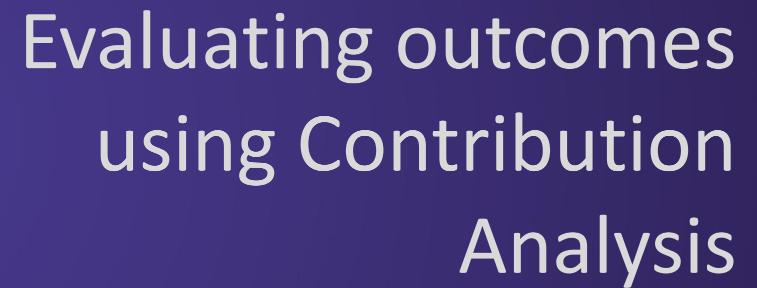


Evaluating outcomes using Contribution Analysis

What it told us about remote monitoring in Scotland

Dr Helen Alexander,

30th January, 2020

Typical evaluation measures

- **How many people have used something**
- **How something was implemented**
- **What went well/less well**
- **What people thought**

We mostly evaluate processes

So what?

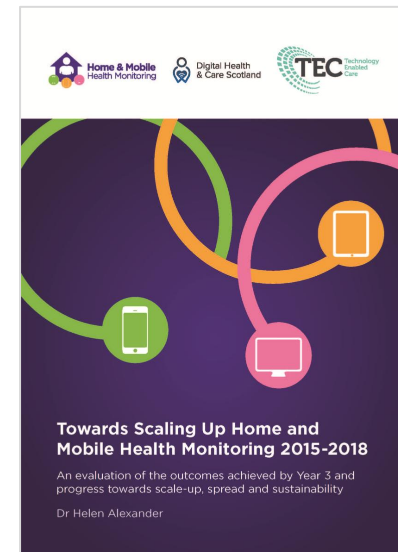
What about …

- **Better health**
- **Improved knowledge**
- **Changed behaviour**
- **Reduced isolation**
- **Improved safety**
- **Reduced inequalities**
- **etc.?**

What Contribution Analysis helped us show

Remote Monitoring contributed to achieving:

1. Higher % of population self-managing
2. Higher % increase in condition control
3. Optimised face to face contacts
4. Improved access to services
5. Resources used effectively and efficiently
6. Hospital admissions avoided
7. Positive patient/service user experience



Plus evidence for short-term outcomes in 2017 interim report

Why Contribution Analysis?

TEC scoping
(2016)
Bob Hudson

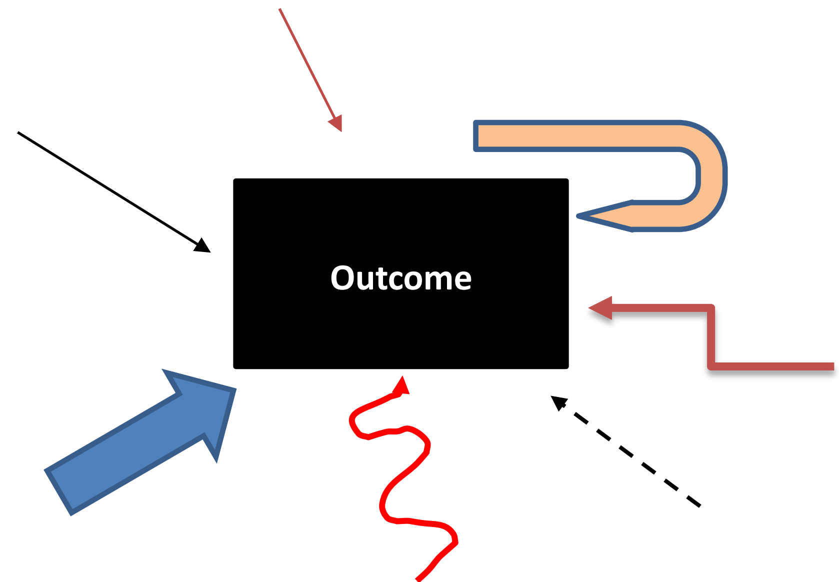
‘TEC … is a complex intervention that will take time to demonstrate effect

TEC data review and evaluation options
(2018)
Just Economics

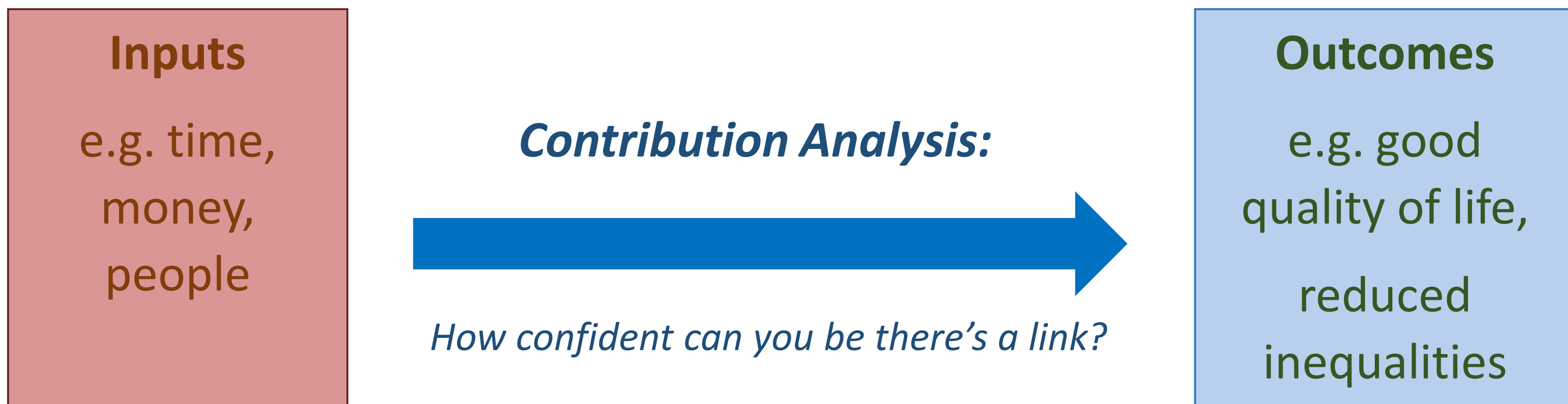
‘Randomised Controlled Trials … are unlikely to be the most appropriate for most [TEC] evaluations’

What is Contribution Analysis?

- It is NOT about attribution i.e. cause and effect
- It acknowledges that life is rarely that simple
- It links inputs to outcomes
- It involves measuring various contributions to outcome achievement



The basic premise of Contribution Analysis



Linking inputs to outcomes is sometimes called your **theory of change** i.e. you can map out how you think your inputs and activities will lead to the outcomes you want to achieve

There are six Contribution Analysis steps

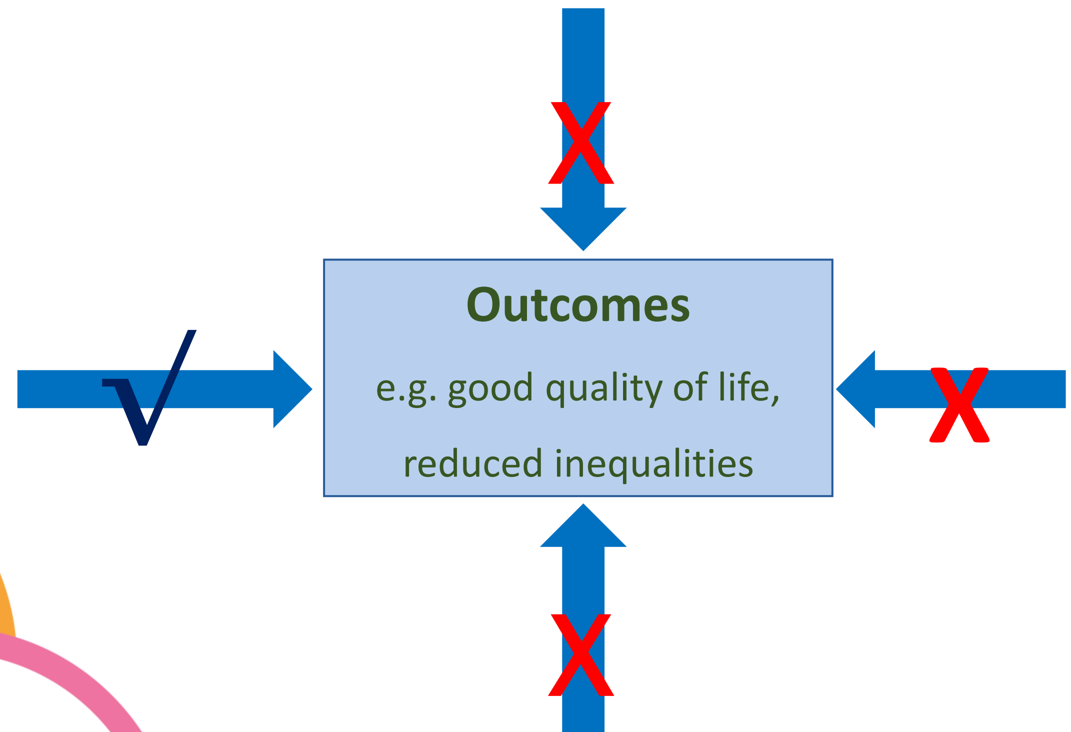
Paraphrased:

1. What are you trying to achieve (your vision)?
2. What is your theory of change (logic model)?
3. What evidence will demonstrate a contribution?
4. What story does this evidence tell?
5. *Do you need more evidence to fill any gaps?*
6. *What does your final contribution story say?*

Mayne, J. (2012) Contribution Analysis: Coming of Age? *Evaluation* 18, 270-280

How confident can you be about the results?

- It is possible that other things may also influence your outcomes (remember this is complicated, not as simple as cause & effect)
- You can gather evidence to support or discount these other influences (similar territory to controlling for different variables in randomised controlled trials)



Making causal claims

Contribution Analysis is about confirming our theory of change (why and how we think an intervention is working). It can also show that we need to change our theory

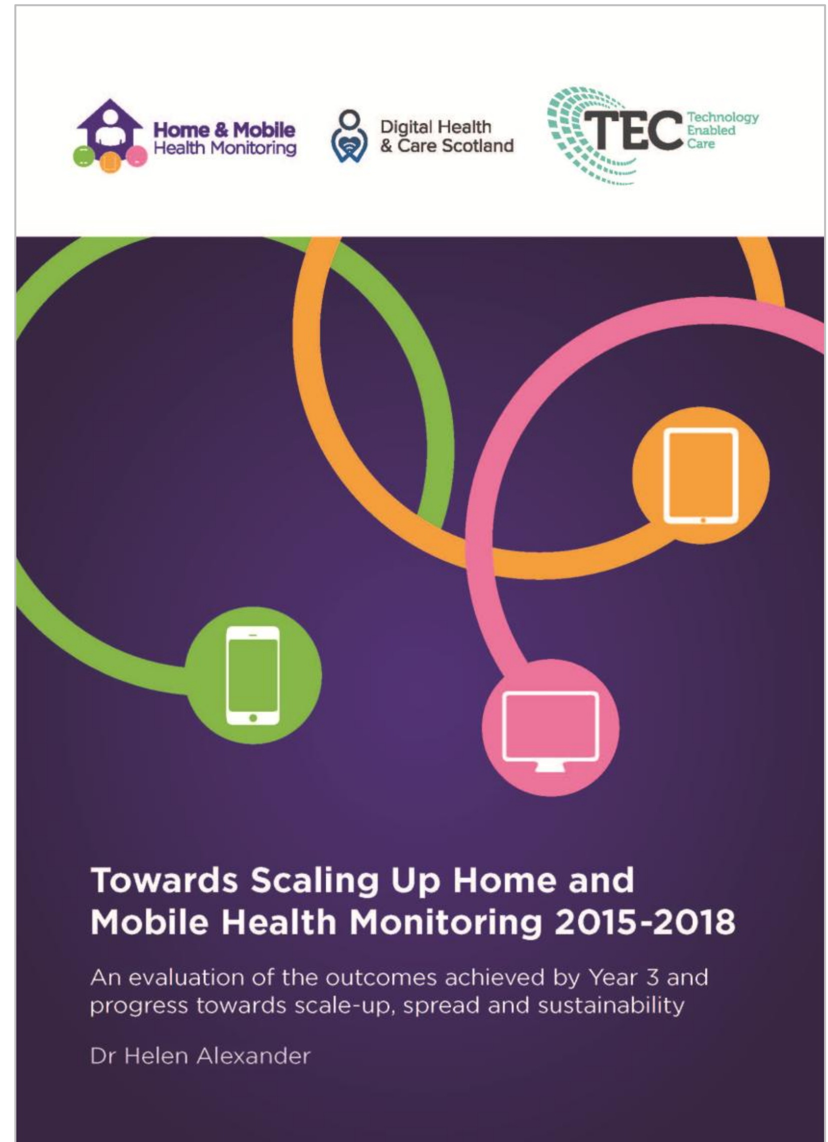
If we can verify a theory of change with evidence and account for other influencing factors, then it is reasonable to conclude that an intervention has made a difference

An example of using Contribution Analysis

The national evaluation of Home & Mobile Health Monitoring in Scotland (2015-18)

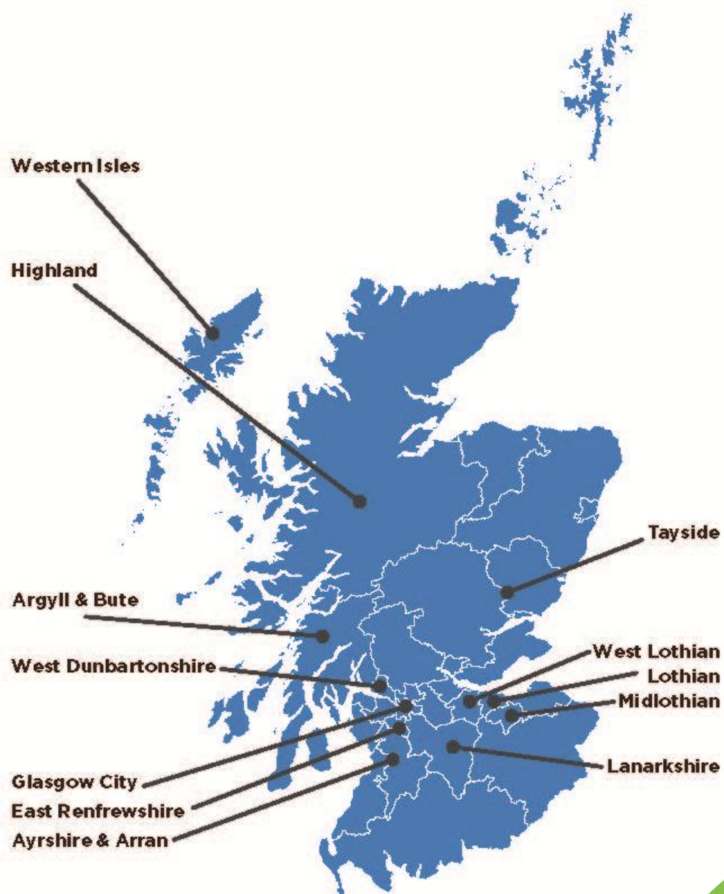
Patients remotely monitoring away from healthcare settings

Also looked at scale-up, spread and sustainability



What was evaluated?

The 12 HMHM partners – NHS Boards, Health & Social Care Partnerships



- Data varied between partners
  - 7x Year 1 and 5x Year 2 starts
  - Short Messaging Service (texts), home pods, web platforms, telephone keypads
  - Single or multiple ‘conditions’ *including hypertension, mental health, health improvement, COPD, heart failure*

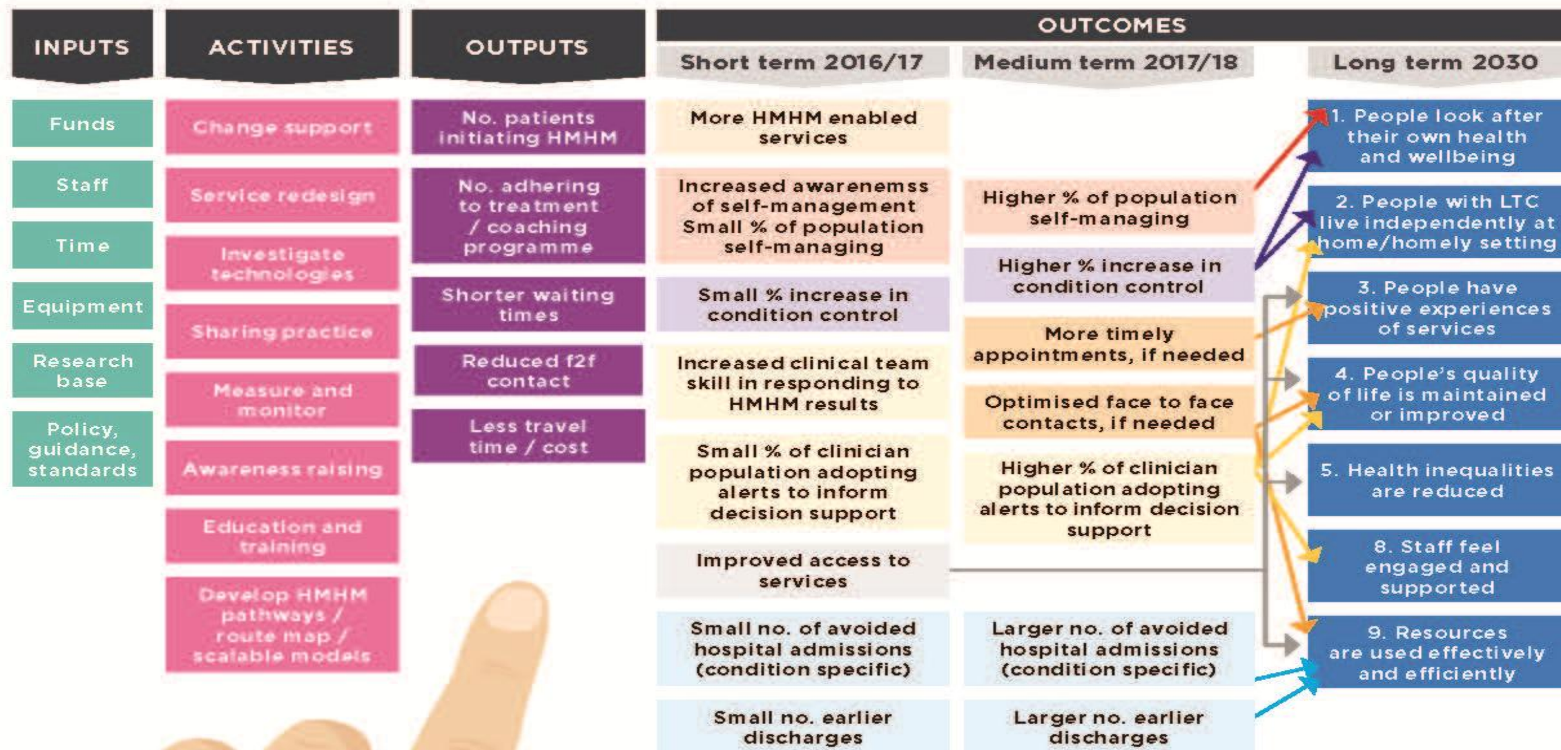
Contribution Analysis steps 1&2

1. The vision:

That the national HMHM Programme would enable many people to achieve good outcomes

2. The theory of change (next slide)

National HMHM logic model



Contribution Analysis step 3

- Most evidence was gathered by the 12 partners
  - Two external evaluations, some help from me
- We agreed what outcomes they were contributing to
- We agreed the measures/what evidence they could gather and any assistance they wanted with this
- They sent their evidence when requested
  - Only robust evidence was used
  - It could be numbers, words, pictures, videos etc.

Contribution Analysis step 4

- An initial contribution story was assembled in 2017
- Results showed:
  - There was an increased awareness of self-management
  - There was a small increase in condition control for some people

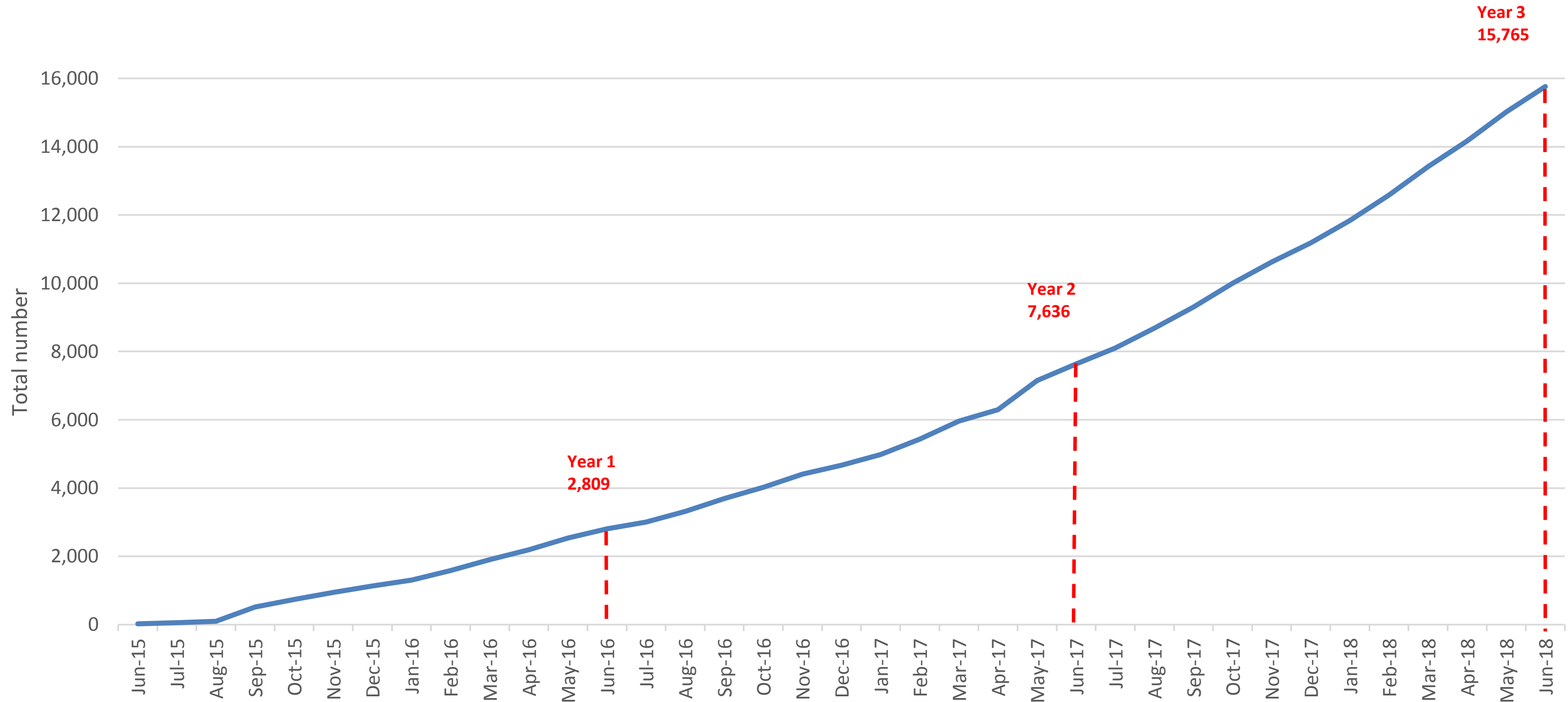
Contribution Analysis step 5

- More evidence was gathered to strengthen the initial story, including alternative explanations for the results
  - Filled gaps identified
- Evidence rated as <u>reasonably robust</u>, limited/weak, no evidence/not relevant
  - It met <u>generally accepted standards</u> relevant to the type of evidence e.g. appropriate sample size (if quantitative), questions were bias-free (if qualitative), the method used to analyse the data was appropriate

Contribution Analysis step 6

- A stronger, more credible contribution story
- The evidence reviewed, along with being able to reject most of the other possible explanations for the results, demonstrated that remote monitoring had made a contribution to:
  - More people self-managing
  - Increased condition control
  - Optimised face to face contacts
  - Improved access to services
  - Good patient experience
  - Resources used efficiently

Context for outcome achievement



Contributions to increased condition control

A control metric or action known to improve control

Partner	'Condition'	Evidence
Ayrshire & Arran	COPD	Average of 12 people per month advised to commence rescue medication, supported by HMHM
Lanark-shire	Mental Health	57% completed first CBT on-line session when supported by HMHM compared to 32% without
Mid-lothian	Oral Nutritional Supplements	25 people who had >15 Health Call sessions gained an average of 1.4kg, compared to 26 people with <15 sessions lost weight (average of 0.8kg)

"I made changes to my diet to help get my BP down"

Acknowledge/discount alternative explanations

Examples include:

Claim	Rival explanation	Acknowledged or discounted
HMHM enables a higher percentage increase in condition control than without HMHM	Participants may have experienced a spontaneous improvement in their condition unrelated to HMHM	**Rejected** – most of the conditions are long-term and deteriorate over time. Also people report motivation arising from HMHM
	Participants may have had a change to their management regime e.g. medication	**Rejected** – Most regime change is in response to HMHM readings, not separate from it
Many other rival explanations are considered in the report		

The evidence gathered supports a credible claim that HMHM use is linked to the results observed i.e. HMHM use contributes to outcome achievement

Resources used effectively and efficiently

Partner	Measure	Evidence
All partners	No. self-managing, no. controlling condition	Many e.gs. of responsibility shifting to service users – more efficient & effective interventions
All partners	No. fewer referrals, appointments etc.	Many e.gs. of avoided appointments, referrals, home visits, telephone calls

There is some evidence of hospital admission avoidance, but not big numbers

People have positive experiences of services

Partner	Measure	Evidence
All partners	Surveys	My life is "transformed" and "I liked that Flo reminds me to do my BP" and "It was fantastic. It really reassured me because of my family history"
All partners	Interviews	"much-needed support" and "like somebody's looking over my shoulder just keeping an eye on things"
All partners	Focus groups	"There's a personal connection" and "the support you get is invaluable" and "I've enjoyed it that much, I've actually got my own set now!

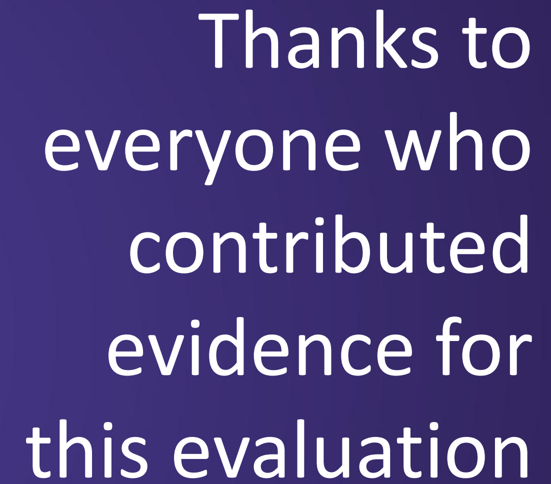
Conclusions

We can credibly claim that HMHM has contributed to:

- More people self-managing their health, improved condition control, optimized face to face contacts, and increased access to services

Scale-up, spread and sustainability

- Not for today!
- But we are continuing with this (NASSS-CAT) and Contribution Analysis for Scale-Up BP
- Also published economic case studies



Thanks to everyone who contributed evidence for this evaluation

Full report at:

https://tec.scot/wp-content/uploads/2019/08/TEC-Programme-National-HMHM-Evaluation-Full-Report-November-2018.pdf