

(Source: eHealth Joint Action Deliverable 6.1. Template from: Refined eHealth European Interoperability Framework, 2015)

The following use cases have been identified prior to conducting the literature review:

[work in progress]

The following use cases were identified while conducting the literature review:

[work in progress]

Recommendations on best practices on European level

[work in progress]

Conclusion

[work in progress]

References

1. EU General Data Protection Regulation (GDPR) - (EU) 216/679
2. https://ec.europa.eu/health/sites/health/files/ehealth/docs/bigdata_report_en.pdf
3. http://www.euro.who.int/_data/assets/pdf_file/0012/302331/From-Innovation-to-Implementation-eHealth-Report-EU.pdf
4. <http://digitalhealthage.com/ehealth-innovations-in-western-europe/>
5. https://ec.europa.eu/health/sites/health/files/ehealth/docs/ev_20180515_co27_en.pdf
6. eHAction D6.1. Roadmap on future eHDSI use cases and features. WP 6 – Enhancing continuity of care. 08-03-2018
7. <https://hbr.org/2017/03/how-to-get-ecosystem-buy-in>
8. <https://healthitanalytics.com/news/top-10-challenges-of-big-data-analytics-in-healthcare>
9. The Antilope project: <https://www.antilope-project.eu/front/index.html>

ANNEXES

1. Definitions
2. Questionnaire
3. Overview on screening of short-listed publications

Annex 1: Working definitions

- **Health data:** patient data in health records (records kept by health professionals and care providers, as well as self-reported health data), data from apps and wearables, any background data that will give insights on the social determinants of health.
- **Big data in health:** Consolidated data from existing fragmented data sources for the purpose of understanding, forecasting and improving health and health system status, needs and performance.
- **Big data analytics in health:** Statistical learning methods and algorithms applied to big data in health, which include descriptive analytics, mining/predictive analytics to support evidence-based decision making, analytical techniques that are ideal for analysing a large proportion of text-based health documents and other unstructured clinical data (e.g., physician's written notes and prescriptions and medical imaging).
- **Innovative use of health data:** The process of translating an idea or invention into a good or service that creates value, or for which customers will pay. To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products (<http://www.businessdictionary.com/definition/innovation.html>).

Annex 2: Questionnaire

eHAction WP5

Task 5.2

Questionnaire

Introduction

The purpose of this interview is to collect information about multi-country or cross-border eHealth projects, in which your country has been involved. This interview information is gathered as a part of the eHAction project that is a Joint Action (JA) co-financed by the European Commission and the Member States.

For basic information about the eHAction, please visit <http://ehaction.eu/>

One of the eHAction's main objectives is to improve the innovative use of health data. Tasks related to this eHAction objective are fulfilled by Work Package Five (WP5). WP5 has a vision to develop innovative usage of data across the healthcare sector to improve the knowledge base for health and healthcare policy. WP5 looks at data as a key driver of disruptive innovation in the economic, societal and social systems. Therefore, WP5 is committed to make an impact on the use of health data as well as assisting data-driven innovation leading to patient-centred health systems, evidence-based health policies and decision-making.

We believe that close cooperation with stakeholders is essential in achieving our objectives. Therefore, the WP5 is going to collect, compile and share the experiences of Member States/Countries for developing a knowledge base and a framework for continuous exchange of best practices on the EU level.

The eleven questions are:

1. We would like to learn about your projects and their goals that involve more than one country and also use of health data. Could you, please, tell us?
2. Which players were involved in setting up the projects? By players we mean ministries, other authorities, patient organisations, professional organisations, researchers, service providers, other insurance organisations, and the like.

3. What were the motivations of these players targeted by the involvement?
 4. What were or have been the obstacles in implementing the projects?
 5. What were or have been the challenges related to using data in healthcare?
 6. Do you have three (3) smart project level tips emerging from your experience or lessons learnt in the above mentioned project(s)? What can you recommend for projects to avoid or overcome obstacles, or challenges in project planning and implementation, or daily use of project results?
 7. Do you have three (3) smart policy-level tips emerging from your experiences or lessons learnt in the above mentioned project(s)? What can you recommend for local, regional or national policy makers to help them to avoid or overcome obstacles or challenges in project planning and implementation, or daily use of project results?
 8. In your opinion, which ideas from the above mentioned project(s) are useful and needed to improve public health in relation to eHealth?
 9. Which issues should be solved or addressed (on the EU level) in order to improve cross-border cooperation in eHealth?
 10. Which ideas are scalable to more countries?
 11. Please, share papers or reports, or like project publications, or links to access these if possible.
- (1) Additional information <https://hbr.org/2017/03/how-to-get-ecosystem-buy-in>
- (2) Additional information <https://healthanalytics.com/news/top-10-challenges-of-big-data-analytics-in-healthcare>

Annex 3: Overview on screening of short-listed publications

eHAction

WP5: Innovative use of health data

Task5.2: Sharing and learning best practices on European level (Lead: THL)

Appendix X. Overview on screening of short-listed article abstracts

(Last modified December 31, 2018)

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Laschkolnig Anja, BA MPH

Data use or application for the benefit of health (with focus of innovative, new ways)

Summary of selection process of articles for T5.2

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
1	Development and validation of telemedicine for disaster response: the North Atlantic Treaty Organization multinational system	Yes	Telemedicine for disaster response	No	-disaster response, not "usual care" (maybe still relevant information, but no focus) +cross border	No
2	The European Innovative Medicines Initiative: progress to date	Yes	pharmaceutical innovation -> including analysis of real world data	No	+large cross border cooperation -focus on pharmaceutical research	No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
3	The use of real-world evidence in European medicines regulation	?	?	?	only title, but title doesn't seem relevant	No
4	Clinical decision support system with "Smart Data Analysis" can improve detection and treatment of familial hypercholesterolemia and high vascular risk patients	?	hypercholesterolemia	?	only title, and it seems to be an poster, no article found	No
5	Big data and machine learning for crop protection	No	crop protection	No	crop protection -> not relevant, no health data	No
6	The contribution of telemedicine to humanitarian surgery	Yes	telemedicine in humanitarian surgery	No	+ cross border -only 21 cases, not relevant and innovative	No
7	mHealth and telemedicine apps: in search of a common regulation	Yes (since European perspective)	mHealth/telemedicine apps	No	-probably comment, doesn't include concrete project	No
8	Systematic review of the use of Google street view in health research: major themes, strengths, weaknesses and possibilities for future research	Yes (perspective, not projects)	big data application	No	+ two projects are addressed	Yes
9	Environmental health surveillance in a future European	Yes	environmental health surveillance	No	+ cross-border + a lot of different data combinations -> interesting	Yes

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	health information system					
10	Utilisation of real-world data from heart failure registries in OECD countries: a systematic review	Yes	real world data, heart failure registries	Yes	+ cross-border -really innovative?	Yes
11	From here to 2025: personalised medicine and healthcare for an immediate future	Yes	comment about personalised medicine, no specific projects	No	-rather broad and a comment	No
12	EU-funded initiatives for real world evidence: descriptive analysis of their characteristics and relevance for regulatory decision-making	Yes	use of real world evidence (RWE) for European Medicines Authority (EMA) decisions	Yes	-includes number of EU-funded initiatives, might be relevant to include it	Yes
13	A snapshot of health information exchange across five nations: an investigation of frontline clinician experiences in emergency care	Yes	sharing of patient information across disparate electronic health record systems	No	+ cross border analysis -no concrete application might be interesting as background information	No
14	Privacy-aware big data analytics as a service for public health policies in smart cities	Yes?	big data analytics for smart cities	No	+ big data analytics not enough information from abstract -> include	Yes
15	A new architecture of Internet of Things and	No	new architecture for health application	No	+ seems innovative	Yes

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	big data ecosystem for secured smart healthcare monitoring and alerting system					
16	Project epSOS: a cross-border electronic health in Europe	Yes	electronic health solutions	No	+cross-border and new projects	Yes
17	The challenges of a complex and innovative telehealth project: a qualitative evaluation of the Eastern Quebec telepathology network	No, but different areas in Quebec	telepathology	No	+ information about challenges related to project -> - really innovative?	Yes
18	Real-world evidence research based on big data: motivation-challenges-success factors	Yes	real-world evidence in cancer centres,	No	+ challenges and success factors, European oncology RWE network -not innovative?	Yes
19	Trigger criteria: big data	No	big data	No	-only general/comment	No
20	Internet- and mobile-based psychological interventions: applications, efficacy, and potential for improving mental health. A report of the EFPA e-Health taskforce	Yes	psychological intervention	No	-report of ehealth taskforce, focusing more on effectiveness than on application issues	No
21	Big data from clinical routine	No	broad article about big data	No	-no project or concrete application + suggested actions for EU	No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
22	Using real-world data in health technology assessment (HTA) practice: a comparative study of five HTA agencies	Yes	methods in HTA	Yes	-focus on HTA, not relevant for WP5	No
23	Information infrastructures within European health care: working with the installed base (health informatics)	Yes			-no abstract, title doesn't sound promising	No
24	From big data to smart data for pharmacovigilance: the role of healthcare databases and other emerging sources	Unclear	big data in pharmacovigilance	No	-general article, not about innovative project etc.	No
25	Real-world evidence (RWE) on outcomes and clinical treatment patterns of 5-aminosalicylic acid (5-ASA) in mild Crohn's disease (CD) from European healthcare databases (the CROHN'S investigation)	Yes	linking 3 databases	No	-not innovative, all three databases healthcare-	No
26	Satellite integrated heterogeneous architecture for professional health services	Yes	satellite telemedicine	No	+EU project +integrated satellite terrestrial network for ICT professional medical platform -> seems innovative, to be further assessed	Yes

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
27	Measuring electronic health record use in primary care: a scoping review	No	EHR use	(Yes)	-not cross border -not innovative scoping review	No
28	Digital health app development standards: a systematic review protocol	No	criteria for developing health apps	Yes	-it's about standards and frameworks for/of health apps	No
29	MIE2018 - Medical Informatics Europe - Gothenburg, Sweden The CrowdHEALTH approach for health policy making based on big data analytics	Yes	policy toolkit	No	not enough information from abstract, include to check	Yes
30	Identifying obstacles and research gaps of telemedicine projects: approach for a state-of-the-art analysis	No	approach for an evaluation of telemedicine projects with qualitative methods	No	+overview of 10 projects in telemedicine -probably more about method of evaluation, but maybe still check to be sure	Yes
31	Nursing, professional curiosity and big data cocreating eHealth	No	deep dive study track	No	-about conference discussions, not relevant	No
32	European perspectives on big data applied to health: the case of biobanks and human databases	No	general about data collection in biobanks	No	analysis of the current situation of the European Union and two cases	No
33	An assessment framework for e-Mental health apps in	No	framework for e-mental health apps	No	-framework for health apps using a delphi process, not innovative regarding use of data	No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	Canada: results of a modified Delphi process					
34	Facilitating factors and barriers to the use of emerging technologies for suicide prevention in Europe: multicountry exploratory study	Yes	emerging technologies suicide prevention	No	+ cross-border -not a concrete project/application -not clear what emerging technologies means	No
35	eHealth in integrated care programs for people with multimorbidity in Europe: insights from the ICARE4EU project	Yes	ehealth in integrated care	No	+ cross border + e-health for integrated care -> large project, describes implementation/benefits barriers	Yes
36	Ambivalence in digital health: co-designing an mHealth platform for HIV care	Yes	co-designing of mhealth platform with patients	No	-about involvement aspects, not about the project itself	No
37	Position paper: The use of real-world data in cancer drug development	No	about integration of RWE in HTA and regulatory decisions	No	-general article about RWE and possible ways of integration	No
38	Representativeness of European clinical trial populations in mild Alzheimer's disease dementia: a comparison of 18-month outcomes with real-world data from the GERAS observational study	Yes	mild alzheimers disease dementia	No	-comparison of RCT vs. RWD regarding outcomes of, whether RWD can help in assessing RCT outcomes	No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
39	So-Lo-Mo Study: an mHealth intervention to improve the efficacy of the smoking cessation process	No	mhealth intervention for smoking cessation	No	+ might be an interesting public health example -not cross border	No
40	Real-world data reveal a diagnostic gap in non-alcoholic fatty liver disease	Yes	primary-care record study	No	+ cross border -one disease and not innovative?	No
41	Telemedicine in dermatology: findings and experiences worldwide - a systematic literature review	No	telemedicine in dermatology	Yes	-review about telemedicine in dermatology, not sure if international examples but no really on project basis	No
42	Big data and public health systems: issues and opportunities	No	general article about big data in public health	No	-general overview about main features of EU public health system model, not innovative	No
43	A systematic review of mHealth interventions for the support of eating disorders	Yes	effectiveness of mhealth application for eating disorder	Yes	-effectiveness not our focus? -only one disease	No
44	The use of real-world data in cancer drug development	No	about integration of RWE in HTA and regulatory decisions	No	-general article about RWE and possible ways of integration	No
45	Eustar: European Society of Hypertension Telemedicine in Arterial Hypertension	Yes	telemedicine for hypertension	No	+ cross border + specific software -innovative?	Yes

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	Register 2018: design and rationale					
46	Pre-testing mHealth interventions: a case report	No	mhealth intervention for smoking cessation in pregnant women	No	-not cross border -evaluation, qualitative and not on the broader aspects (e.g. implementation)	No
47	The Presence of eHealth Support for Childhood Obesity Guidance	Yes	ehealth application for children, Europe-wide survey	No	-only one disease +overview of ehealth projects across member states	Yes
48	Epidemiology in wonderland: Big Data and precision medicine	No	general article about big data and epidemiology	No	-general article, not cross border	No
49	ImpleMentAll: Towards evidence-based tailored implementation strategies for eHealth	No		No	-not innovative	No
50	Implementation of eHealth Interventions Across the HIV Care Cascade: a Review of Recent Research.	Yes	ehealth in HIV care	Yes	+cross border -not sure if innovative ->check	Yes
51	Machine Learning of Toxicological Big Data Enables Read-Across Structure Activity Relationships (RASAR) Outperforming Animal Test Reproducibility.	No	prediction of health hazards using chemical hazard database and NLP	No	+ novel method	Yes

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
52	Proposal for an eHealth Based Ecosystem Serving National Healthcare.	Yes	articulates a framework for deriving a national healthcare system	No	+ articulates a framework for deriving a national healthcare system	No
53	Monitoring and Benchmarking eHealth in the Nordic Countries.	Yes	consecutive analysis of National eHealth policies in the Nordic countries from 2012 to 2016	review	+ development of indicators to monitor the progress of eHealth -monitoring of understandability and usability of eHealth systems -no data	No
54	Untire: an all-embracing self-management eHealth program to cope with cancer-related fatigue.	Yes	Online interventions to reduce cancer-related fatigue	No	+'Untire' app will be launched in several languages throughout the European Union and some other countries outside Europe -addresses only cancer disease	Yes
55	Big data and precision medicine: challenges and strategies with healthcare data	No		No	-not innovative	No
56	Special issue: e-health innovations for global mental health				+don't have enough details yet but needs to be reviewed	Yes
57	Developing a Third-Party Analytics Application Using Australia's National Personal Health Records System: Case Study	No	application to translate MyHR into a clinically meaningful timeline visualisation of health data for both patients and clinicians	No	+good application to have people-centric system +uses data -only one country	Yes
58	How can Health Systems Prepare for	No		No		No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	New and Emerging Health Technologies? the Role of Horizon Scanning Revisited					
59	10,000 Steps Australia: a community-wide eHealth physical activity promotion programme.	No	physical activity promotion programme	No	not much detail and hence, needs to be checked. -only one country	Yes
60	Real world evidence (RWE) - a disruptive innovation or the quiet evolution of medical evidence generation?					
61	The use of Big Data in health-related questions: UNESCO and APEC perspectives	Yes	general use of big data in health	review	+synthesis of the use of big data in health as evaluated by international organisations and also regional organisations	No
62	Detailed Perceptions by Health Service Providers Around EHRs: A Case Study of Australia's e-Health Solution	No	to understand the health care provider's perceptions and expectations	No	+pilot study implemented in Australia and has a possibility to expanded to other countries -exploratory work	No
63	HTA und aktuelle Herausforderungen: Harmonisierung, Real World Data und Surrogatparameter ; HTA - How to tackle pressing challenges: International Harmonization, Real	No		No		No

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	World Data, and Surrogates					
64	Can female fertility management mobile apps be sustainable and contribute to female health care? Harnessing the power of patient generated data ; Analysis of the organisations active in this e-Health segment	Yes	app for female fertility and other information	No	+addresses women's health care -narrow scope and may not be innovative	No
65	Health Technology Assessment Evidence on E-Health/m-Health Technologies: Evaluating the Transparency and Thoroughness		not sure		many articles on HTA and we need to decide the scope of it.	Uncertain
66	Implementation of a nationwide electronic health record (EHR): The international experience in 13 countries	Yes	comparisons and pros and cons of EHR in different countries	review	+compares EHR from different countries and identifies common barriers etc.	Yes
67	Data rich, information poor; can we use electronic health records to create a learning healthcare system for pharmaceuticals?	No				No
68	Improving the Safety Assessment of	No				No

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	Chemicals and Drug Candidates by the Integration of Bioinformatics and Chemoinformatics Data.					
69	How immunological profile drives clinical phenotype of primary Sjogren's syndrome at diagnosis: analysis of 10,500 patients (Sjogren Big Data Project).	Yes	To evaluate the influence of the main immunological markers on the disease phenotype at diagnosis in a large international cohort of patients with primary Sjogren's syndrome	No	+multi-country study + uses big data -narrow in scope	Yes
70	Brain-CODE: A Secure Neuroinformatics Platform for Management, Federation, Sharing and Analysis of Multi-Dimensional Neuroscience Data.	Uncertain	database on patients with different brain disorders	No	+database architecture -narrow in scope	Yes
71	Towards the virtual human patient. Quantitative Systems Pharmacology in Alzheimer's disease	No				No
72	Tracing Individuals under the EU Regime on Serious, Cross-border Health Threats: An Appraisal of the System of Personal Data Protection	Yes	data protection law etc.	No	+one among many challenges of the health-security nexus in the EU -no data but only discussion	No

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73	Child Health Informatics - a Neglected Area of European E-Health Activity	Yes	child health issues	No	+one of the rare articles focusing on child health +primary care for children in 30 countries and the role of EHR -findings are based on MOCHA project and will require further assessment for its relevance	Yes
74	Promoting and Protecting Public Health: How the European Union Pharmacovigilance System Works	No			Is pharmacovigilance relevant for us?	No
75	New algorithms for processing time-series big EEG data within mobile health monitoring systems	Uncertain	mobile health system to monitor epileptic seizures	No	+45 experiments were carried out to assess the system -not clear whether it is cross-border case but could have wider application -application to only one type of disease	Yes
76	Supporting Pharmacovigilance by Landscaping EU-funded Real World Data				needs to see the details before deciding	Uncertain
77	VetCompass Australia: A National Big Data Collection System for Veterinary Science	No	VetCompass Australia to monitor animals health	No	-veterinary medical records-based research +good ideas and can be used to draw a schema for public health monitoring	No
78	Factors influencing the development of primary care data collection projects	Yes	Identification of worldwide current primary care data collection projects	Yes	+discussion on what kind of support is needed for GPs to use primary health care data etc. -useful for recommendations though wide scope	Yes

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	from electronic health records: a systematic review of the literature					
79	Drones in medicine- The rise of the machines	Uncertain	use of drone for various purposes in public health	No	+good for advancement of healthcare -may not be useful for innovative use of data	No
80	Making electronic health records support quality management: A narrative review	Yes	Factors that would make EHR support: clinical outcomes, managerial monitoring and cost-effectiveness.	Yes	+usefulness of EHR critically reviewed +will provide guidelines for EHR support and importance of type of EHR to be specified	Yes
81	How Do Countries' Health Information Systems Perform in Assessing Asylum Seekers' Health Situation? Developing a Health Information Assessment Tool on Asylum Seekers (HIATUS) and Piloting It in Two European Countries	Yes	Health Information Assessment Tool on Asylum Seekers (HIATUS)	No	+application targets a specific population subgroup (asylum seekers) -no data used -narrow in scope	No
82	The use of smartphone health apps and other mobile health (mHealth) technologies in dietetic practice: a three country study	Yes	use of health apps and text messaging in dietetic practice and formulated intervention recommendations for supporting app uptake by dietitians	No	-targets dietitians only +could be integrated in diet care and advice for several diseases	No
83	A SMART data analysis method for constructing adaptive treatment strategies	No	method for constructing treatment strategies for substance use disorders	No	+good methodological application of the use of data in treatment strategies -narrow in scope	Yes

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	for substance use disorders					
84	A planetary health approach to emerging infections in Australia	No				No
85	eHealth adoption factors in medical hospitals: A focus on the Netherlands	No	development of an organisational eHealth adoption model	No	+good model to look at for adoption in different EU countries -narrow in scope	No
86	A New Era: Automated Extraction of Detailed Prostate Cancer Information from Narratively Written Health Records. Pioneer Work from a European Tertiary Care Center	Yes	Automated extraction of detailed pathological information	No	+fills in the gap of pathological information needed in decision making -application to one disease, prostate cancer	Yes
87	A Precision Medicine Initiative for Alzheimer's disease: the road ahead to biomarker-guided integrative disease modelling	Yes	Use of data for enhanced risk screening, detection, treatment, and prevention of Alzheimer Disease	No	+innovative use of data -methodological	Yes
88	Digital health: Promises, challenges, and fears. A literature review	Uncertain	reviews digital health from the view point of enthusiasm and critical attitude	Yes	+brings out two important aspects for the success of digital health and own data sharing -narrow in scope	No
89	Utility of social media and crowd-sourced data for pharmacovigilance: a	Yes	review of studies on reporting of adverse outcomes and drug safety	Yes	-no direct use of data or related discussion +under-reporting of adverse outcomes considered	No

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	scoping review protocol					
90	European healthcare systems readiness to shift from 'one-size fits all' to personalized medicine	Yes	personalised medicine	No	+Key challenges such as integration of big data, health literacy etc. need to be overcome in order to strengthen the implementation and uptake of PM +gives an overview of what works and what does not work -no data use or innovative use	No
91	Health Information Infrastructure for People with Intellectual and Developmental Disabilities (I/DD) Living in Supported Accommodation: Communication, Co-Ordination and Integration of Health Information.			Yes		No
92	Outcomes of using telehealth for the provision of healthcare to Aboriginal and Torres Strait Islander people: a systematic review.			Yes		No
93	Global Data News	Yes			need to see the details	Yes
94	The Diffusion of Discontinuous Digital Innovations in Health Care: An Empirical Analysis of	Yes	telemedicine		need to see the details	Yes

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	Telemedicine Adoption in Europe					
95	Denmark Leads New EU Task Force Exploring Use Of Big Data In Medicines Assessment	Yes	use of big data in medicines assessment	No	need to see the details	Yes
96	W050: m-RESIST project as an example of m-health approach in schizophrenia: Content, aims and realization	Yes	m-RESIST, the first mHealth intervention program for patients with treatment resistant schizophrenia (TRS)	No	+innovative use of data	Yes
97	W048: Emerging sensor-based m-health interventions in the assessment of psychotic symptoms	Yes	m-RESIST	No	+innovative use of data	Yes
98	Nationwide citizen access to their health data: analysing and comparing experiences in Denmark, Estonia and Australia.	Yes	how the different e-portal systems support, protect and structure citizen interactions with their own health data in three key areas: Security, privacy and data protection; User support; and Citizen adoption and use	No	+citizen centric perspective +uses data from different sources	Yes
99	Prerequisites for International Exchanges of Health Information for Record Research: Comparison of Australian, Austrian, Finnish, Swiss, and US Policies.	Yes	health information exchanges for research purposes	No	+policy guidelines on using data for research purposes	No

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100	Why Are Children's Interests Invisible in European National E-Health Strategies?	Yes	primary care for children	No	+second article about primary care of children	Yes
101	Research Paper: What can Google and Wikipedia tell us about a disease? Big Data trends analysis in Systemic Lupus Erythematosus	No	internet search volumes linked to Lupus	No	about internet search volumes from Google	No
102	Original article: Application of telemedicine in obesity management	No	obesity	No	RCT/evaluation of obesity intervention, not sure if innovative but definitely not cross-border	No
103	Enhancing the provision of health and social care in Europe through eHealth	Yes	evidence-based guidelines for implementing e-health services in nursing and social care	No	guidelines, not specific projects that implement innovative approaches	No
104	Big data from electronic health records for early and late translational cardiovascular research: challenges and potential	No	cardiovascular disease	Yes	-relatively broad and not on innovative aspects +could include relevant projects	Yes
105	The 7 Habits of Highly Effective Implementation of eHealth Enabled Integrated Care	No	integrated care	Yes	no cross-border project, focusing on integrated care but more process of implementation than innovative	No
106	The contribution of ehealth and mhealth					

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	to improving the performance of the health workforce: a review					
107	Innovative approach for self-management and social welfare of children with cystic fibrosis in Europe: development, validation and implementation of an mHealth tool (MyCyFAPP)	Yes	mobile application for cystic fibrosis	No	innovative approach and cross-border project	Yes
108	Cost of breast cancer based on real-world data: a cancer registry study in Italy	No	cancer	No	costing study using real-world data, but not cross border etc.	No
109	Big data for better outcomes: supporting health care system transformation in Europe	Yes	different	no	Innovative Medicines Initiative Big Data for Better Outcomes -> umbrella organisation, should be checked for projects	Yes
110	Systematic review of the use of behaviour change techniques in physical activity eHealth interventions for people with cardiovascular disease	No	physical activity ehealth interventions	Yes	-study about effectiveness of intervention	No
111	The use of the mHealth program Smarter Pregnancy in preconception care:	No	pregnancy and preconception care	No	not cross-border, RCT for the application, not sure if innovative use of data	No

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	rationale, study design and data collection of a randomized controlled trial					
112	eHealth Spare Parts as a Service: Modular eHealth Solutions and Medical Device Reform	No	eHealth platform for mHealth apps	No	it's a comment and about market and legal requirements for it, general article and not about a concrete project	No
113	Mondaq Business Briefing					
114	Critical Incidents of Growth in Nordic eHealth Service Start-Ups	No	about e-health service start ups	No	not cross border, Finnish and Swedish start-ups and what incidents they face	No
115	RWE in Europe Paper II: The use of Real World Evidence in the disease context	No	pricing and reimbursement	No	focus on pricing and reimbursement, not innovative	No
116	mHealth Application Areas and Technology Combinations*. A Comparison of Literature from High and Low/Middle Income Countries.	No	general	Yes	compares m-health application areas and literature , not innovative	No
117	The Use of Data Analytics to Build an Australian Context-Sensitive Health Informatics Framework for	No	development of health informatic framework	No	-framework, whether it works -> not innovative or relevant	No

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	Consumer-Directed Community Aged Care.					
118	Development of a New ICT-Based Multisensor Blood Pressure Monitoring System for Use in Hemodynamic Biomarker-Initiated Anticipation Medicine for Cardiovascular Disease: The National IMPACT Program Project	No	blood pressure	No	multisensor home and ambulatory blood pressure (BP) monitoring system -> analysis of it	No
119	THE PsyLOG MOBILE APPLICATION: DEVELOPMENT OF A TOOL FOR THE ASSESSMENT AND MONITORING OF SIDE EFFECTS OF PSYCHOTROPIC MEDICATION	Yes, at least part of EU project	psychiatric disorder	No	development of app, to be checked whether project makes sense	Yes
120	IASIS: Integration and analysis of heterogeneous big data for precision medicine and suggested treatments for different types of patients	Uncertain	precision medicine	No	not much information, but integrating data from disparate sources -> could be larger project	Yes
121	Precision Medicine: From "Omics" to Economics towards	Uncertain	Uncertain	Uncertain	only title, but doesn't seem relevant, rather general article	No

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	Data-Driven Healthcare - Time for European Transformation					
122	JIBS Dissertation Series					
123	From Privacy to Data Protection in the EU: Implications for Big Data Health Research	Uncertain	big data in general	No	general comment/article about big data in health	No
124	m-RESIST, a complete m-Health solution for patients with treatment-resistant schizophrenia: a qualitative study of user needs and acceptability in the Barcelona metropolitan area	Yes	mhealth in schizophrenia	No	same project as 202 and 96, relevant project	Yes
125	Setting the scene for the future: implications of key legal regulations for the development of e-health interoperability in the EU	No	general	No	comparison of key legal regulations	No
126	Impact of Parent-Targeted eHealth on Parent and Infant Health Outcomes: A Scoping Review.	No	Infant health outcome	Yes	scoping review, effectiveness of e-health applications for infant ehealth outcomes	No

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127	Behavior Change Techniques in Physical Activity eHealth Interventions for People With Cardiovascular Disease: Systematic Review.	No	cardiovascular disease	Yes	effectiveness of behaviour change techniques	No
128	Health Data for Public Health: Towards New Ways of Combining Data Sources to Support Research Efforts in Europe.	Uncertain	re-use of health administrative data	No	+description of collaborative projects	Yes
129	eHealth provides a novel opportunity to exploit the advantages of the Nordic countries in psychiatric genetic research, building on the public health care system, biobanks, and registries.	No	psychiatric genetic research	No	article about Nordic countries and advantages they have regarding genetic research and e-health	No
130	Validation of Algorithm to Identify Persons with Non-traumatic Spinal Cord Dysfunction in Canada Using Administrative Health Data.	No	no-traumatic spinal cord dysfunction	No	development and validation of algorithm, not cross-border	No
131	Secondary Use of Recorded or Self-expressed Personal Data: Consumer	No	self-expressed personal data	Yes	about how self-expressed personal data is use, general article	No

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	Health Informatics and Education in the Era of Social Media and Health Apps.					
132	mHealth based interventions for the assessment and treatment of psychotic disorders: a systematic review.	No	mHealth in psychotic disorders	Yes	-analysing effectiveness of mhealth applications	No
133	S104: Big data market analysis of e-health in medical neuroscience	No	neuroscience	No	market analysis of ehealth, not relevant	No
134	Assessing the value of cancer treatments from real world data—Issues, empirical examples and lessons learnt	No	cancer	No	general articles about real world data in cancer research	No
135	2017 IEEE 30th International Symposium on Computer-Based Medical Systems (CBMS), Computer-Based Medical Systems (CBMS), 2017 IEEE 30th International Symposium on, CBMS	No	m-health wellness/health intervention apps	No	-not specific or innovative,	No
136	Economic evaluation of personalized	No	personalised medicine	No	article about economic evaluation of personalised medicine	No

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	medicine: a call for real-world data					
137	Use of telemedicine in the European penitentiaries: current scenario and best practices	No	telemedicine in penal institutions	No	-just overview how many telemedicine services there are	No
138	2017 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Engineering in Medicine and Biology Society (EMBC), 2017 39th Annual International Conference of the IEEE	No	different	No	description of four different Italian projects	No
139	Public health policy for management of hearing impairments based on big data analytics: EVOTION at Genesis	Yes	hearing loss	no	new European research and innovation project-> need to be checked whether there is already enough information	Yes
140	m-RESIST project as an example of m-health approach in schizophrenia: Content, aims and realization	Yes	mhealth in schizophrenia	No	same project as 202, relevant project	Yes
141	Using big data to solve a big problem					

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142	Clinical epidemiology in the era of big data: new opportunities, familiar challenges	No	clinical epidemiology	No	-seems like comment, broad +mentions Nordic/European/multinational collaborations in big data -> to be checked	Yes
143	Progress in the Enhanced Use of Electronic Medical Records: Data From the Ontario Experience	No	different	No	only Ontario, analysis of progress in EMR use > not relevant	No
144	Policies for Use of Real-World Data in Health Technology Assessment (HTA): A Comparative Study of Six HTA Agencies.	No	cardiovascular disease	No	multisensory home and ambulatory blood pressure system -> specific example but not cross border collaboration or innovative use of big data	No
145	Public use of electronic personal health information: Measuring progress of the Healthy People 2020 Objectives.	Yes	increase amount of people who use internet to track personal health information	No	-very specific, doesn't seem innovative and just a joint analysis	No
146	The Use of RESTful Web Services in Medical Informatics and Clinical Research and Its Implementation in Europe.	No	web services	Yes	not relevant, no disease area but web services	No
147	Distributed Data Networks That Support Public Health Information Needs.	No	data networks	No	about different data networks in the US and their experiences	No

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148	Quasi-Experimental Evidence on the Effects of Health Information on Preventive Behaviour in Europe	Yes?	breast cancer screening	No	data linkage used to analyse effects of health information, check if cross-border and innovative	Yes
149	Developing health information by ethnic status in Europe: a pilot data linkage study in Scotland	Uncertain	linkage study	No	study about data linkage, doesn't seem cross border, not sure if innovative but maybe check	Yes
150	The state of e-health and m-health in Europe - the eHealth Week 2016 Experience	Uncertain	Uncertain	No	information about e-health week, not project: only title	No
151	Viability of using Electronic Medical Records from European Countries as Data in Novelty (A Novel Observational Longitudinal Study of Patients with Asthma And/or Copd)	Yes	application in asthma patients	No	+innovative use +novel method	Yes
152	Factors that influence the implementation of e-health: a systematic review of systematic reviews (an update)	Yes	review of review of the potential of eHealth	Yes	+gives good overview	Yes
153	Efficacy of an mHealth intervention to stimulate physical activity in COPD patients after	No	mHealth in COPD	No	- not cross-border but good application	No

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	pulmonary rehabilitation					
154	Big Data, epistemology and causality: Knowledge in and knowledge out in EXPOsOMICS	Uncertain		No	Might be worth finding out more about EXPOsOMICS because it is not clear from the abstract.	Uncertain
155	Exploiting IoT technologies for enhancing Health Smart Homes through patient identification and emotion recognition	Uncertain	uses data to improve health care	No	Good application keeping in mind ageing population Not clear how much data are being used	Yes
156	Big data to smart data in Alzheimer's disease: Real-world examples of advanced modeling and simulation	No	Alzheimer's disease	No	Methodological article	No
157	Decision support in addiction: The development of an e-health tool to assess and prevent risk of fatal overdose. The ORION Project	Yes	Addiction support	No	Cross-border Clinical data collection and use If necessary, interview to be conducted for more information	Yes
158	Pharmacovigilance without borders: electronic health records in different countries can be used to address important methodological issues	Yes	adverse events and pharmacovigilance	No	cross-border methodological	Yes

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	in estimating the risk of adverse events					
159	Population Aging in the European Information Societies: Towards a Comprehensive Research Agenda in eHealth Innovations for Elderly	No				No
160	Big Data in medical research and EU data protection law: challenges to the consent or anonymise approach	No				No
161	A review of linked health data in Australian nephrology	No				No
162	Smart eye data. Development of a foundation for medical research using Smart Data applications	Uncertain	Data warehouse in ophthalmology	No	Good example of combining data Exact outcome and use are not clear	Yes
163	Use of big data in the surveillance of veterinary diseases: early detection of tick paralysis in companion animals	No				No
164	Evaluation of European Alzheimer's Disease Real-World Data Sources for	No				No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	Future Pharmacoeconomic Or Outcomes Research					
165	System for Enabling Clinicians to Relate to a Mobile Health App: Preliminary Results of the Norwegian Trial in the Eu Fi-Star Project				To be checked	Yes
166	Key features of an EU health information system: a concept mapping study	No				No
167	SME2EM: Smart mobile end-to-end monitoring architecture for life-long diseases	Uncertain	Good application of monitoring of life-long diseases such as epilepsy	No	Good example Wider applicability may need more experiments	Yes
168	Cost-benefit assessment of using electronic health records data for clinical research versus current practices: Contribution of the Electronic Health Records for Clinical Research (EHR4CR) European Project	Yes	innovative technological platform to enable the re-use of EHR data for clinical research	No	European project providing an innovative technological platform to enable the re-use of EHR data for clinical research Could be considered for an interview if more information is needed	Yes
169	A generalised adoption model for services: A cross-country comparison of	Yes	mobile health services	No	Non-European cross-border case Adoption requires country's cultural traits	No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	mobile health (m-health)					
170	E-Health in Europe: Current situation and challenges ahead	Yes	General	Yes	Will provide an overview of challenges faced by healthcare systems in EU	Yes
171	Mini-review: Big Data and machine learning in radiation oncology: State of the art and future prospects	Uncertain	learning health system for prediction of treatment outcome	No	Methods provided to make efficient use of EHR for predicting treatment outcome Wider applicability needs to be evaluated	Yes
172	"A European developed eHealth technology does not lead to a European implementation strategy towards (business) exploitation: a tale of two countries"	Yes	evaluation of telemedicine, a one-size-fits-all business model	No	gives ideas on the limitations of a one-size-fits-all business model for telemedicine narrow scope but general EU-level eHealth recommendations can be evaluated similarly	Yes
173	Update on eHealth developments in Europe	Yes	an overview of different applications and initiatives of eHealth in Europe	review	necessary to review and see if there are relevant projects where more information should be gathered	Yes
174	European Procurers Platform – eHealth Transforming the market for eHealth Solutions	Yes	European Procurers Platform for hospitals	No	provides practical issues related to uptake of eHealth solutions across Europe	Yes
175	Using Big Data to Assess Prescribing Patterns in Greece: The Case of Chronic Obstructive Pulmonary Disease	No	big data analysis of Greek COPD prescribing patterns	No	big data analysis of Greek COPD prescribing patterns	No

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176	2016 15th International Conference on Ubiquitous Computing and Communications and 2016 International Symposium on Cyberspace and Security (IUCC-CSS), Ubiquitous Computing and Communications and 2016 International Symposium on Cyberspace and Security (IUCC-CSS), International Conference on, IUCC-CSS	Yes	mHealth use in patient monitoring	No	quantitative measures for the indicators measuring innovation outputs in the domain of mHealth for patient monitoring. see whether similar indicators can be recommended for eHealth in general	Yes
177	Ensuring Evidence-Based Safe and Effective mHealth Applications	general	mHealth evaluation at a general level	No		No
178	The EU-project United4Health: User-centred design of an information system for a Norwegian telemedicine service					No
179	eHealth Development in Selected EU Countries: Barriers and Opportunities				Same project as described in 174. This can be reviewed after reviewing 174.	No

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180	Physical activity in ankylosing spondylitis: evaluation and analysis of an eHealth tool	Uncertain	eHealth tool, the AS Observer, for monitoring Ankylosing spondylitis (AS) patients	No	evaluation of an eHealth tool, the AS Observer, specifically designed to monitor symptoms, quality of life and physical activity in AS pilot study but could have wider scope	Yes
181	TRANSFoRm eHealth solution for quality of life monitoring	Yes	eHealth solution for quality of life monitoring	No	detailed description of the mobile and web applications	Yes
182	Integrating Telemedicine Solutions with Electronic Health Records; Evaluation of Alternatives based on the Proposed Reference Architecture for Norway. Report 02-2016	No				No
183	CHROMED Telemedicine Project	Yes	telemedicine for elderly care	No	speciifc application of telemedicine	Yes
184	The use of Real World Evidence in the European context: An analysis of key expert opinion	Yes	use of RWD in overall survival, morbidity, avoidable mortality and quality of life among others	Uncertain	Good article giving use of RWD	No
185	PHP332: Real World Evidence in Europe: A Snapshot of its Current Status	Yes	Similar to the reference 184 above	Yes		No
186	EHealth Technologies in Inflammatory Bowel	Yes	EHealth Technologies in Inflammatory Bowel Disease	Yes		Yes

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	Disease: A Systematic Review.					
187	Large Scale eHealth Deployment in Europe: Insights from Concurrent Use of Standards.					No
188	Usefulness of a Tailored eHealth Service for Informal Caregivers and Professionals in the Dementia Treatment and Care Setting: The eHealthMonitor Dementia Portal					No
189	Health Data Entanglement and artificial intelligence-based analysis: a brand new methodology to improve the effectiveness of healthcare services					No
190	Scaling up health knowledge at European level requires sharing integrated data: an approach for collection of database specification	Yes			may not be innovative	No
191	Research note A European ehealth					No

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	space for moving cross-border eprescription and patient summary services forward					
192	Reconciling evidence-based medicine and precision medicine in the era of big data: challenges and opportunities					No
193	PR Newswire Europe					No
194	Study on Big Data in Public Health, Telemedicine and Healthcare	Yes	policy recommendations	Yes		No
195	Exploring health information technology implementation success factors: a comparative investigation in Nordic countries					No
196	Monitoring of Chronic Disease in the community: Australian Telehealth Study on Organisational Challenges and Economic Impact	No				No
197	A scoping review of Australian allied	No				No

Ref no	Publication title	Cross-border	Application(s)	Systematic review	Pros & Cons for inclusion of article in full-text review	Select for T5.2
	health research in ehealth.					
198	Visualising linked health data to explore health events around preventable hospitalisations in NSW Australia.	No				No
199	An innovative and integrative m-Health solution for treatment resistant schizophrenia patients	Yes	an integrated care addressed to empower patients suffering from resistant schizophrenia.m-RESIST intervention	No		Yes
200	Making sense of big data in health research: Towards an EU action plan					No
201	Universally accessible e-health services for all: How to develop accessible health services in Norway	No	ad hoc user panel, observed and interviewed	No	+ accessible e-health services for all - area is Norway	Yes
202	Treatment-resistant schizophrenia during life span : Epidemiology, outcomes and innovative M-Health treatments within M-RESIST Project	Yes	article: innovative project	No	+innovative project +predictive models +M-Health treatments -only 1 illness	Yes
203	Telemedicine uptake among Genetics	Yes	online survey	No	+alternative ways of providing genetic services	No

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	Professionals in Europe: room for expansion				-maybe not innovative? Telephone, Videoconferencing etc.	
204	M-health innovations for patient-centered care	Yes	This book is a pivotal reference source for the latest scholarly research	No	+very interesting +available technologies, necessary support infrastructures, and alterations in business models etc.	Yes
205	Telemedicine technologies for diabetes in pregnancy: A systematic review and meta-analysis	Yes	systematic review and meta-analysis	Yes	+whether telemedicine solutions offer any advantages compared with the standard care -diabetes in pregnancy, only 1 illness	Yes
206	Making Big Sense from Big Data in Toxicology by Read-Across	Yes	article: Big Data in Toxicology	No	+big data +a new web-based tool	Yes
207	[Research applications in digital radiology. Big data and co].	Yes	article: presents current research results	No	+The future in radiology +clinical decision support -radiology, only 1 expertise area	Yes
208	A Review of Emerging Technologies for the Management of Diabetes Mellitus	Yes	A critical literature review analysis	Uncertain	+very interesting +Glucose and lifestyle sensing technologies +powerful user centred approaches	Yes
209	Pooling real-world multiple sclerosis patient data on a European level: a true story of success	Yes	article: story of success	No	+MS data from previously unconnected sources can be integrated to inform research -maybe not innovative?	No
210	Advancing therapy-oriented telemedicine	Yes	article: IT solutions for the health sector	No	+telemedicine applications and methods	Yes

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	- Does Europe have an answer?				-maybe not innovative?	
211	What seems to be the problem?-A study of connections between national contexts and regional e-health strategies	Yes	article: two different European regions, a cross-sectional case-study	No	+e-health research and innovation projects or implementation projects in the two regions -areas are Switzerland and Norway	Yes
212	Evaluation of personal health record systems through the lenses of EC research projects	Yes	systematic review and requirement analysis	Yes	+real-world implementation experiences of several European research projects	Yes
213	The Cardiovascular Health in Ambulatory Care Research Team (CANHEART) Using Big Data to Measure and Improve Cardiovascular Health and Healthcare Services	No	observational research, record linkage	No	+measuring and improving cardiovascular health and the quality of ambulatory cardiovascular care +CANHEART study cohort to serve as a powerful big data resource -area: Ontario, Canada	Uncertain
214	Using diffusion of innovation theory to understand the factors impacting patient acceptance and use of consumer e-health innovations: a case study in a primary care clinic	No	A longitudinal case study, theoretical lens of Rogers' innovation diffusion theory	No	+typical consumer e-health innovation - an e-appointment scheduling service - was developed and implemented in a primary health care clinic +The factors contributing to the low the adoption rate -area: regional town in Australia	Yes
215	Using electronic health records for clinical research: The	Yes	combining and extending several previously isolated state-of-the-art technical components through a new	No	+different major disease areas, various local and national stakeholders across several countries and therefore under various legal frameworks	Yes

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	case of the EHR4CR project		approach to develop a platform for reusing EHR data to support medical research		-platform?	
216	Ergonomic Design in eHealthcare: A Study Case of eHealth Technology System	No	a study case	No	+E-Health technology system is an integrated set of service (E-Health technology service) 1–3] and the teleservice medical product (E-Health technology station) -maybe not innovative?	Yes
217	National health models and the adoption of eHealth and ePrescribing in primary care – new evidence from Europe	Yes	A review of published literature from 2000 to 2014	Uncertain	+development and adoption of ePrescribing in Europe +The highest adoption rates are in countries with the NHS model, concentrated in the Nordic area	Yes
218	Empowering patients through eHealth: a case report of a pan-European project	Yes	This paper crystallises the experience developed by the pan-European PALANTE Consortium in dealing with the generation of relevant evidence from heterogeneous eHealth services for patient empowerment in nine European Regions	No	+Three lessons have been collectively learnt during the development of the PALANTE project -The main challenge has been the generation of large-scale evidence from heterogeneous small-size experiences	No
219	HOW eHEALTH CAN HELP WITH EUROPE'S CHRONIC DISEASES EPIDEMIC	Yes	article, (very short summary)	No	+how electronic health (eHealth) technologies can help with the challenge of the chronic diseases epidemic	Uncertain
220	Nordic Longitudinal Data from Electronic Medical Records and Full Population National Registers: Unique Opportunities for New Insights in	Yes	observational study	No	+provide contemporary insights of Type 2 DM disease progression and treatment development -maybe not innovative?	No

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	Benefit of Diabetes Patients.					
221	Monitoring the Amount of Practical Use of eHealth on National Level by Use of Log Data: Lessons Learned.	Yes	collecting and comparing log data harvested from national logs in the Nordic countries	No	+A thorough analysis, definitions of the indicators -focus: eHealth policies	No
222	Assessment of Mast in European Patient-Centered Telemedicine Pilots	Yes	A questionnaire was administered for project leaders of the pilots	No	+Model for ASsessment of Telemedicine Applications (MAST) +twenty-one pilots +innovative patient-centred telemedicine services	Yes
223	What Are Complex eHealth Innovations and How Do You Measure Them? — Position Paper	Yes	literature was searched, position paper	No	+eHealth innovation is relative +A good understanding of what constitutes innovative eHealth developments allows the degree of innovation to be measured and interpreted -discussion	Yes
224	Conceptual Schemes for M2m Architectures in E-Health Context. a Comprehensive use Cases Review and Standardization Trends	Yes	study and review	No	+identifying theoretical concepts with real situations and specific devices +use cases -standards, M2M standardisation	Yes
225	State of The Art in Adoption of E-Health Services in Italy in The Context of	Yes	case study	No	+the consequences that e-government technologies, embedded in European governments' strategies, have on public service delivery at a practical stage	Uncertain

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	European Union E-Government Strategies				-European Union and Italy	
226	National Health Models and the Adoption of E-Health and E-Prescribing in Primary Care – New Evidence from Europe	Yes	A review of published literature from 2000 to 2014	Uncertain	+models and adoption rates, ePrescribing +This research identified three national health models in Europe at this time – the National Health Service (NHS) model, the social insurance system (SIS) model and the transition country (TC) model, and found a strong correlation between the NHS model and high adoption rates for eHealth -only focus: ePrescribing	Yes
227	From e-Health Policies to the 2.0 Doctor-Patient Relationship	Yes	analysis of professional, organisational and policy documents as well as 30 semi-structured interviews	No	+analyses the implementation of e-health policies, it focuses on the implementation of the e-Health platform +it will wonder about the concrete changes it implies in the doctor-patient relationship specific to the practice of medicine, sociological approaches to profession	No
228	Bioinformatics Mining and Modeling Methods for the Identification of Disease Mechanisms in Neurodegenerative Disorders.	Yes	review, modelling approaches	No	+to identify candidate mechanisms of neurodegenerative diseases based on publicly available data and knowledge. We identify two complementary strategies-data mining techniques using genetic data as a starting point to be further enriched using other data-types, or alternatively to encode prior knowledge about disease mechanisms in a model based framework supporting reasoning and enrichment analysis. -neurodegenerative diseases such as Alzheimer's disease or Parkinson's	Yes

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229	Tailored e-Health services for the dementia care setting: a pilot study of 'eHealthMonitor'.	No	user-participatory design, 42 participants, semi-structured and written interviews	No	+a user-sensitive and interactive web portal for dementia care, Dementia Portal +two user perspectives (caregivers and medical professionals) -area: Erlangen-Nurnberg (Bavaria, Germany)	Yes
230	Essential levels of health information in Europe: an action plan for a coherent and sustainable infrastructure.	Yes	paper, information model, a governance structure and overarching framework	No	+four action lines outlined here will allow developing a EU health information infrastructure that would effectively integrate best practices emerging from EU public health initiatives, including projects and joint actions carried out during the last ten years -an action plan	Uncertain
231	OpenNCP: a novel framework to foster cross-border e-Health services.	Yes	paper, OpenNCP framework	No	+The OpenNCP, available as open source software, has been adopted in 10 Member States, allowing them to securely interconnect their eHealth infrastructures -national and regional e-Health platforms, health information networks	Uncertain