

Enhanced Care for Older People
Learning Session Number 18

Technology Enabled Care Services (TECS) : how this supports
independent living & healthcare

Glenda Cook

Professor of Gerontological Nursing

Northumbria University

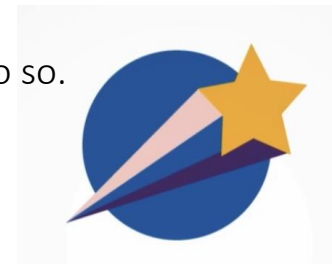
EnCOP

Enhanced Care for Older People

EnCOP Lead: Lynne Shaw Date: Wednesday 24th May 2023

Housekeeping

- Please ensure microphones are muted and during presentation cameras are turned off.
- The event will be recorded and shared.
- The webinar recording and presentation will be circulated and uploaded on to the website following the event.
- If you have any questions during the session then please use the chat facility. We will attempt to address questions, if we can't then we will follow up after the event.
- Please also use the chat facility to inform us of any technical issues as this will be monitored closely throughout by one of the EnCOP team.
- Occasionally you may have difficulty seeing or hearing video clips that are played, this will usually be due to your own device or software settings and not something we can influence during the webinar session. Please be assured all content will be shared following the event so you will have an opportunity to view afterwards.
- If you need to take a break at any time throughout the session please feel free to do so.



Session Aim & Linked Competencies

Aim: To enhance awareness regarding how TECS can enhance health, wellbeing, independence and autonomy for older people and support improved coordination of care

Linked EnCOP Domains:

Domain A: Values, Attitudes and Ethical Practice

Domain B: Evidence Based Care : Supporting learning, leadership and improving care for older people

Domain C1: Partnership working and communication with older people, families and others

Domain C2: Interprofessional and interorganisational working , communication and collaboration

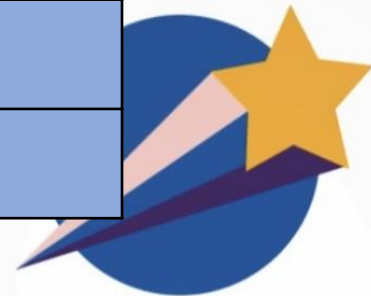
Domain D2: Ageing Well : Assessing , planning, implementing and evaluating care and support with older people

Domain D3: Ageing Well: Promoting and supporting independence, autonomy & community connectivity for older people

Domain D4 : Ageing Well : Promoting and supporting holistic physical health and wellbeing with older people

Domain D5: Ageing Well: Promoting and supporting holistic psychological health and wellbeing with older people

Domain D6 : Ageing Well : Promoting and supporting older people with medicines optimisation

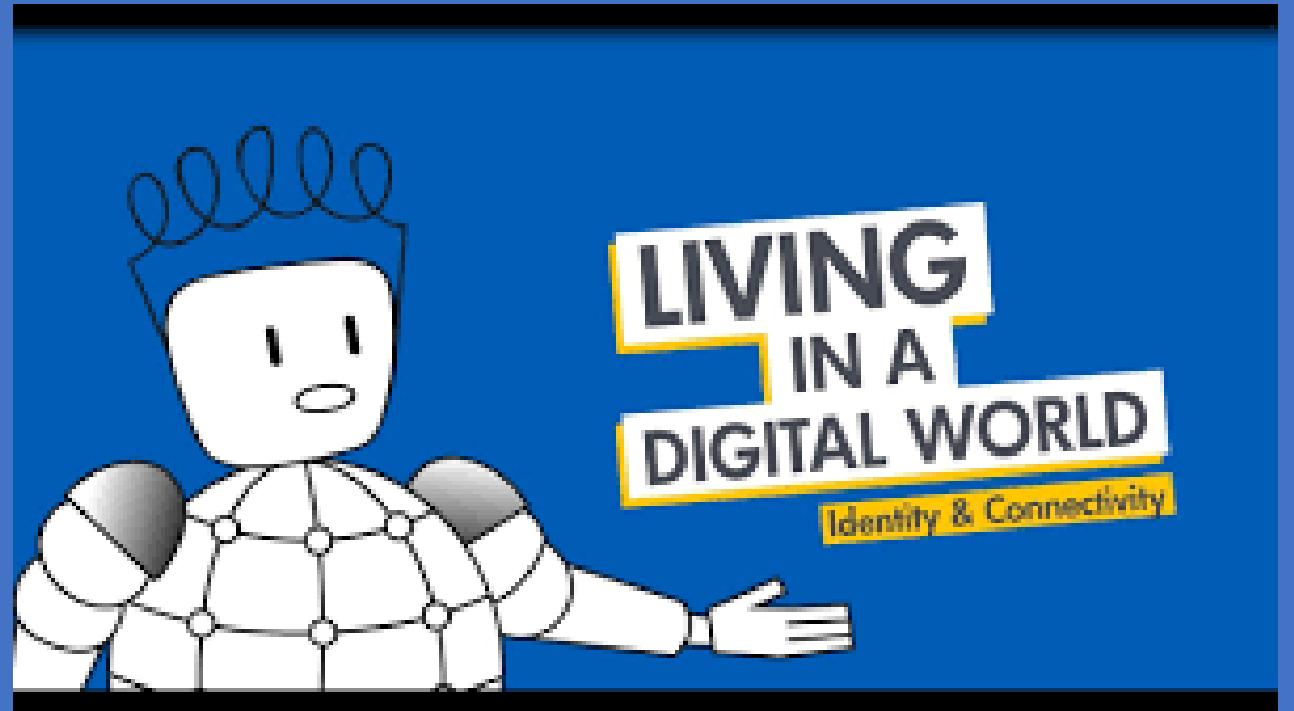




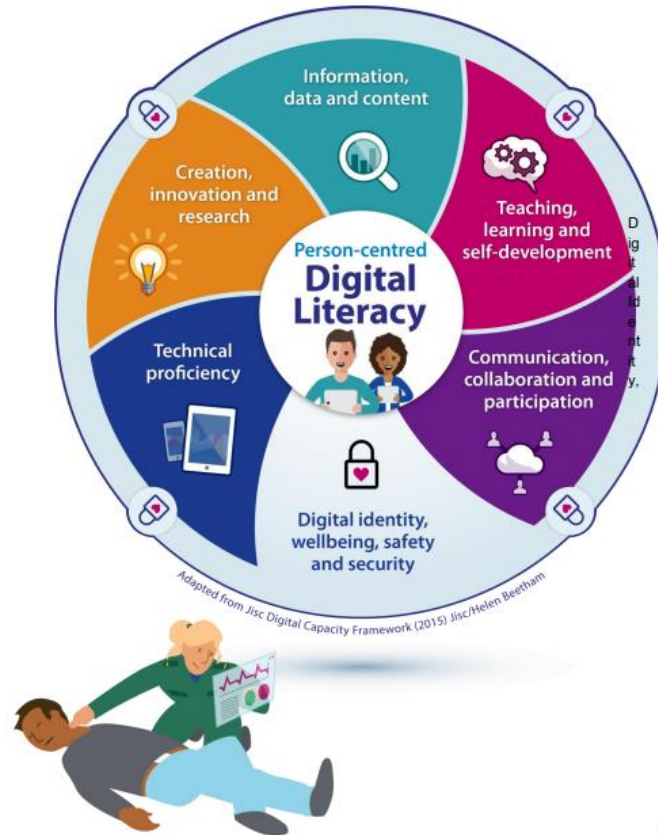
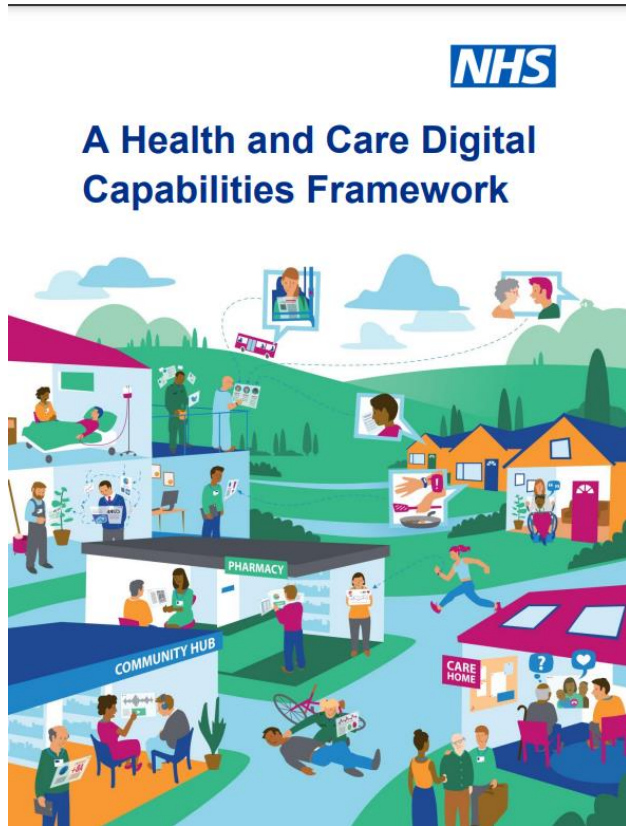
**Northumbria
University**
NEWCASTLE

Technology Enabled
Care Services (TECS):
how this supports
independent living &
healthcare

Glenda Cook
Professor of
Gerontological Nursing



Digital capability of the health and care workforce



Domains of capability

1. Communication, collaboration and participation
2. Teaching, learning and self-development
3. Information, data and content literacies
4. Creation, innovation and research
5. Technical proficiency
6. Digital identity, wellbeing, safety and security.

Existing frameworks and frameworks in development: <https://digital-transformation.hee.nhs.uk/building-a-digital-workforce/digital-literacy/digital-capabilities-frameworks>

A challenge: Self assess your digital capability

4 levels of capability

file:///C:/Users/ihg1/Downloads/A-Health-and-Care-Digital-Capabilities-Framework%20(1).pdf

If you assess your digital capability plan how you intend to enhance your competencies



What are Technology Enabled Care Services?

Technology enabled care services refers to the use of telecare, telehealth, telemedicine, telecoaching, self-care technologies (including apps and wearables), smart home technologies in providing care for patients with long term conditions, disabilities, cognitive and sensory impairment:

- supporting people to manage their own health
- supporting informal and professional carers
- enabling better coordination of care
- personalisation of care
- preventative care.

How TECS can provide support



<https://www.youtube.com/watch?v=bRO3Uar6wLo>

Telecare products, devices and services

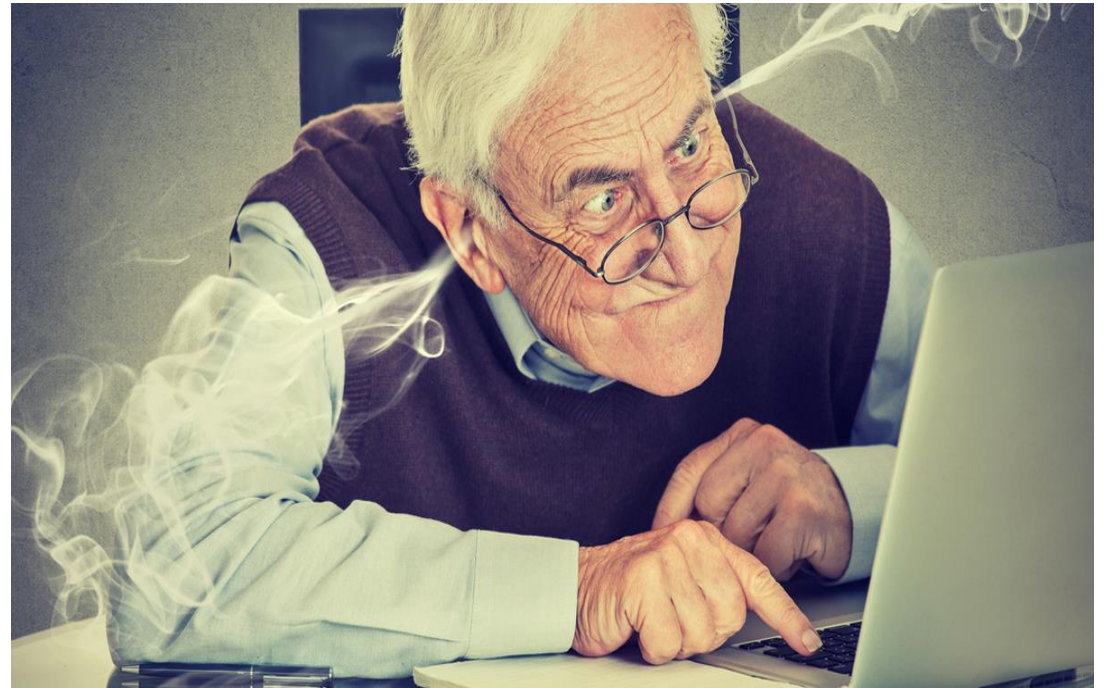


- There are many TEC services and the range of TEC is growing exponentially:
 - Personal telecare alarm pendant (worn round the neck or as a wristband)
 - Alerts and activity monitoring sensors – 'passive telecare' – sensors around the home (e.g. falls detector, door sensor, epilepsy alert)
 - Environment alerts - sensors around the home (e.g. flood alert, CO2 monitor)

Knowing what TEC services exist



Confusion and frustration



How to access

<https://www.tsa-voice.org.uk/find-tec-services/>

The screenshot displays the TSA website interface. The top navigation bar includes 'Find TEC Services', 'ITEC Conference', 'TEC Quality', 'Member Directory', and 'Member Sign In'. The main content area is divided into a grid of service provider cards and a map. The cards list the following providers:

- Care Call:** Telephone 0191 433 2650, Website <https://www.gateshead.gov.uk>, Distance 0.8 Miles, Coverage Local. CERTIFIED MEMBER - QSF Certified.
- Community Care Alarm Service:** Telephone 0191 278 8759, Website <http://www.yhn.org.uk>, Distance 4.1 Miles, Coverage Local. CERTIFIED MEMBER - QSF Certified.
- ABCA Systems Ltd:** Telephone 0333 121 0999, Website <http://www.abcasystems.co.uk>, Distance 6.4 Miles, Coverage Local. CERTIFIED MEMBER - QSF Certified.
- South Tyneside Council:** Telephone 0191 455523, Website <http://www.southtyneside.gov.uk>, Distance 7 Miles, Coverage Local. CERTIFIED MEMBER - QSF Certified.

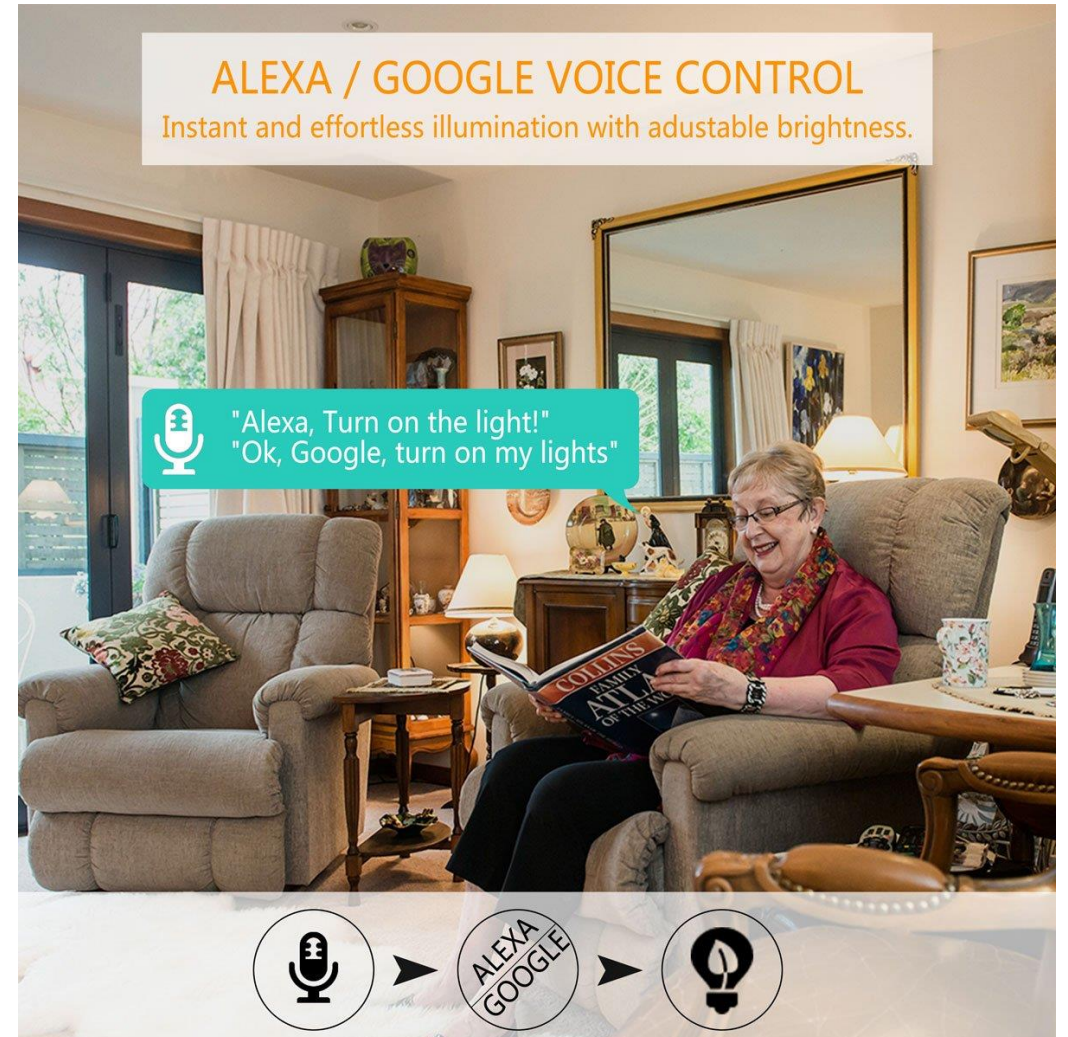
The map on the right shows the geographical distribution of these services across the South Tyneside area, with red location pins marking the service areas.

A role for health and care professionals to advise patients how to find out what TEC services exist in the area they are working in

SMART technology is the new revolution in TECS

Cook, G., Holmquist, L.H., Salai, AM., Courtney, L., Stephanou, N. (2020) Personalised everyday technologies to support independent living. RCOT Housing section.

https://drive.google.com/file/d/1kaxGMhGYAH4iYW2G40o7F_HDa2hgrOJx/view?usp=sharing



Categories of use cases for smart tech

1. Home Automation – automating the house based on sensors (e.g. sound, light, humidity, temperature, and motion) and use of appliance (e.g. fridge, kettle, microwave, and toothbrush) data.

2. Skills Maintenance and Development – supporting individuals to maintain and develop skills such as personal care (e.g. nutritional support, planning to dress appropriately for weather), keeping in touch with others, engaging in interests, and activities (independent studying, shopping), and maintaining environmental hygiene (taking out the bins).

3. Prompts and Reminders – providing alerts to support individuals to complete routine tasks or activities such as making a telephone call, attending an appointment or event.

4. Behaviour and Environment Monitoring - providing supporters, and health and care professionals, access to personal activity and household data.

5. Leisure and social interaction – using multimedia and devices to provide access to leisure and entertainment sites; also enabling keeping in touch with others.

Demonstrations of SMART technology to support:

Prompting and reminding:

Here is a demonstration of the use of sensors/IntraVox and Alexa to provide a reminder to wash hands after going to the toilet:

www.youtube.com/watch?v=L8ij3aJCOdo



```

11 #https://studio.disruptive-technologies.com/projects/bn1hd2sp9d3g008fps
12
13 apiUrlBase="https://api.disruptive-technologies.com/v2"
14 devices_list_url="{}/projects/{}/devices".format(apiUrlBase,projectId)
15 devices_stream_url="{}/projects/{}/devices:stream".format(apiUrlBase,projectId)
16
17 # Get list of Devices in Project via API
18 device_listing = requests.get(devices_list_url, auth=(username,password))
19
20 # Print list of Devices
21 devices = device_listing.json()['devices']
22 print("The Inventory Project contains {} Device(s)".format(len(devices)))
23 for v in devices:
24     print(v['name'])
25 print()
26
27 # Listen to all events from all Devices in Project via API
28 print("Listening for events... (press CTRL-C to abort)")
29 response = requests.get(devices_stream_url, auth=(username,password), headers={'Accept': 'application/json'})
30 client = SSEClient(response)
31 increment=0
32 for event in client.events():
33     pprint.pprint(json.loads(event.data))
34     increment=increment+1
35     print (increment)
36     if increment == 4:
37         #print ('not ok')
38         pipes = dict(stdin=PIPE, stdout = PIPE, stderr=PIPE)
39         livingroom_lights_on=Popen(["mplayer", "/home/pi/Downloads/Wash..."], pipes)
40         livingroom_lights_on.communicate(input=b">")
41         #print ('ana are mere')

```

Streaming events directly to a client - Disruptive Technologies DevTools - Chrome

Disruptive Developers

Prerequisites

To try out this code example you need to have Python 3 installed

Create a new folder for this example open a terminal like console in this folder, run the following 3 lines:

```
python3 -m venv venv
source venv/bin/activate
pip install requests sseclient-py
```

NOTE: sseclient-py: The only similarly named sseclient package without .py suffix will not work

1. Set up a standard Python 3 virtual environment (or venv)
2. Activate the environment and install
3. Install the required packages via the built-in Python package manager

Using the Python window (open as we will use it to run the example in a moment)

Code

Using your favorite editor, create a new file called sensor-stream.py with the following content:

```

1. import requests
2. import json
3. import pprint
4. import sseclient
5.
6. # Fill in your own Service Account and Project
7. username="SERVICE_ACCOUNT_ID" # this is the key
8. password="SERVICE_ACCOUNT_SECRET" # this is the secret
9. projectId="PROJECT_ID"
10.
11. apiUrlBase="https://api.disruptive-technologies.com/v2"
12. devices_list_url="{}/projects/{}/devices".format(apiUrlBase,projectId)
13. devices_stream_url="{}/projects/{}/devices:stream".format(apiUrlBase,projectId)
14.

```

```

Python 3.7.3 (/usr/bin/python3)
>>> %Run sensor-stream.py
Traceback (most recent call last):
  File "/home/pi/Desktop/sensor-stream.py", line 4, in <module>
    import sseclient
ModuleNotFoundError: No module named 'sseclient'
>>>
Python 3.7.3 (/usr/bin/python3)
>>>

```

```

File Edit Table Help
for chunk in self._read():
    File "/home/pi/venv/lib/python3.7/site-packages/sseclient/_sse.py", line 100, in _read
        for chunk in self._event_source:
            File "/home/pi/venv/lib/python3.7/site-packages/requests/models.py", line 744, in generate
                for chunk in self._raw_stream(chunk_size, decode_content=True):
                    File "/home/pi/venv/lib/python3.7/site-packages/requests/models.py", line 569, in _stream
                        for line in self.read_chunked(amt, decode_content=decode_content):
                            File "/home/pi/venv/lib/python3.7/site-packages/requests/models.py", line 740, in read_chunked
                                self._update_chunk_length()
                            File "/home/pi/venv/lib/python3.7/site-packages/requests/models.py", line 569, in _update_chunk_length
                                line = self._fp.fp.readline()
                            File "/usr/lib/python3.7/socket.py", line 584, in readline
                                return self._sock.recv_into()
                            File "/usr/lib/python3.7/socket.py", line 1003, in recv_into
                                return self.read(nbytes, buffer)
                            File "/usr/lib/python3.7/socket.py", line 511, in read
                                return self._sock.recv_into(buffer)
KeyboardInterrupt
/home/pi/venv/lib/python3.7/site-packages/requests/models.py:740: KeyboardInterrupt: python sensor-stream.py

```

Demonstrations of SMART technology to support:

SMART buttons can be linked with video clips to support individuals to **develop or maintain skills:**

<https://www.youtube.com/watch?v=X2MqOtitcBo>







Carers and Professionals experiences of Smart TEC

Alex Kirton - PhD Student – Northumbria University

Background in Social work

Methodology

- Qualitative individual interview sequence with 2 carers of older people with cognitive impairments
- focus group interviews with 3 social workers and 5 occupational therapists who use smart assistive technology as part of a package of care at home
- 9 carers for a PWCI and do not currently use smart technology as part of a package of care
- focus group interviews with 4 social workers and 7 occupational therapists who do not use smart assistive technology as part of a package of care at home

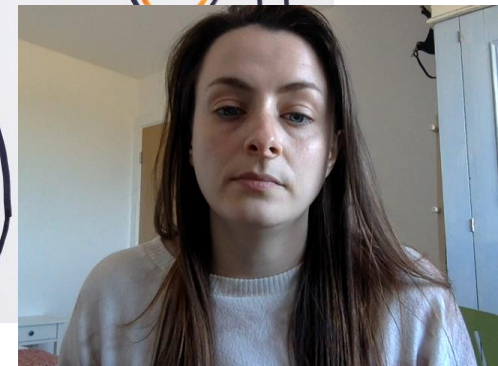
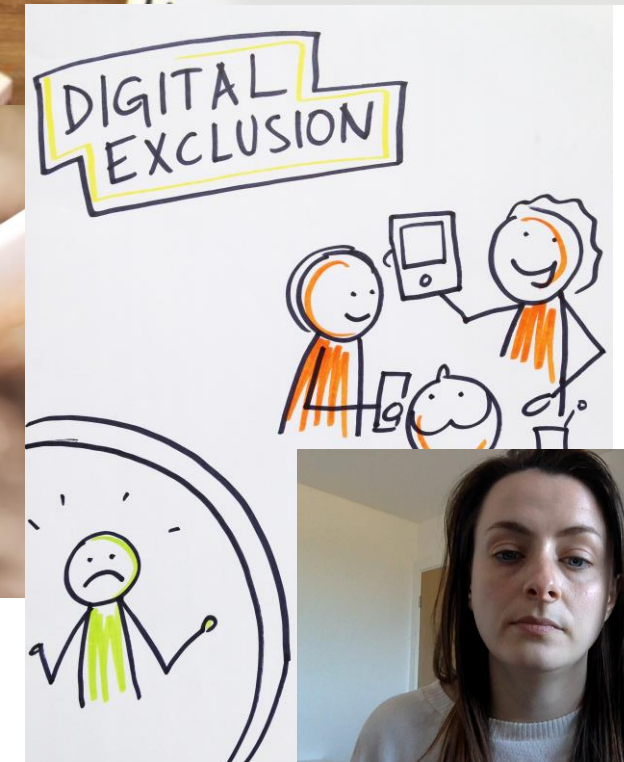
What I found out:

Positives

- Supporting carers to care.
- Alleviating caring burden.
- Supporting ageing in place.
- Data reveals the need.

Negatives

- Digital exclusion
- Digital limitations.
- Increased confusion.
- Familial impact.



TECS & public health

NHS app: <https://www.nhs.uk/nhs-app/>

Available to all 13+

Requires smart phone or tablet for use

Enables access to a range of services

New features and functionality

Is there a digital divide?

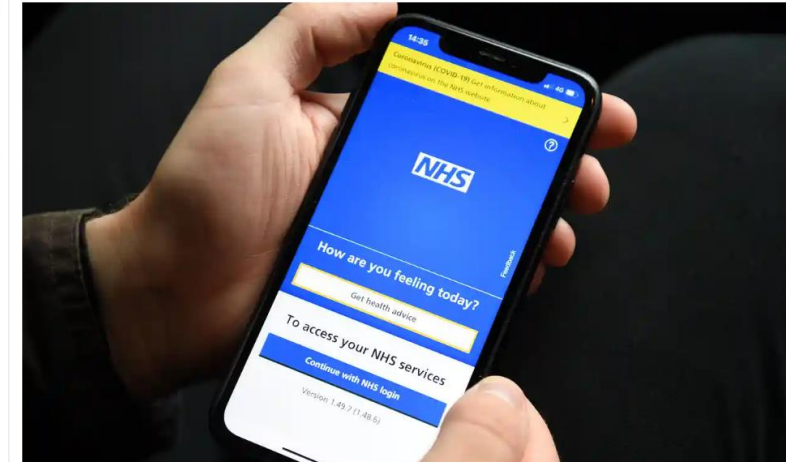
NHS

Patients in England to be asked to use NHS app to book private hospitals

Proposal is part of government's plan to reduce waiting lists, but experts say choice is already available

Denis Campbell
Health policy editor

Mon 22 May 2023 16.22
BST



Under the new plan, patients could see how long they would have to wait for NHS and private hospitals. Photograph: Kirsty O'Connor/PA

Wearable glucose monitors

Charlotte Gordon

Assistant professor

Northumbria University

<https://northumbria.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=396efc60-ae3-461c-9d65-af0800f18bd3>

The screenshot shows a Panopto video player interface. The browser address bar displays the URL: <https://northumbria.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=875ae8e7-445a-4fc9-93db-ac4b010a9384>. The video title is "Wearable glucose monitor".

The video content is a presentation titled "Flash and CGMs". It features a table with columns for "Flash", "CGM", and "Comparison". The table lists various models and their features, such as "Flash Flex", "Flash Flex 2", "Flash Flex 3", "Flash Flex 4", "Flash Flex 5", "Flash Flex 6", "Flash Flex 7", "Flash Flex 8", "Flash Flex 9", "Flash Flex 10", "Flash Flex 11", "Flash Flex 12", "Flash Flex 13", "Flash Flex 14", "Flash Flex 15", "Flash Flex 16", "Flash Flex 17", "Flash Flex 18", "Flash Flex 19", "Flash Flex 20", "Flash Flex 21", "Flash Flex 22", "Flash Flex 23", "Flash Flex 24", "Flash Flex 25", "Flash Flex 26", "Flash Flex 27", "Flash Flex 28", "Flash Flex 29", "Flash Flex 30", "Flash Flex 31", "Flash Flex 32", "Flash Flex 33", "Flash Flex 34", "Flash Flex 35", "Flash Flex 36", "Flash Flex 37", "Flash Flex 38", "Flash Flex 39", "Flash Flex 40", "Flash Flex 41", "Flash Flex 42", "Flash Flex 43", "Flash Flex 44", "Flash Flex 45", "Flash Flex 46", "Flash Flex 47", "Flash Flex 48", "Flash Flex 49", "Flash Flex 50", "Flash Flex 51", "Flash Flex 52", "Flash Flex 53", "Flash Flex 54", "Flash Flex 55", "Flash Flex 56", "Flash Flex 57", "Flash Flex 58", "Flash Flex 59", "Flash Flex 60", "Flash Flex 61", "Flash Flex 62", "Flash Flex 63", "Flash Flex 64", "Flash Flex 65", "Flash Flex 66", "Flash Flex 67", "Flash Flex 68", "Flash Flex 69", "Flash Flex 70", "Flash Flex 71", "Flash Flex 72", "Flash Flex 73", "Flash Flex 74", "Flash Flex 75", "Flash Flex 76", "Flash Flex 77", "Flash Flex 78", "Flash Flex 79", "Flash Flex 80", "Flash Flex 81", "Flash Flex 82", "Flash Flex 83", "Flash Flex 84", "Flash Flex 85", "Flash Flex 86", "Flash Flex 87", "Flash Flex 88", "Flash Flex 89", "Flash Flex 90", "Flash Flex 91", "Flash Flex 92", "Flash Flex 93", "Flash Flex 94", "Flash Flex 95", "Flash Flex 96", "Flash Flex 97", "Flash Flex 98", "Flash Flex 99", "Flash Flex 100".

The video player includes a search bar, a table of contents, a progress bar, and a Windows taskbar at the bottom. The taskbar shows the date as 06/10/2020 and the time as 09:42.

Whilst Covid-19 is ramping up telemedicine – are some patients missing out?

Chang et al. (2021) Rapid Transition to Telehealth and the Digital Divide: Implications for Primary Care Access and Equity in a Post-COVID Era. *The Millbank Quarterly*. 99(2): 340–368.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8209855/>

Majeed, A., Maile, E.J & Coronini-Cronberg, S. (2020) Covid-19 is magnifying the digital divide. *BMJ opinion*

<https://blogs.bmj.com/bmj/2020/09/01/covid-19-is-magnifying-the-digital-divide/>

Is there a digital divide in primary care?

Benefits of virtual consultation in primary care?

Disadvantages of virtual consultation in primary care?

Rethinking TECS in care homes



RITA stands for Reminiscence Interactive Therapy Activities and is an all-in-one touch Screen solution which offers digital reminiscence therapy which is a relatively new tool in the fields of nursing and healthcare; it encompasses the use of user-friendly interactive computers and tablets to blend entertainment with therapy and to assist patients (particularly with memory impairments) in recalling and sharing events

- <https://www.myimprovementnetwork.com/my-name-is-rita>
- <https://www.myimprovementnetwork.com/rita-in-the-press>

<https://www.nhs.uk/NHSEngland/keogh-review/Documents/quick-guides/quick-guide-technology-in-care-homes.pdf>

Summary

- TECS have the potential to transform the way people engage in and control their own healthcare, empowering them to manage it in a way that is right for them
- Though there are benefits arising from use of TECS to patients, carers, health and social care professionals, TECS should augment care not replace human care
- There are challenges and barriers in the implementation and use of technology within care
- It is important that health and care professionals are aware of what TEC services and devices exist in their localities and how to access those services or refer patients and their carers to those services
- TECS need to be considered across all areas of practice and the infrastructure (such as WiFi) should be available to support the use of TECS.

A challenge: Self assess your digital capability and continue to keep abreast of TECS developments



2023 Schedule

June

20-21 HTN Now (mixed health tech topics)

28 HTN Focus: Patient facing tech, apps, portals, remote monitoring

July

17-18 HTN Festival

25 HTN Focus Strategy, transformation and change

August

2 HTN Focus Digital Primary Care

September

6 HTN Focus: EPRs / Adding value to your EPR

19 HTN Now (mixed health tech topics)

27 HTN Focus Digital mental health and social care

Health Tech Network: <https://htn.co.uk/htn-events/>

Digital capability assessment: [file:///C:/Users/ihg1/Downloads/A-Health-and-Care-Digital-Capabilities-Framework%20\(1\).pdf](file:///C:/Users/ihg1/Downloads/A-Health-and-Care-Digital-Capabilities-Framework%20(1).pdf)

NHS Scotland: <https://tec.scot/programme-areas/near-me>

Carers UK: <https://www.carersuk.org/help-and-advice/11-help-advice/4819-technology-care-services>

TEC explainers: <https://www.tsa-voice.org.uk/campaigns/tec-explainer-films-resource-for-social-care-workers/>

TEC stories: <https://www.tsa-voice.org.uk/campaigns/telling-the-tec-story/tec-stories>

Telecare products, devices and services: <https://www.tunstall.co.uk/our-products/product-catalogue/>

Thanks





Ideas for Learning Consolidation & Competency Conclusion

Consolidating Learning:

Reflection on the session & considering application to practice & what this means 'your people'

- Think about this session in relation to your own role
- How much of this was revision?
- What have you learned today ?
- How will this help you in your role ?
- Think about your EnCOP self–assessment; consider which performance indicators this session may relate to and how this can be used as part of your own development / competency achievement.

A: Values, Attitudes and Ethical Practice

B: Evidence Based Care : Supporting learning, leadership and improving care for older people

C1: Partnership working and communication with older people, families and others

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D5: Ageing Well: Promoting and supporting psychological health and wellbeing with older people

D6: Ageing Well : Promoting and supporting older people with medicines optimisation

Feedback about today's session and any future sessions you may like to see included in our webinar series....

All feedback welcomed; You may want to consider the following –

Was it easy to book onto the session?

Did you find the session went well in this online format ?

Was the content of the session relevant to your area of practice / job role?

Did you enjoy the session?

Thinking about future webinar's, which topics linked to older person's care would you be most interested in?

Please put any suggestions in the chat.

Please comment in the chat today or feel free to email us: ghnt.encop@nhs.net





**More information can be found within
the Frailty icare website**

www.frailtyicare.org

Our EnCOP pages are located in the
workforce section

**EnCOP Library of Learning &
Development Resources can be found**

at:

<http://frailtyicare.org.uk/making-it-happen/workforce/enhanced-care-of-older-people-with-complex-needs-encop-competency-framework/encop-learning-resources/learning-resources/>

