



Report launch - 28th February 2024

# How to navigate the digital shift in healthcare?



Digital Health & Care  
Innovation Centre

An international review and analysis of frameworks  
used to support digital working by frontline healthcare staff

Authors: Rimpiläinen, Sanna; Bosnic, Iris; and Savage, Jamie 2024



# Introducing co-authoring team: Iris Bosnic and Jamie Savage



# Two search phases – focus on frameworks used in practice



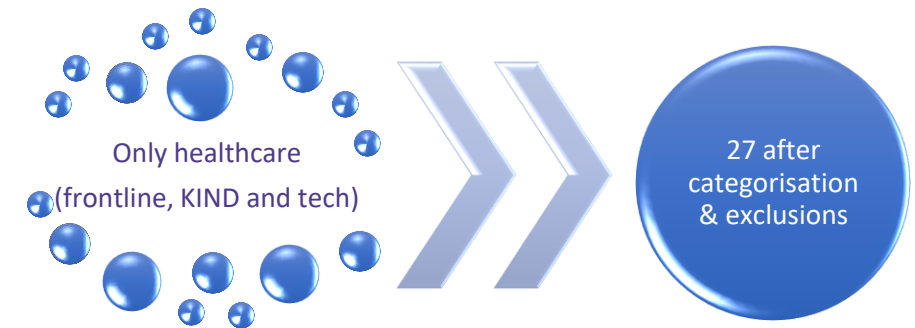
- Search phase 1 (autumn 2022)



116 frameworks  
Exploratory, not  
time-limited

57 frameworks  
(20 workforce, 37  
citizens)

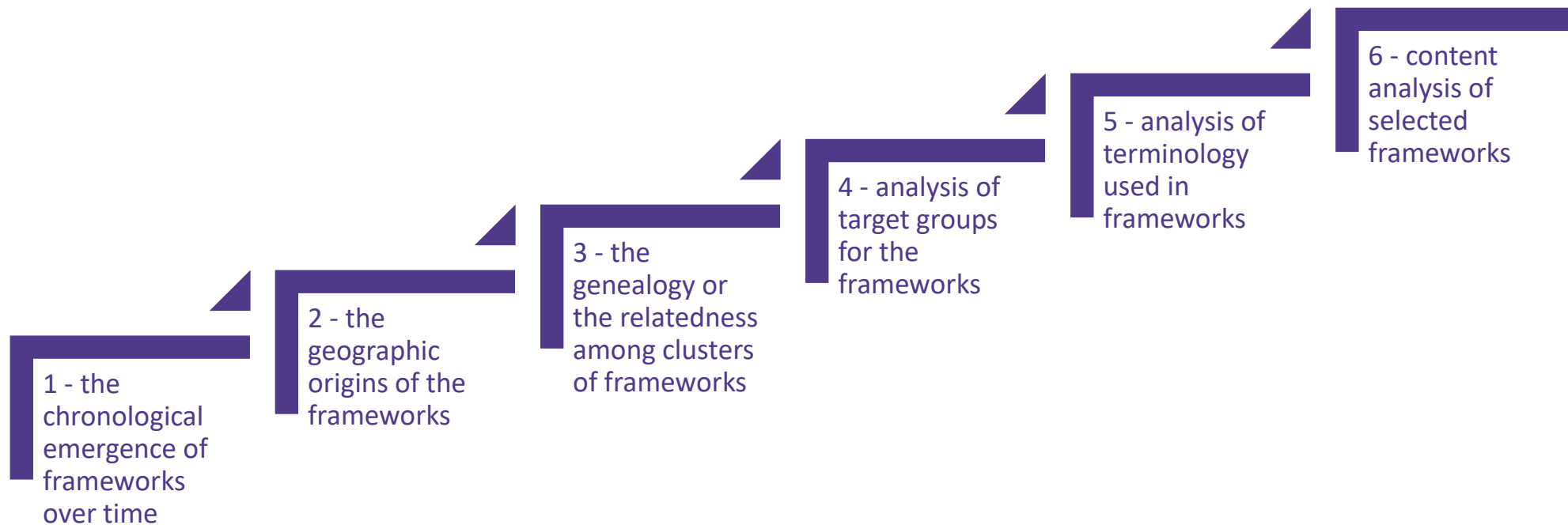
- Search phase 2 (summer 2023)



189 frameworks  
Focussed; time-  
limited to 2018-23

27 frameworks  
for frontline  
healthcare staff

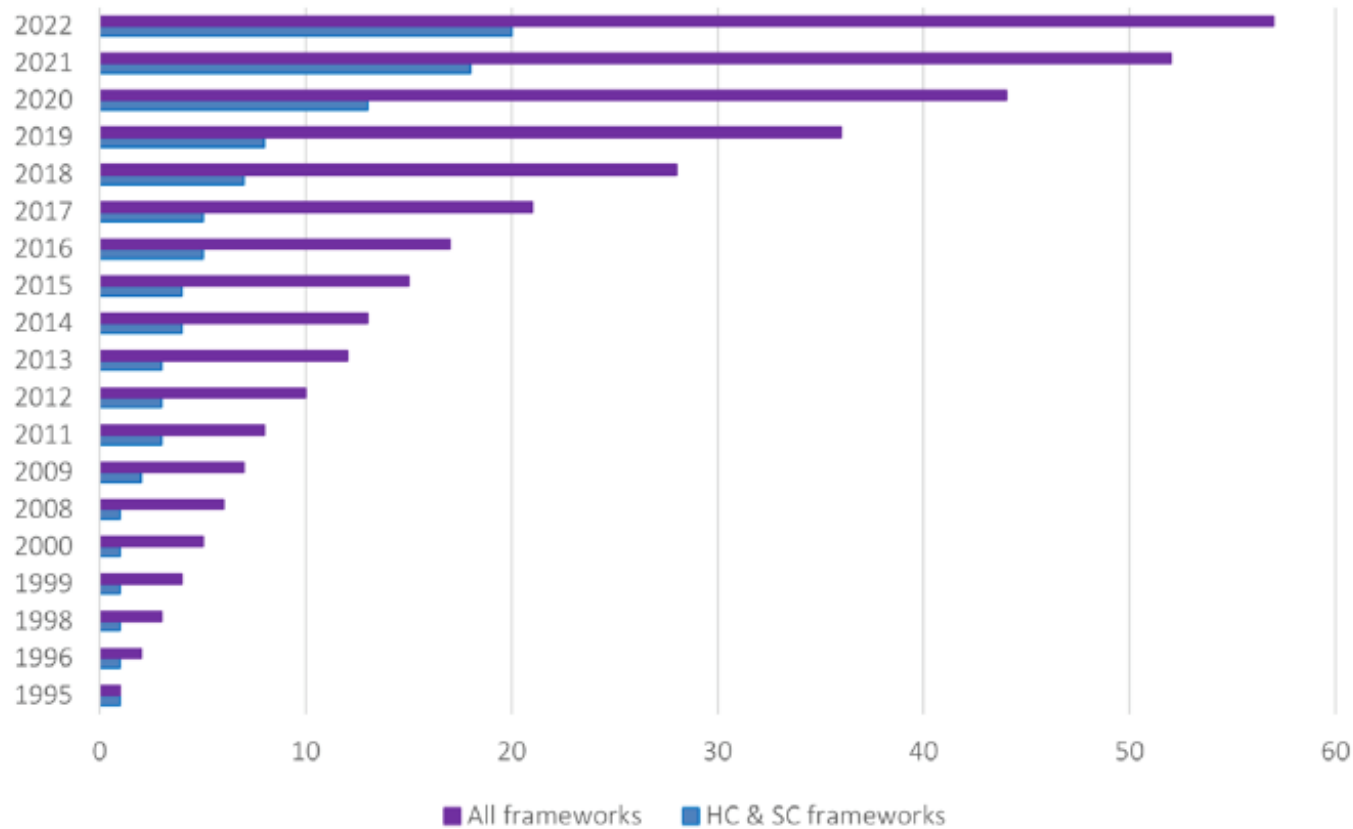
# Six sets of complementary analyses each illustrating a specific point - progressively informed and targeted sensemaking exercise / study



# Analysis 1: Chronological overview - proliferation of frameworks over time



ACCUMULATIVE NUMBER OF PUBLISHED FRAMEWORKS PER YEAR  
(PHASE 1 ANALYSIS)

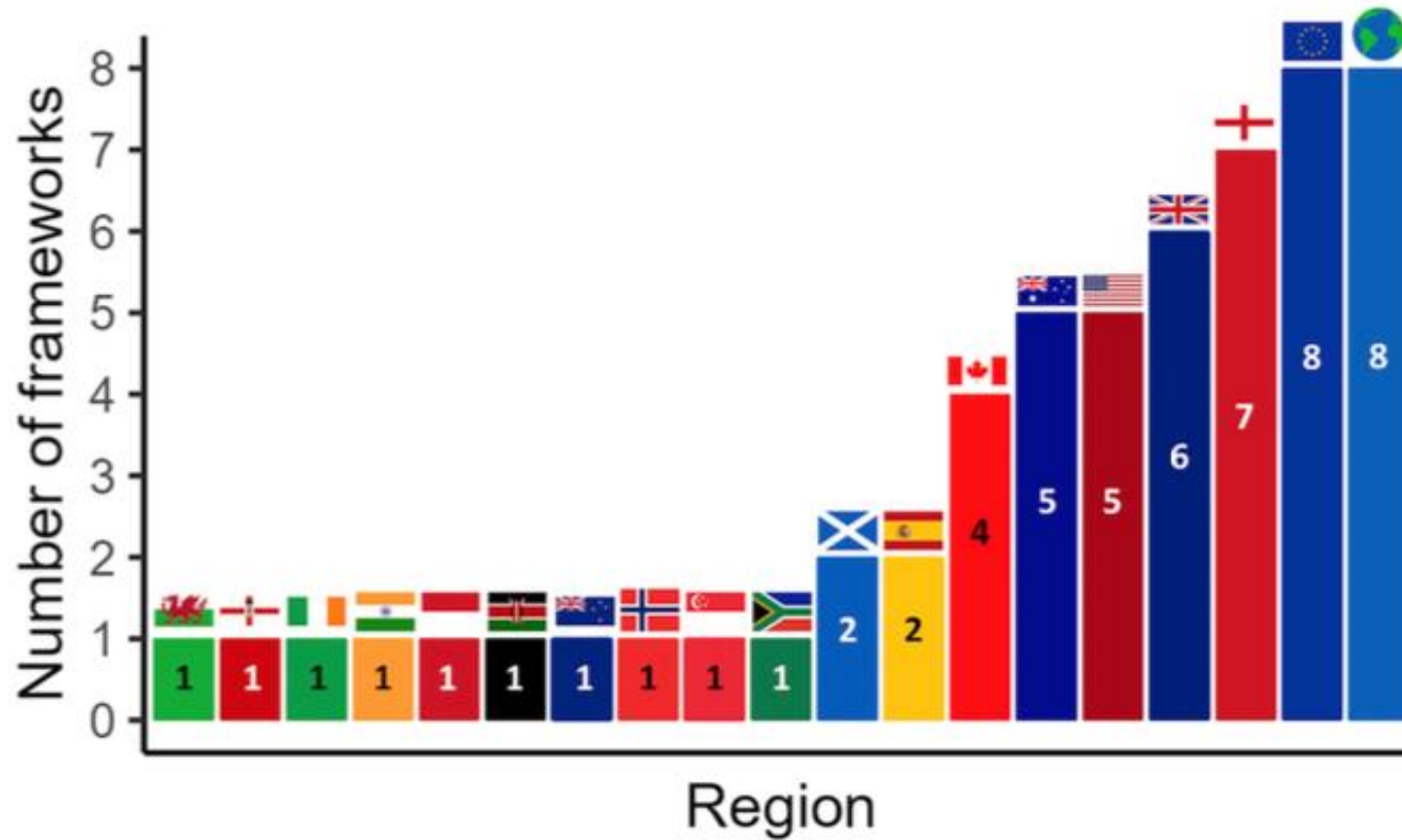


The first digital skills framework was published in 1995 for Nursing informatics in the US.

Numbers of frameworks started increasing rapidly in 2017/18.

Drivers include governmental initiatives, advances in technology and in digital maturity, and the COVID-19 pandemic.

# Analysis 2: Geographic origins and distribution of frameworks



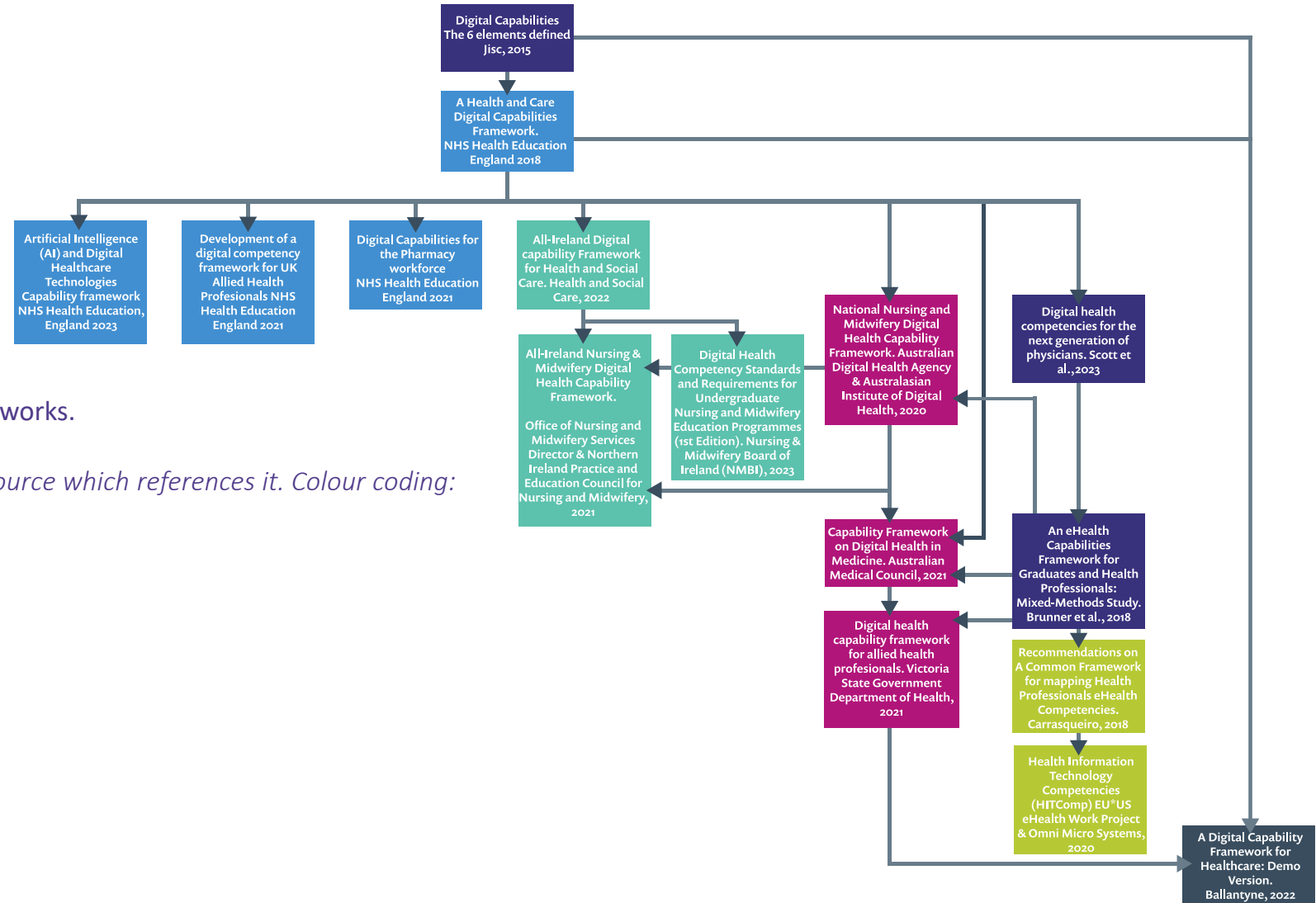
17 out of the 57 frameworks Published between 2011-21 were published in the UK – may reflect the federated nature of UK and the NHS?

8 published by the EU – striving for standardised practice across member states?

NB! Search results skewed towards the English-speaking world.



# Analysis 3: Genealogical map of 16 frameworks



-> guided us to focus on the last five years of frameworks.

Note: arrows point from the original source to the source which references it. Colour coding:

Blue = NHS,

Red = Australia,

Green = Ireland/ Northern Ireland,

Grey = Wales,

Yellow = EU,

Purple = journal article/ other.

# Analysis 4: Classifying frameworks according to target audience



1a. Frontline health and social care staff

1b. Managerial & frontline staff requiring some KIND-capabilities

Digital skills/  
capabilities/  
competencies/  
literacy



2. Specialist knowledge, information, digital & data roles in H&C (KIND-workforce)

Specialist digital, data, analytic and informatics skills



3. Technical professional in H&C

Tech skills; software developed, computing, cyber security, UX design, project management, implementation, etc.



# 189 frameworks classified



27 frameworks for  
frontline staff

(49 before duplicates  
removed)



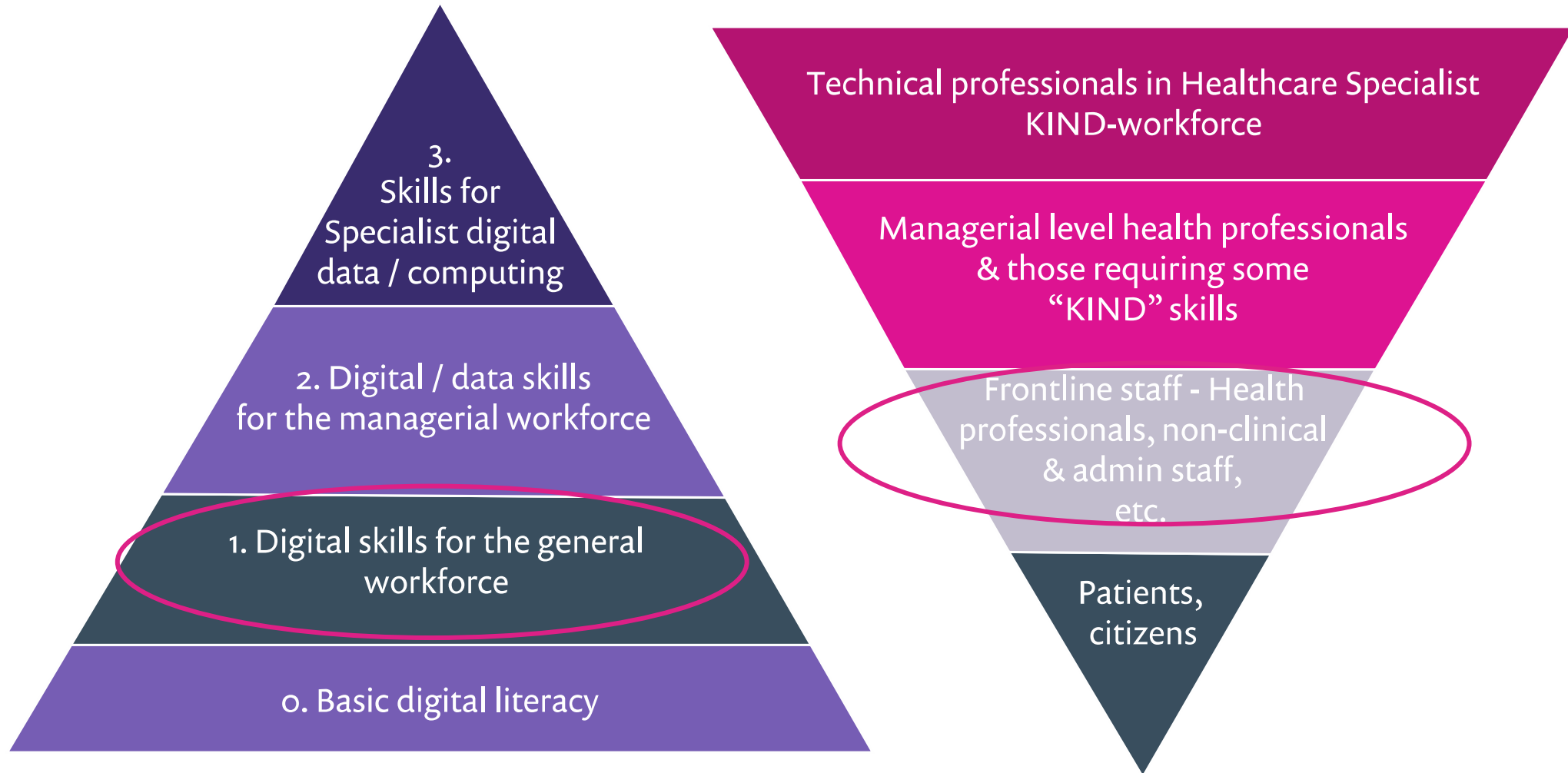
30 frameworks for  
KIND workforce



2 frameworks for tech  
staff working in  
healthcare

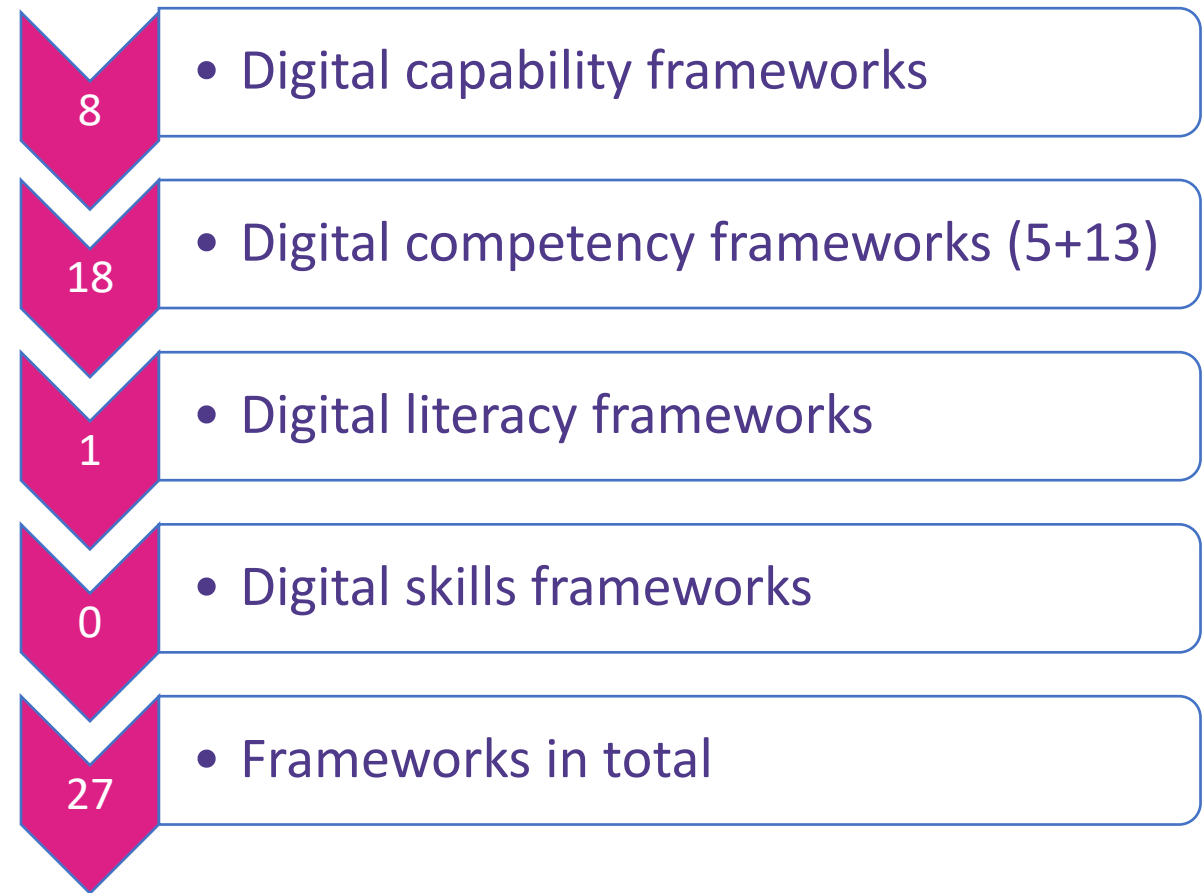
+ 54 academic articles  
+ 54 other skills  
documents

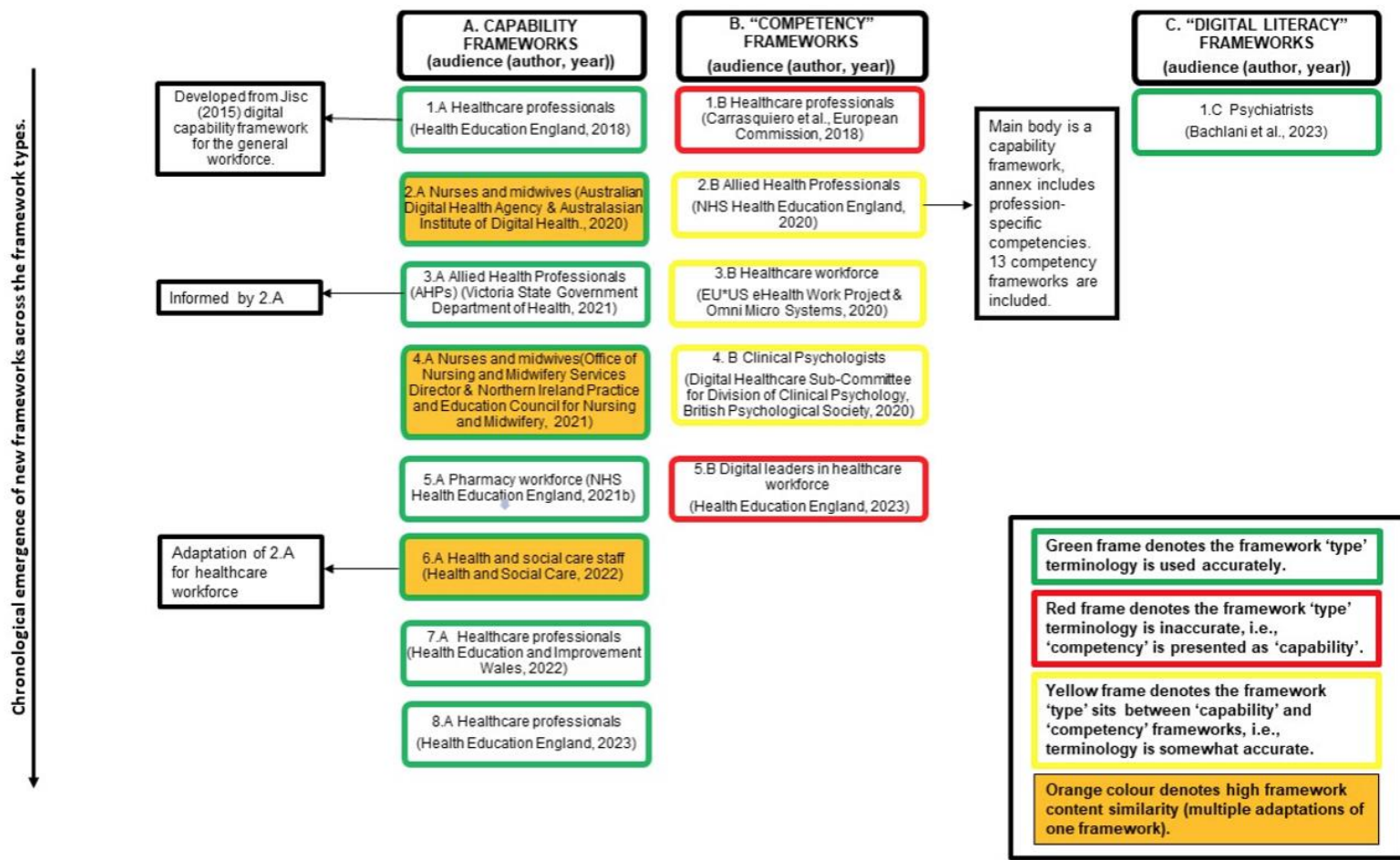
# Digital proficiency required by different professional categories



# Analysis 5: Terminology used in the frameworks

- Considerable disagreement about definitions in digital healthcare
- Terms often used interchangeably and inconsistently between sources





**Figure 14.** Capability, competency, and literacy frameworks from our analysis (27 frameworks in total), presented chronologically, and labelled according to their framework type name accuracy. Additional notes available where appropriate. Please see Appendix 3 for the full list of references.

# Suggested definitions



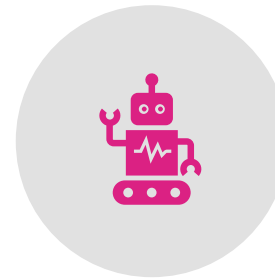
**Digital literacy** is a foundational ability prerequisite to developing digital skills, OR it can be used as an umbrella term to denote the wider ability to do one's work in a digital context.



**Digital skill** is the ability to perform a digital task.



**Digital competency** is the ability to perform a given digital task to an agreed job specific standard.



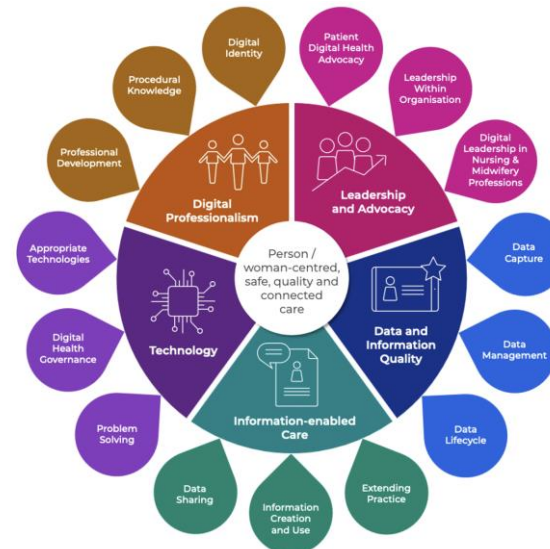
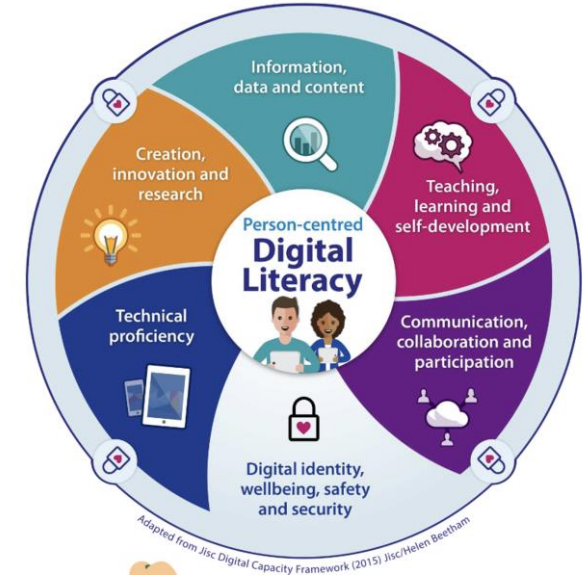
**Digital capability** is the ability to use transferable skills to learn to perform a future, yet to be defined digital task.

# Analysis 6: Content analysis in nine case studies

## 6.1-6.4: Capability frameworks



- **Case study 6.1: The NHS tradition of digital literacy frameworks**
- **Case study 6.2: Australian-Irish capabilities encompass competency**
- **Case study 6.3: Allied Health Professionals - Australian *capability* and UK *competency* frameworks (1+13).**
- **Case Study 6.4: NHS AI and Digital Healthcare Technologies Capability Framework**





## 6.5-6.8: Competency frameworks + 6.9 Literacy framework

- **Case Study 6.5: International Competency Synthesis Projects TIGER and HITComp**
- **Case study 6.6: JASeHN eHealth competency model**
- **Case study 6.7: Digital Competencies for Psychological Professions**
- **Case study 6.8: Digital Leadership skills framework**
- **Case study 6.9: Data and Digital Literacy for Psychiatrists**

Objective	Theme	Individual/ Personal	Clinical Team	Locality Level	Trust/ Health Board Level	System Level
Target population		All Doctors	SAS/ Consultants working with their multidisciplinary professional team colleagues	Medical Lead/ Clinical Director	CCIO/ Digital Clinical Lead and Medical Directors	System Mental Health representatives/ Medical Directors/ CCIOs
Agent of change	EDMH	Lead by example in using new digital technologies to improve patient care.	Advocate and support adoption of digital technologies.	Support innovation and QI projects that embrace new digital technologies.	Support widespread adoption and an open culture of new digital technologies that improve patient care and reduce admin burden.	Connect technologies, share best practices and data across healthcare organisations to streamline patient care and improve outcomes.
Online Assessments	EDMH	Can carry out an online MSE.	Online assessments available throughout the team	Parity in online assessment access across teams to meet local population needs.	Parity in online assessment access across the trust.	Parity in online/ virtual assessment access across healthcare organisations.
		Aware of confidentiality and safeguarding issues.	All MDT able to provide online assessments.			
		Are aware of advantages and disadvantages of carrying out online assessment including appropriateness and digital exclusion.	Provide patient choices around modality of patient consultation.			

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- 1 Use, or adapt for use in the local context, one of the existing frameworks.
- 2 Find a way to assess the digital maturity level of the service and the digital upskilling needs of the staff, which in turn will help with selecting the appropriate framework(s) to use.
- 3 Use framework to help identify emerging skills gaps and shortages to inform training needs.
- 4 Develop new frameworks only when that is relevant (e.g., pending implementation of a newly emerged digital innovation; staff digital literacy needs change significantly; changes in legislation).
- 5 When developing new frameworks, ensure clarity of definitions and adopt an agile development approach to allow flexibility in fast-changing job landscape.
- 6 Implement digital as core part of FE and HE curricula for H&SC to help standardise digital literacy for the future workforce.
- 7 Further research required to review frameworks for social care, KIND and technical staff.



# Thank you for your attention!

- Please, add you questions to the Q & A tab.
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Main report QR code



# Summary report QR code





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