



Ymchwil Iechyd  
a Gofal Cymru  
Health and Care  
Research Wales



**Improving care for people who Frequently call 999:  
co-production of guidance through an Observational study  
using Routine linked data and Mixed methods (InFORM)**

Fellowship funded by Health and Care Research Wales

**Dr Ashra Khanom**

Swansea University Medical School

[a.khanom@swansea.ac.uk](mailto:a.khanom@swansea.ac.uk)



# Overview

Background

PPI

Study methods  
& Results

Impact

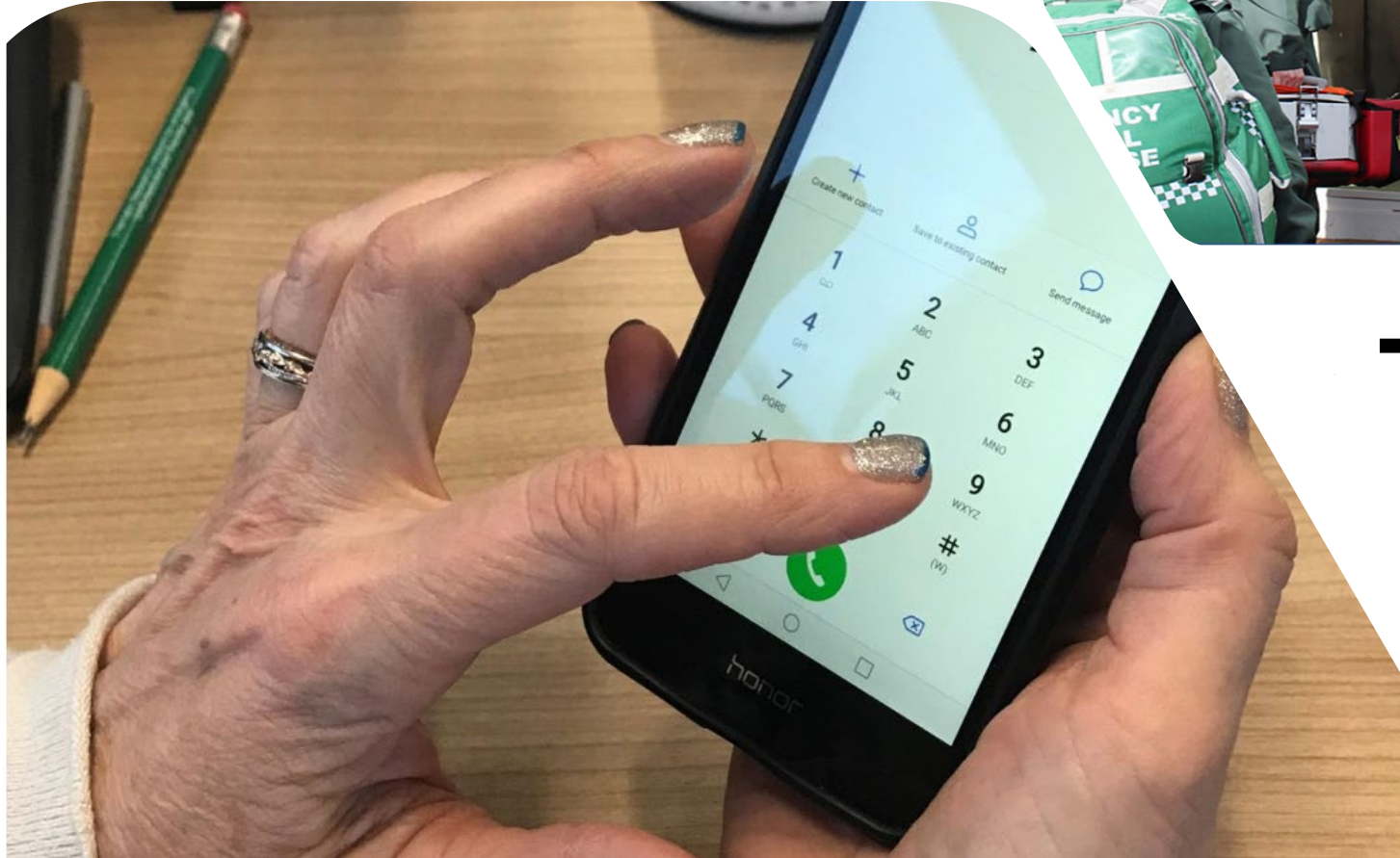
WELSH AMBULANCE  
SERVICES NHS TRUST



Prifysg  
Abertaw  
Swanse  
Universi

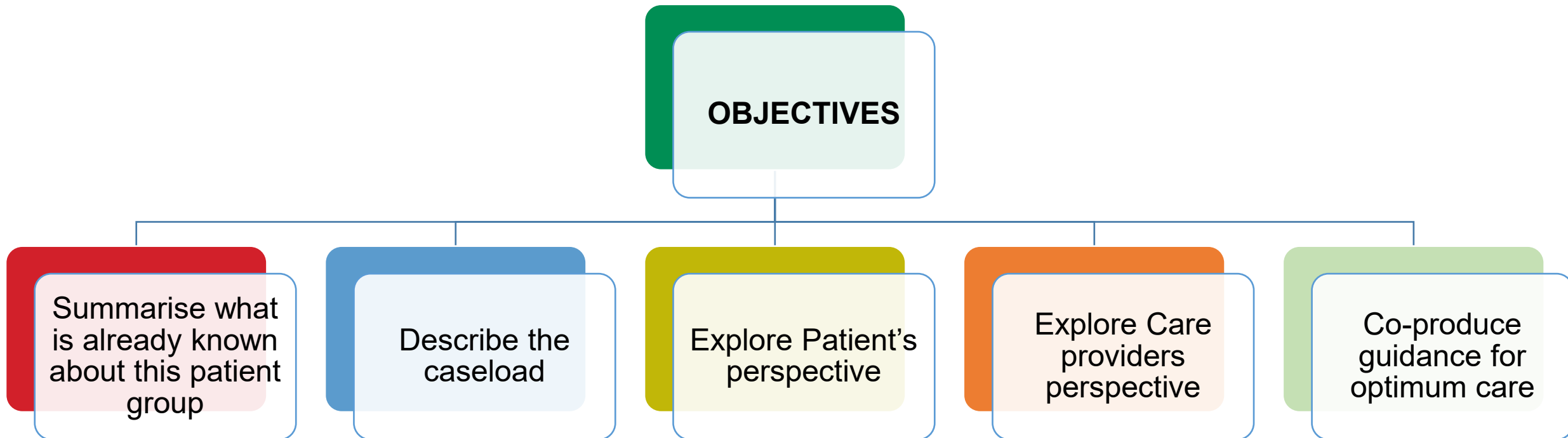


Canolfan PRIME Cymru  
PRIME Centre Wales



# The need for research

**AIM:** To co-produce guidance for care for patients who make high use of the 999 ambulance service





# Patient and Public Involvement

# Mixed methods

Review	of the published evidence
Link	anonymised routine data to medical records
Conduct	bio-photographic interviews with patients and focus groups with care providers
Convene	3 co-production workshops to develop 'Guidance for Care'



# RESULTS: Scoping Review



27 papers met the inclusion  
criteria

2012 – September 2022  
EMS response and models of care



18 papers – epidemiology of callers



9 papers – intervention

# RESULTS: Scoping Review

Definition of people who call frequently ranged from >4 EMS contacts a year to the definition in the UK of 5 calls in 1 month/ 12 calls over 3 months.

Characteristics of callers – 40-65 years of age; female; mental health, neurological disease, loneliness, alcohol/substance misuse, falls, chronic illness.

Intervention – Pilot studies - Multi disciplinary teams provide individualised care.

Overall intervention studies reported a reduction in service use.



# RESULTS: Anonymised Linked Data

## Number of people calling frequently in 2018 by Local Health Board

	n	%
BCUHB	399	31
ABUHB	237	18
SBUHB	214	17
HDUHB	162	13
CVUHB	109	8
CTUHB	105	8
PUHB	38	3
Missing	25	2
<b>Total</b>	<b>1289</b>	<b>100</b>

## Age categories of people who called frequently in 2018

	n	%
18-24	29	2
25-34	91	7
35-44	77	6
45-54	128	10
55-64	128	10
65-74	209	16
75+	622	48
Missing data	5	0
<b>Total</b>	<b>1289</b>	<b>100</b>

## WIMD status of people identified as calling 999 frequently (2018)

	n	%
1 (most deprived)	340	26
2	307	24
3	221	17
4	211	16
5 (least deprived)	164	13
Missing data	46	4
<b>Total</b>	<b>1289</b>	<b>100</b>

## Gender of people who called frequently in 2018

	n	%
Female	697	54
Male	588	46
Missing data	4	0
<b>Total</b>	<b>1289</b>	<b>100</b>

# RESULTS: Anonymised Linked Data

## Top five reasons for calls by Local Health Board in 2018

	Aneurin Bevan	Betsi Cadwaladr	Cardiff & Vale	Cwm Taff	Hywell Dda	Powys	Swansea Bay	*TOTAL	%
<b>Falls</b>	657	1096	147	304	573	108	641	<b>3526</b>	<b>14</b>
<b>Sick person specific diagnosis</b>	593	1139	183	285	361	63	500	<b>3124</b>	<b>12</b>
<b>Breathing problems</b>	276	872	281	245	262	65	475	<b>2476</b>	<b>10</b>
<b>Chest pain</b>	344	771	237	175	266	88	506	<b>2387</b>	<b>10</b>
<b>Psych/Abnormal behaviour/suicide</b>	337	656	221	175	95	24	464	<b>1972</b>	<b>8</b>

## Top 5 ED diagnosis

	n
ED Other	2714
Psychiatric	291
Respiratory	190
Pain	185
Gastrointestinal	186

*\*Total number of calls in 2018 by people who called the ambulance service frequently = 25,082*

# RESULTS: Anonymised Linked Data

## Patient outcomes following calls to 999

	*n	%
<b>Conveyed</b>	7264	29
<b>Patient treated at scene</b>	3395	14
<b>Cancelled Pre-arrival</b>	2750	11
<b>Automatically closed call</b>	2569	10
<b>Patient refused treatment after ambulance arrive</b>	2449	10
<b>Clinical desk dealing</b>	2204	9
<b>Patient deteriorated</b>	1234	5
<b>Referred to GP</b>	915	4
<b>Referred to GP out of hours</b>	523	2
<b>Police dealing</b>	427	2

## Number of calls referred to other services

	*n
<b>GP</b>	915
<b>GP out of hours</b>	523
<b>Falls pathway</b>	310
<b>Other healthcare professional</b>	157
<b>Social care pathway</b>	30
<b>Epilepsy pathway</b>	31
<b>Specialist practitioner</b>	21
<b>Mental Health Pathway</b>	19
<b>Diabetic Pathway</b>	10
<b>Midwife</b>	<5
<b>Cardiac care pathway</b>	<5
<b>Alcohol and Drug pathway</b>	<5

\*Total number of calls made by people who called the ambulance service frequently = 25,082

# RESULTS: Staff interviews

22 staff interviews across two Health Board areas in Wales

Psychiatric liaison, Police, social care, voluntary sector, Frequent attend leads for ED, Frequent caller leads ambulance service, community homeless service, General practitioner, ambulance medical directorate, ED consultant

*'people keep slipping through the cracks because they aren't 'ill enough' and then end up in crisis'*

Better staff training on the needs of frequent callers

Better information sharing and coordinated response by services

Early intervention at community level to prevent people reaching crisis point

# RESULTS: Qualitative interviews – patients

- 8 Interviewed 16 people
- 8 9 Male; 7 Female
- 8 Age range 21-72 years

## Reported health & social issues

- Abuse – physical, sexual, neglect and mental
- Alcohol use
- Bereavement
- Chronic illness (incl. epilepsy, obesity)
- Learning disability
- Loneliness
- Mental Health
- Risk of falls
- Relationship breakdown
- Substance misuse
- Unsuitable housing

*‘Well I do get on with quite a lot of illnesses, and I feel safer and that I’m – because when I go down with illnesses I’m worried it’s something serious, serious illnesses, and that I feel safer ringing out of hours or the ambulance service to take me into hospital to get me checked over.’*

# RESULTS: Qualitative interviews – patients

---

Satisfied with the care provided by the ambulance service

---

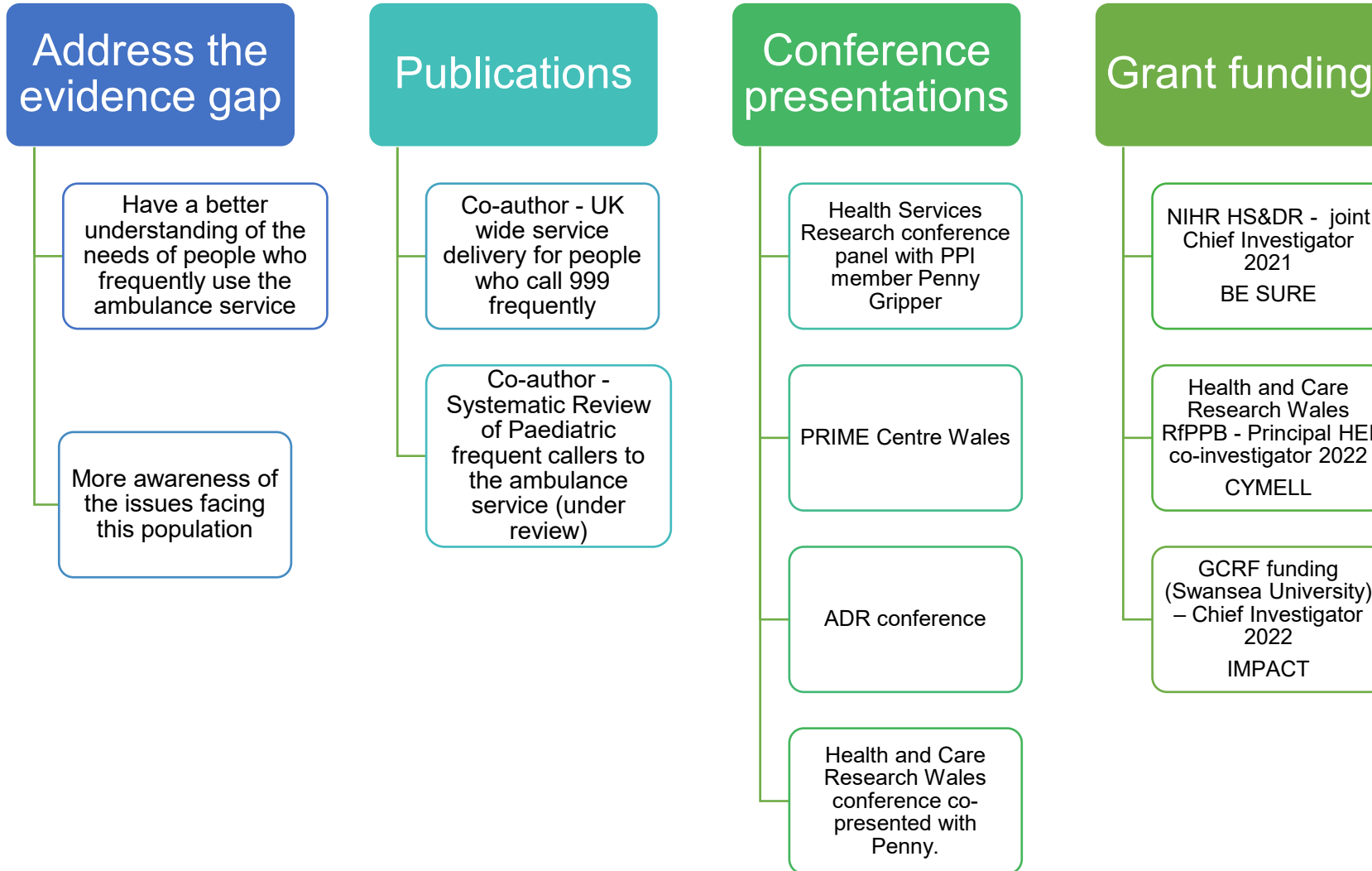
People wanted to change their situation and were looking for help to do this.

---

6/9 month follow up: Change in medication helped, and self management of care e.g. making new friends, re-establishing links with family. One person took matters in hand and found their own treatment outside the NHS.



# Impact





# Acknowledgements

Mentors: Dr Alison Porter and Professor Helen Snooks

Research Advisory Group (RAG) members for their expertise:

Adrian Edwards <sup>1</sup>, Bethan Mair Edwards <sup>2</sup>, Bridie Evans <sup>3</sup>, Penny Gripper <sup>2</sup>, Heather Hughes <sup>4</sup>, Ann John <sup>3</sup>, Robin Petterson <sup>5</sup>, Nigel Rees <sup>5</sup>, Jason Scott <sup>6</sup>, Alan Watkins <sup>3</sup>

<sup>1</sup> Cardiff University, <sup>2</sup> PPI, <sup>3</sup> Swansea University, <sup>4</sup> Independent collaborator, <sup>5</sup> Welsh Ambulance Services Trust, <sup>6</sup> University of Northumbria

I would like to thank Health and Care Research Wales for the grant award and NHS staff and FreCaNN (Frequent Caller National Network) for supporting this study.