

Reducing urinary catheter associated infections in care homes



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- ❖ **How do we define Catheter-associated UTI**
- ❖ **The draft NICE guidance sections of relevance to CAUTI**
- ❖ **Our work exploring variation in catheterisation rates**
- ❖ **Suggest a behavioural approach to implementing the NICE guidance**

Long term Urinary Catheterisation, what are the risks?



One year prospective study of 1,540 patients in stratified random sample of nursing homes

- **10.5% catheterised at entry, 10% more during year**
- **Stepwise increase in risks with duration of catheter**

Those catheterised for > 75% of year

–3x more likely to receive antibiotics



–3x more likely to be hospitalised



–3x more likely to die

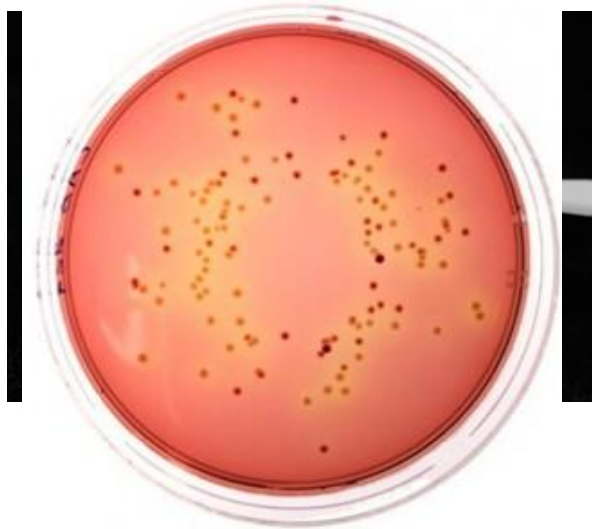


Why do catheterised patients have greater morbidity and mortality?

- 3-6% of catheterised acquire bacteriuria each day
- What do we mean by this?
- Significant bacteriuria $\geq 10^5$ CFU/ml on culture
- 100,000 bacteria in one ml urine



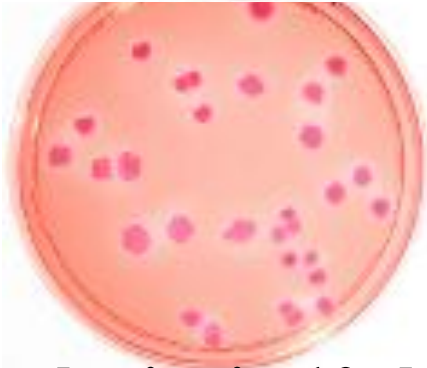
10 μ l loop or drop



100 colonies in 10 μ l

1000 colonies in 100 μ l

10,000 colonies in 1,000 μ l = 10⁴ CFU / ml



29 colonies in 10 μ l

290 colonies in 100 μ l

2,900 colonies in 1,000 μ l

= 10³⁻⁴ CFU / ml



1,000 colonies in 10 μ l

10,000 colonies in 100 μ l

100,000 colonies in 1,000 μ l

= 10⁵ CFU / ml



Mixed bacteriuria is common



What about cloudy urine?

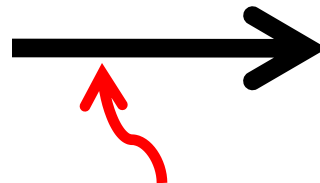
Immune system does not differentiate between asymptomatic carriage and infection



Can dipsticks help us diagnose UTI?



Urinary Nitrates



Nitrites

**Bacterial nitrate
reductase**

You must rely on symptoms

- ❖ Do not dipstick catheter urines in asymptomatic
- ❖ Do not culture urines in asymptomatic

Expert opinion:

- ❖ Fever ≥ 37.9 , or 1.5C above baseline X2 for 12 hours
- ❖ Loin tenderness
- ❖ Rigors
- ❖ New onset delirium,

Draft for consultation

Infection: prevention and control of healthcare-associated infections in primary and community care

(partial update of NICE clinical guideline 2)

Clinical Guideline

Methods, evidence and recommendations

Draft for Consultation

Commissioned by the National Institute for Health and Clinical Excellence

2006 Recommendations unchanged:

- Education
- Assessing need
- Drainage options
- Insertion & maintenance

Recommendations changed:

- Catheter type
- Bladder instillations and washouts
- Antibiotics at catheter change



Do silver or antibacterial coated catheters reduce infection or blockage?



Hydrophilic coated vs. silicone catheters for long term indwelling catheterisation - Clinical summary of findings

Outcome	Hydrophilic	Silicone	RR	Absolute effect	Quality
Mean days catheter in situ	36	33	-	MD 33 higher (15 – 50 higher)	MOD
Encrustations leading to catheter change	11/36 ,30.6%	9/33,27.3%	1.12	33 more /1000 (128 fewer to 371 more)	LOW
Catheter related adverse events	1/36 (2.8%)	7/33 (21.2%)	0.13 (0.02 to 1.01)	185 fewer /1000 (208 fewer to 2 more)	LOW

There was insufficient evidence to recommend one type of catheter over another

Exclude other causes of infection



- ❖ **One third with fever will have UTI**
- ❖ **Exclude other causes**
- ❖ **Check need for catheterisation**
- ❖ **Check catheter isn't blocked**
- ❖ **If in for over 7 days remove or change before starting antibiotics**
- ❖ **89% negative urines at 3 days versus 30% if not changed**

Do bladder instillations or washouts reduce symptomatic UTI s?

- **Four studies of poor quality**
- **NO evidence to show that saline, solution G or R, acetic acid when compared to no washout reduce**
 - Catheter encrustations
 - Symptomatic UTIs
 - Mean time to first catheter change
- **Develop a patient care plan**
- **Review frequency of catheter change**
- **Increase fluid intake**

Use of antibiotics when changing long-term urinary catheters –single trial



Outcome	Antibiotic	Placebo	Relative risk	Absolute effect	Quality
Antibiotic resistance	0/36 (0%)	0/34 (0%)	Not estimable	0 fewer per 1000	Very low
Mortality	1/36 (2.8%)	2/34 (5.9%)	0.47 (0.04 - 4.97)	31 fewer/ 1000 (56 fewer -234 more)	Very low
Bacteraemia	0/36 (0%)	0/34 (0%)	Not estimable	0 fewer per 1000	Very low

Do not offer antibiotic prophylaxis routinely

Consider antibiotic prophylaxis for patients who:

- i. have a history of symptomatic UTI after catheter change**
- ii. experience trauma during catheterisation.**

Urinary catheterisation rate in care homes varies:

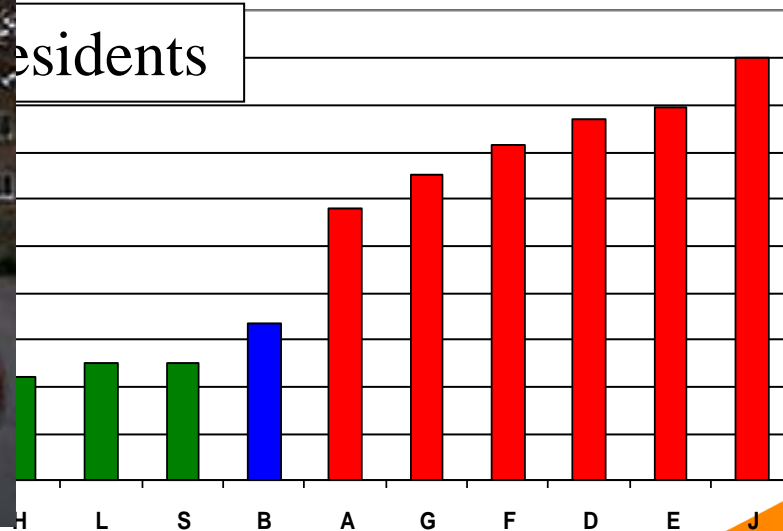


2003: 4,900 residents 9%, range 0- 43.5%



homes 0-18%

Residents



Opportunity to reduce morbidity and mortality

Urinary catheterisation - Case mix in care homes

**Manager and staff questionnaire in 37 care homes
in 3 areas of England (1500 residents)**

- **To determine whether care home case mix is responsible for variation in catheterisation rates**
- **To identify if staffing factors are responsible for a home's catheterisation rate**

Urinary catheterisation – case mix



- **Case mix influence**

- Chronic urinary incontinence (56%)
- severe physical disability (49%)
- moderate or severe dementia (31%)
- pressure ulcers (4%)
- urinary retention (2%)
- terminal illness (1%)
- <28 days post op (1%)

- **Staff**

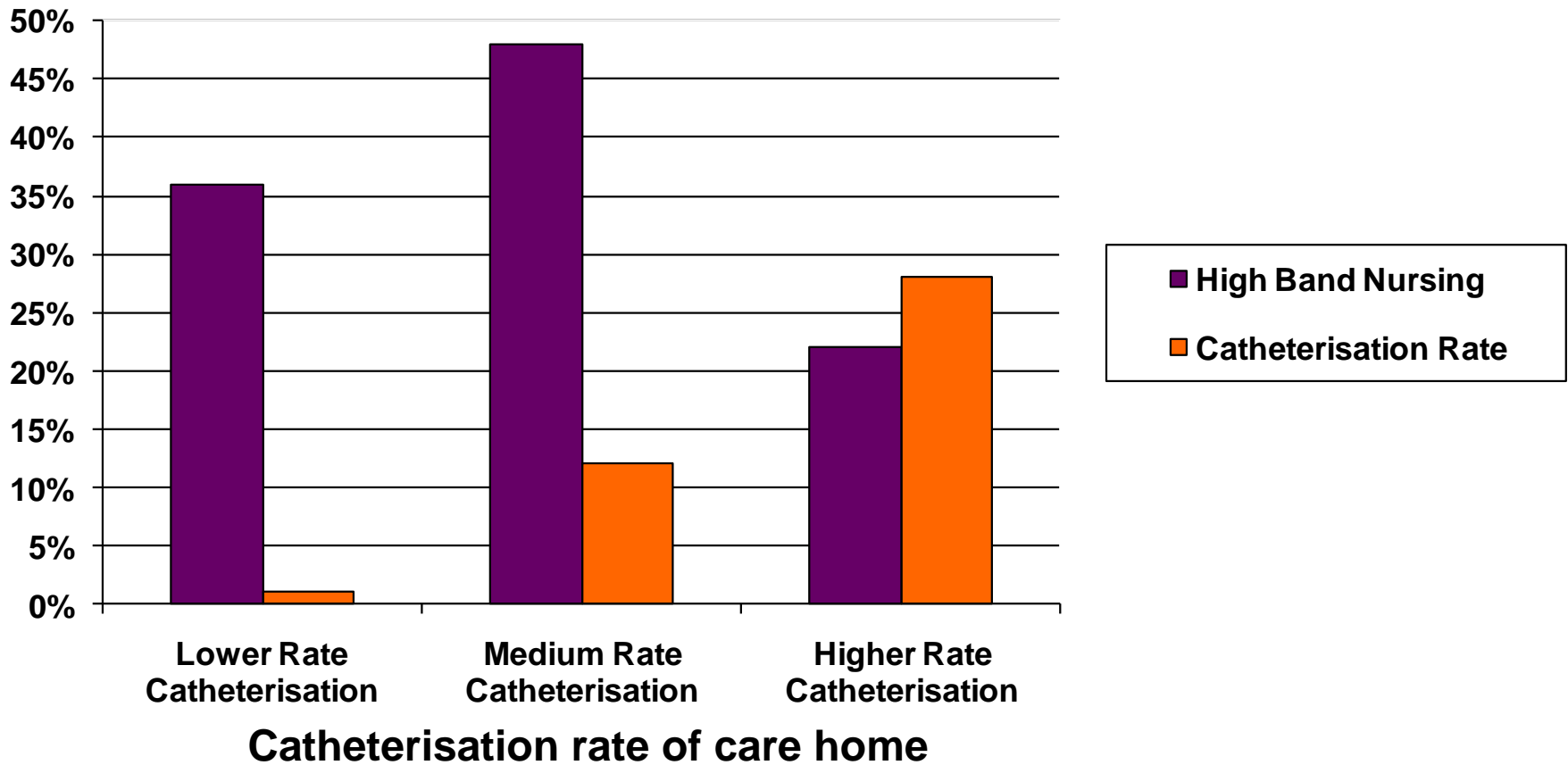
- seek advice and use other toileting options

**Not
responsible
for different
catheter
rates**

Were care bands a factor?



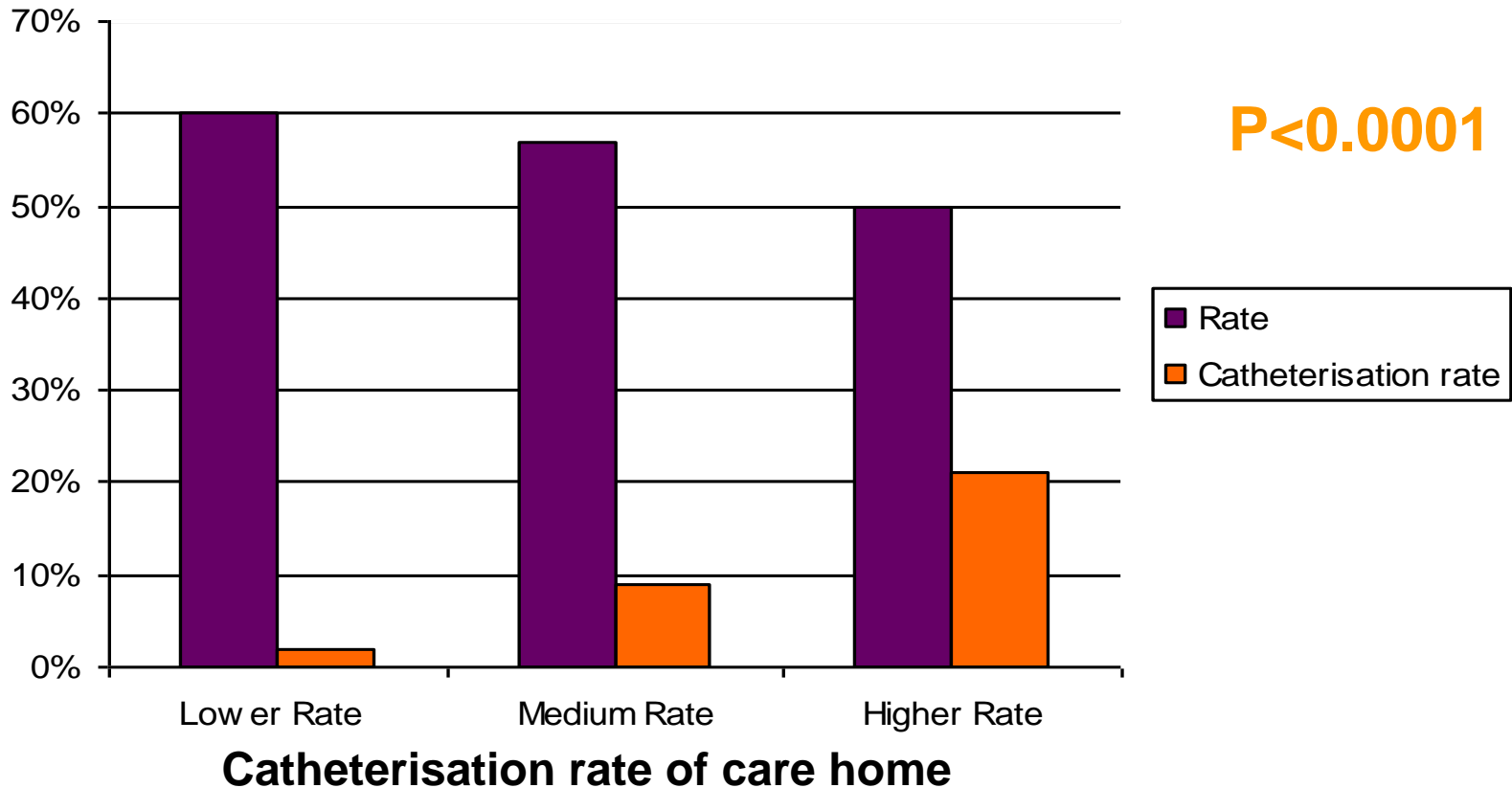
- Proportion of residents in high band nursing care



Chronic Urinary Incontinence



Urinary incontinence managed with regular use of continence aids or urinary catheter



Compliance with guidance



- **Most non-qualified staff involved in all catheter care
BUT only 40% had formal training**
- **Compliance with standards of daily catheter care
was generally greater than 90%**
- **Some standards need greater reinforcement**
 - Reinforce hand-washing**
 - How to take urine specimens**
 - Monitor use of maintenance solutions**



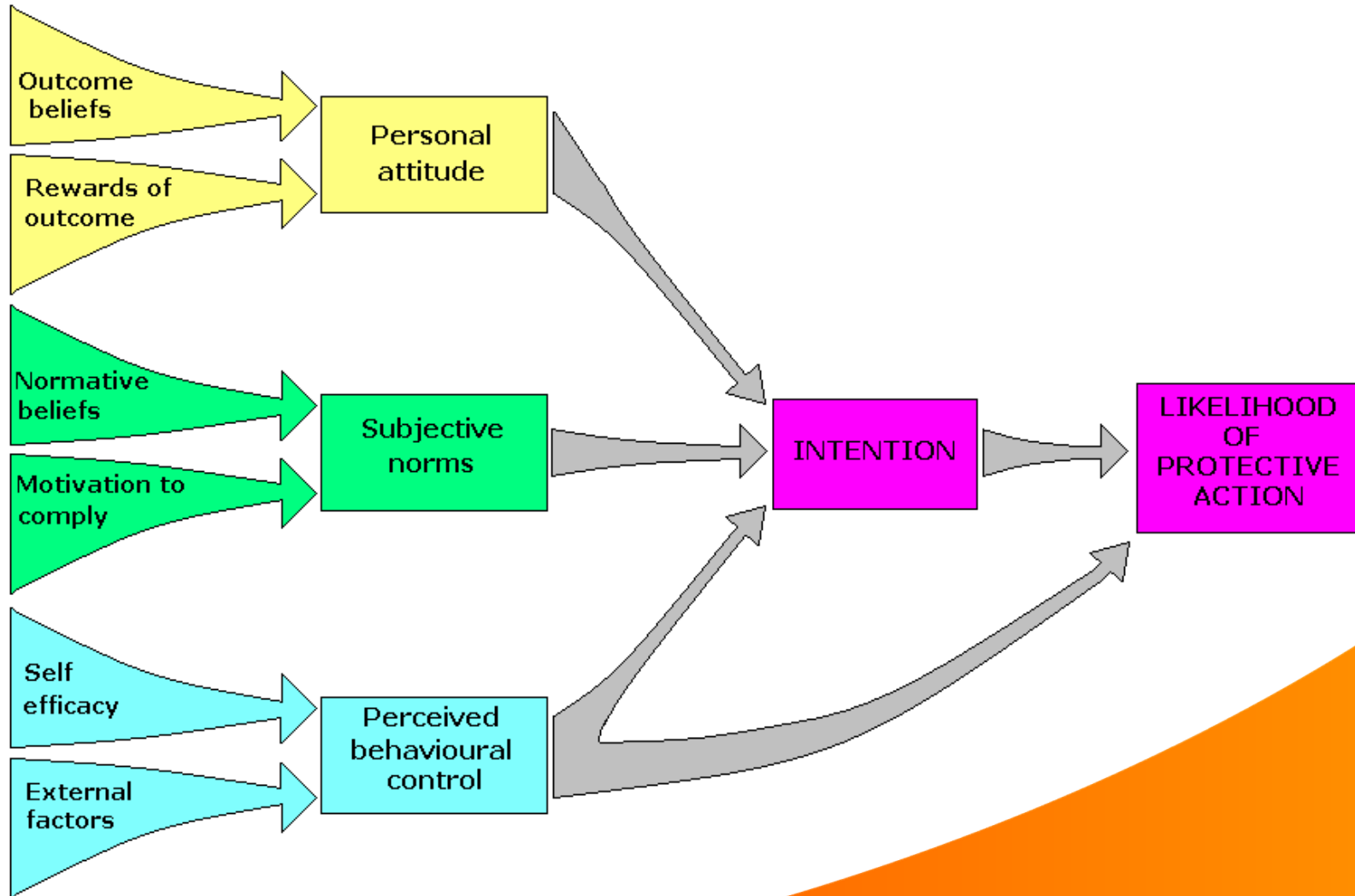
Implications of Results

Audit local urinary catheterisation rates

Local education on catheter care

**Need to explore other reasons for
variation in catheterisation rates**

The theory of planned behaviour



Qualitative study to explore reasons for the variation in catheterisation rates in care homes

Aims

- **To gain an in-depth understanding of how the culture of care in homes relates to toileting & catheter care**
- **To identify whether different approaches to toileting and catheter care are responsible for any variation in catheterisation rates**

Qualitative study: methods

- **Divided homes by catheterisation rate.**
 - **High >12%, Low <6%, 0%**

Structured interviews with 3 different grades of staff

- **Communication within the home**
- **Attitudes to urinary catheterisation**
- **How the decision is made to insert a catheter**
- **Review of residents catheters**

Home staffing in high rate homes



Staffing levels reported to be a problem in all

- 2 homes, many agency staff, not as committed

"Because they're all there wanting the toilet, do you know what I mean, with their hands up wanting the toilet and there's only so many of you and so many of them, so by the time you get round to the last one that you're taking to the toilet, the first one wants to go again." D1, nurse

"if they're agency they don't have the same same attitude towards a home..... and toileting wasn't done " J1 carer

"we just haven't got the staff to check everyone every hour and take them to the toilet to be honest" G3 carer

Home staffing in low rate homes



Staffing not mentioned by any homes as a problem

“We’ve just got above the staffing notice, so I think that plays an important part really if you’ve got staff to use to go around checking people, toileting people, then you don’t have to resort to other measures.” L4 manager 1 catheter

Two homes thought that other homes may have more catheters due to lack of staff

“If they haven’t got enough staff, to be able to help them to use the [toilet] facilities, then they [the patients] are going to get wet, they are going to get sore and they are going to get pressure sores. So compared to that they might choose the catheter.” C1 manager, no catheters



All homes said they used catheters as a last resort, but what is last resort?

A1 high *"if their **very incontinent** in the pads and the **regular toileting doesn't work**, we sometimes try the conven as well, so then it's a last resort"*

D1 high *"most of the reasons are because of incontinence. A lot of these clients have had strokes and they've lost control of their bodily functions, **if we had more staff**, and we could take them to the toilet every half an hour.... "*

E1 high *"with catheters the main idea's to use it while their not able, to go to the toilet themselves. some of ours, when they've had the **strokes and then if they've got the dementia** and everything's set in then they're not going to ask again to go to the toilet."*



All homes said they used catheters as a last resort: high homes

*F1 high “all are continence issues and we have tried every possible way of **trying to promote a good continence** programme and it’s failed.”*

*G3 high, “**it’s so much quicker than trying to toilet someone** that’s maybe needs hoisting and they have to may take 5 – 10 minutes to get to the toilet or a commode and often ends up as it’s the easiest solution “*

*J1 high, ““I think it’s the type of clients we have, we do have quite a heavy work load here. ... **We have a lot here that spend most of their time in bed**”*



All homes said they used catheters as a last resort: low homes

C1 none, "we have incontinent patients all the time but we *toilet them two hourly. ... we change their pads regularly, and we buy our own pads as well .. if they say no we still encourage them to get up and walk and try..* "

H1 "The most important thing, catheterisation *never should be for convenience of the staff.*"

K2 low "so I tend to hopefully look at everything more *proactively* and it does take more time, but I hope somebody takes the time for me when I'm old and can't do something rather than treat me with some indignity and saying "ohh put a catheter in and leave them to it you'll be fine "

Hospital discharges



All homes said the majority of their catheterised clients came from hospital:

*"the majority of people we send to hospital come back with a catheter... sometimes you can understand the reasoning if they've had a fractured hip and they've got a wound and they're very incontinent..... I have actually asked the wards why is this person catheterised ? **"Because they're incontinent."** Which I don't think is a good enough reason."*
B1 deputy matron

*"I always get the impression that it's easy to put the catheter in, because then **they don't have the toilet rounds** like we do sadly, do they? and it's a very very different"*
C2 nurse

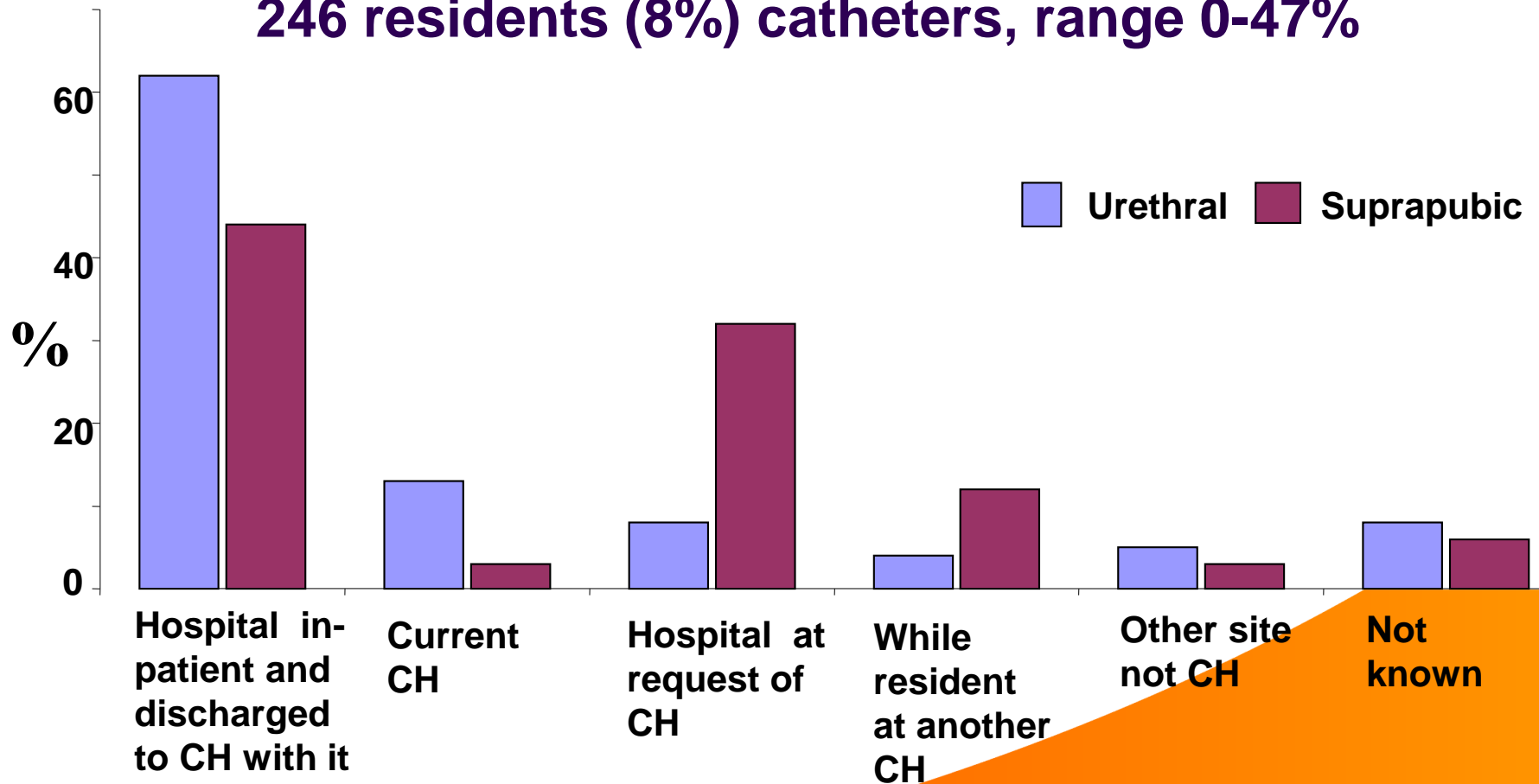
*"I suppose where **they're so short-staffed at the hospital** they're using them because its more convenient,"*
H2 carer

Health setting in which urinary catheters found in CHs are inserted



2008, 92 CHs, 3,190 residents,

246 residents (8%) catheters, range 0-47%



Most homes say they try to remove catheters -but



If residents preference leave catheter in, 4 high homes:

“some of them say I want mine left in and that’s their choice and it’s mainly because they’re lazy and they don’t want the palaver ...if they don’t give them any problems then that’s fine you know, they can they can have the catheters in. it’s their choice not ours.” high A1manager

Low homes more persuasive with residents:

"so what about saying to the resident [who wants to keep the catheter] “why don’t we try for a few days without it” offer them the opportunity to try because I think they’ve probably got the point where the resident feels safe they’re not going to be wet they’re not going to get sore."



Most homes say they try to remove catheters -but

Remove if blocked or falls out but not proactive, 3 high 2 low: *"The one that came from the hospital now, she's a lot better, and if the catheter happens to drop then we will wait and see if she can be fine without the catheter". D1 nurse, high*

Proactively try to remove catheters 4 low, 1? high: *"usually what happens: they catheterise in hospital .. they come back to us and normally the catheters taken out unless there's a reason." K1 carer low*

"she had a stroke and she was really poorly and she 'd gone into hospital and they catheterised her ...we assessed her, and there was actually no other reason for her to have a catheter except incontinence. .. so we removed the catheter and took it from there." C2 low nurse

Could they reduce their catheterisation rate?

No, its the residents choice:

“not as as they are at the moment,...each person is judged individually, but... it’s their choice to have the catheters so you know we’re not going to change that.” A1 high manager

Yes with greater toileting:

*“but they’re not absolutely necessary, they could be taken out and there could be **other means of dealing with that incontinence**” E3 high, deputy manager*

*"the first thing I would do is to try and improve their **mobility**. Make sure their **diet's** better. Make sure they **drink** more. Put in a **regular toileting regime** every hour and a half and document it and see where we went from there and and try and increase the period of time as we go along - that’s the way“ F3 high carer*

Changing attitude to catheters



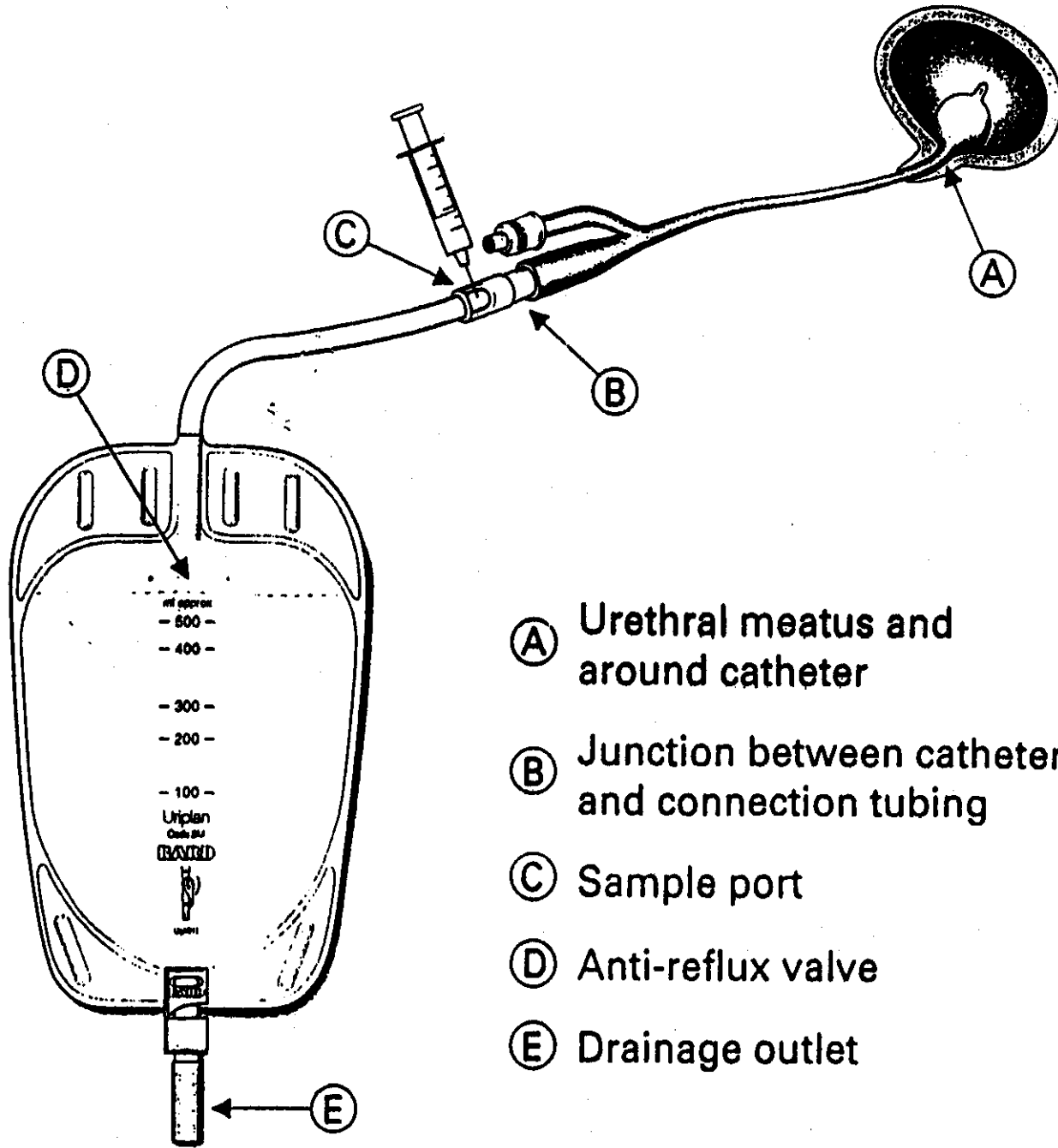
Several staff commented that residents are not as readily catheterised and attitudes have changed.

All homes involve continence advisors

"I mean when I first started, there was so many with catheters but, you know, people are learning, it's not a thing that should be regularly used. In the last couple of years we have reduced the amount of catheters used, you know, and we will try avoiding them if we can. But if it will benefit them from having it then obviously we will, but there's so many other methods of continence control you can have, you know, pads, bladder training, things like that, you don't really need them " H2 carer low

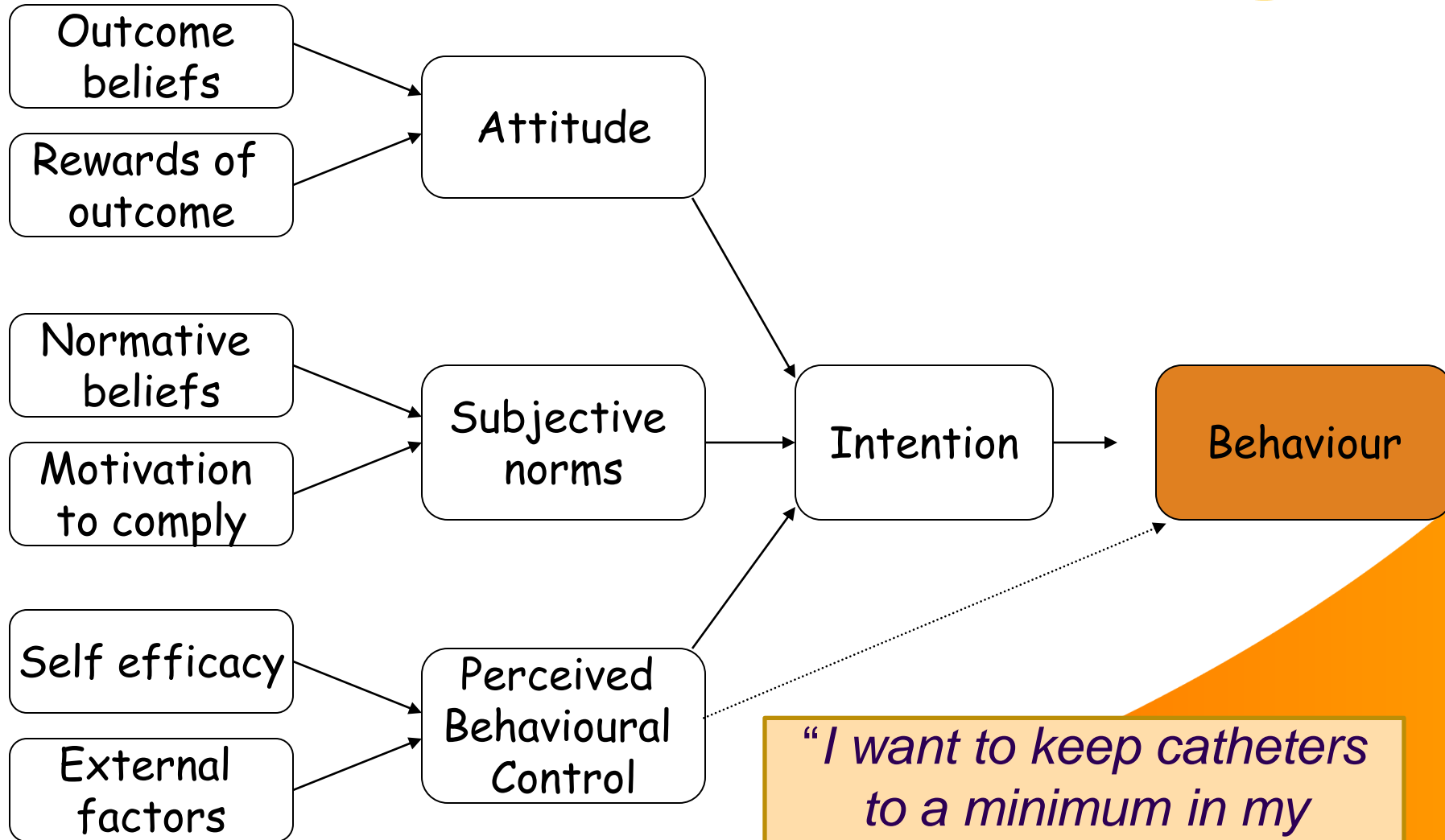
Conclusions

- ❖ **Low homes have very regular toileting regimes**
- ❖ **All homes inherit catheterised clients from hospital**
- ❖ **High homes leave catheters in if clients preference**
- ❖ **Several homes reconsider if: fall out, block, infection**
- ❖ **Low homes proactively remove catheters**
- ❖ **Improved staffing levels may facilitate toileting**



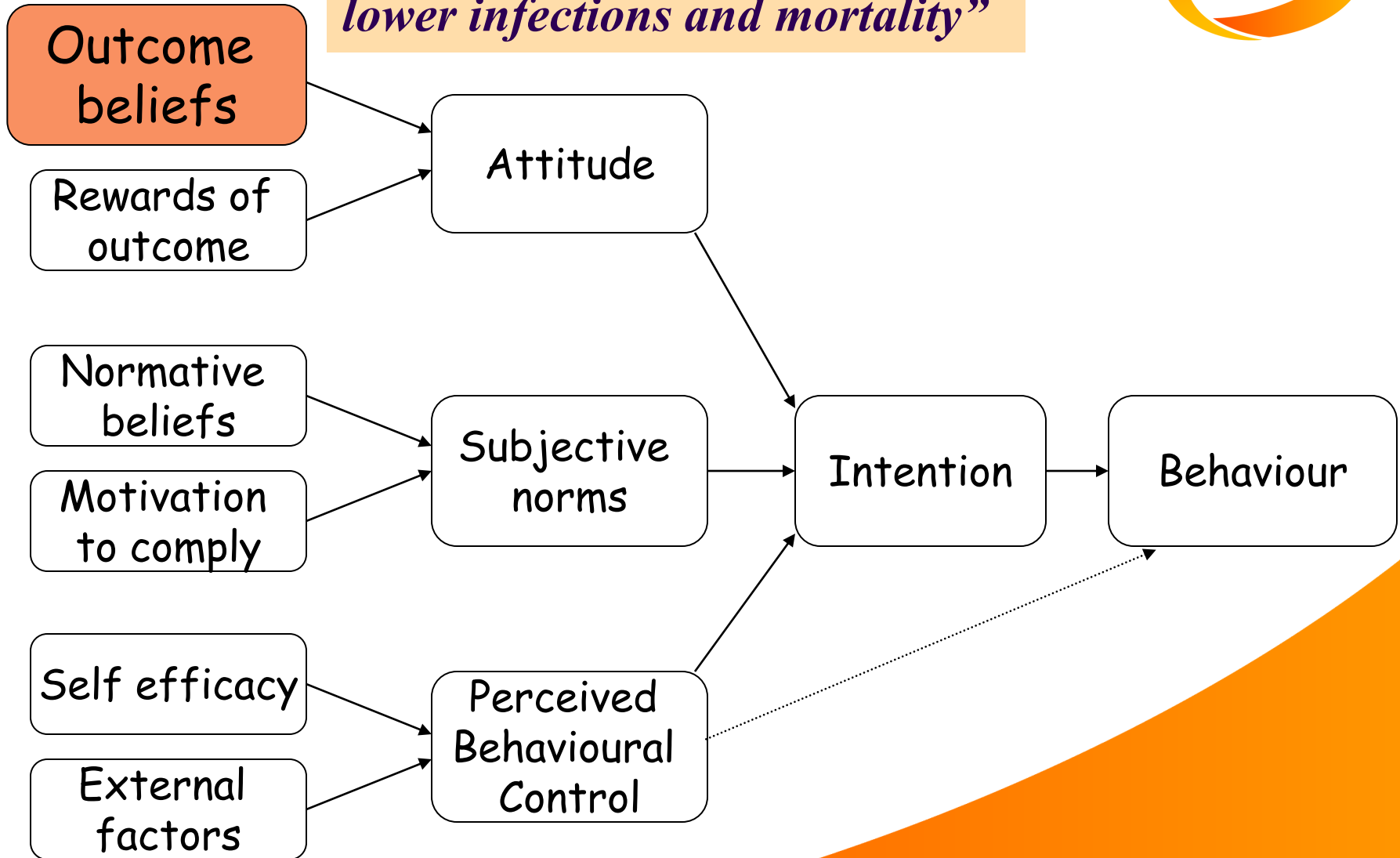
- Ⓐ Urethral meatus and around catheter
- Ⓑ Junction between catheter and connection tubing
- Ⓒ Sample port
- Ⓓ Anti-reflux valve
- Ⓔ Drainage outlet

Theory of Planned Behaviour

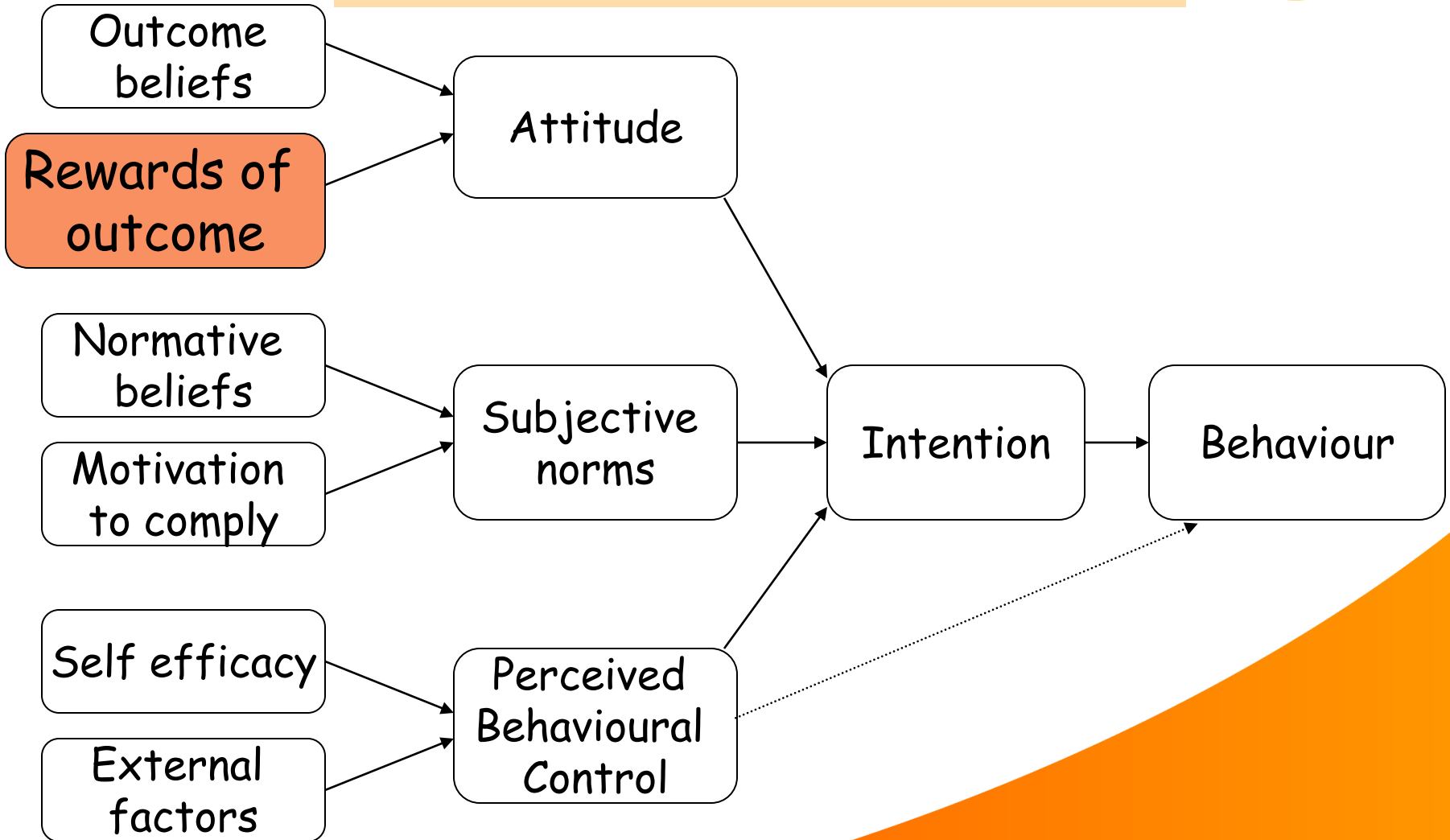


“I want to keep catheters to a minimum in my residents”

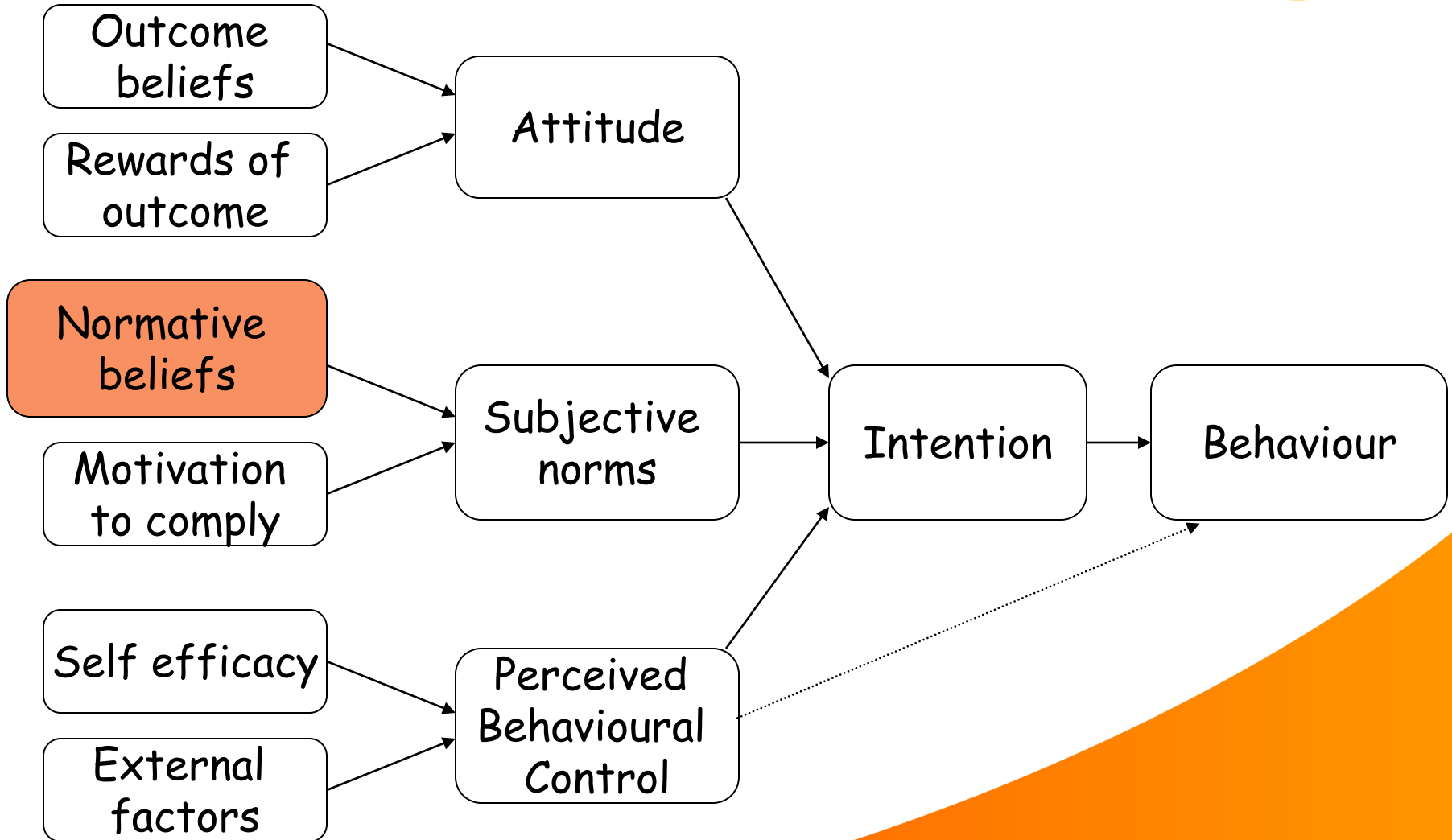
“My reducing catheters in all possible residents will result in lower infections and mortality”



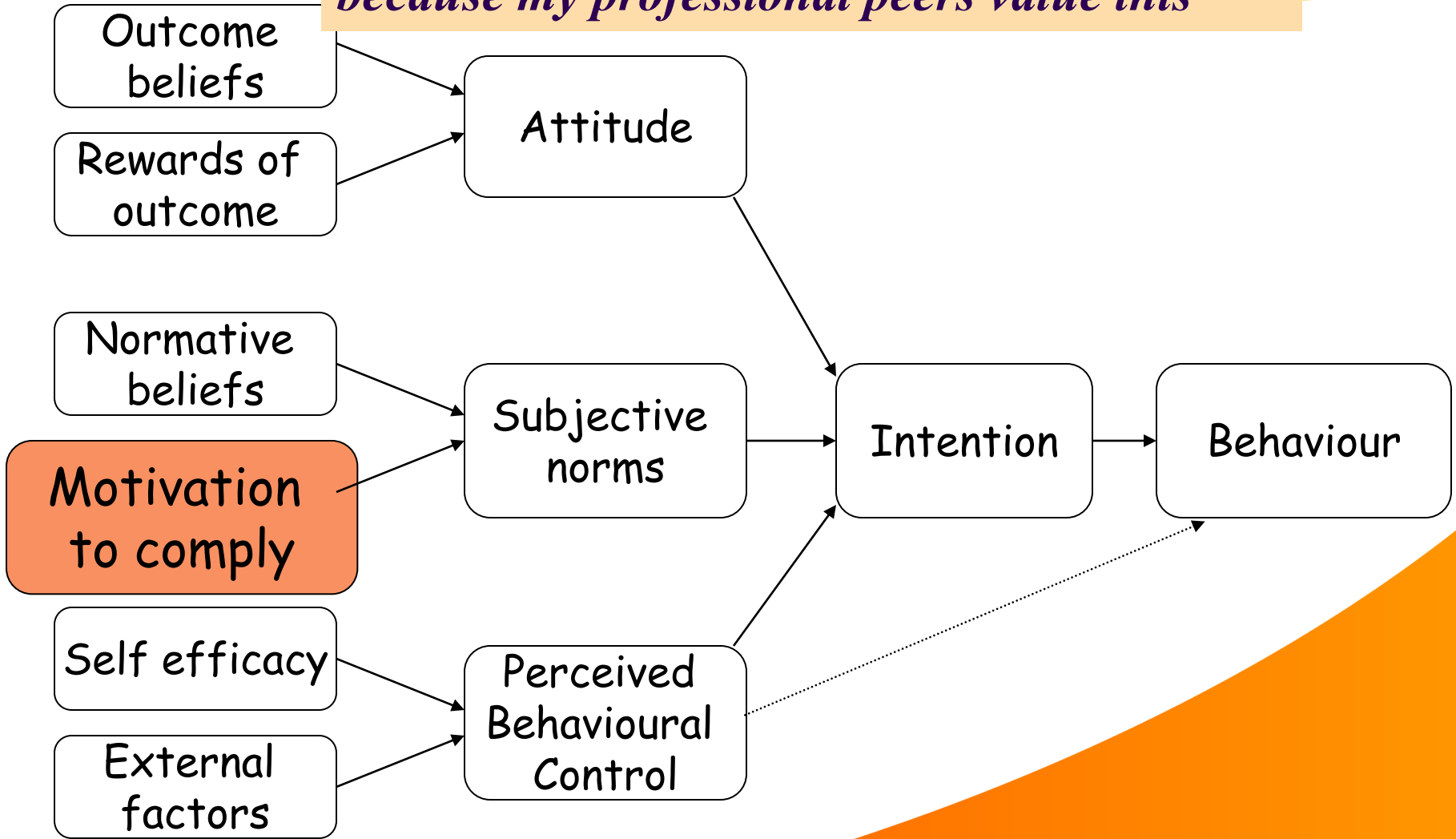
“Reducing catheterisation rates will be good for our home’s reputation”.



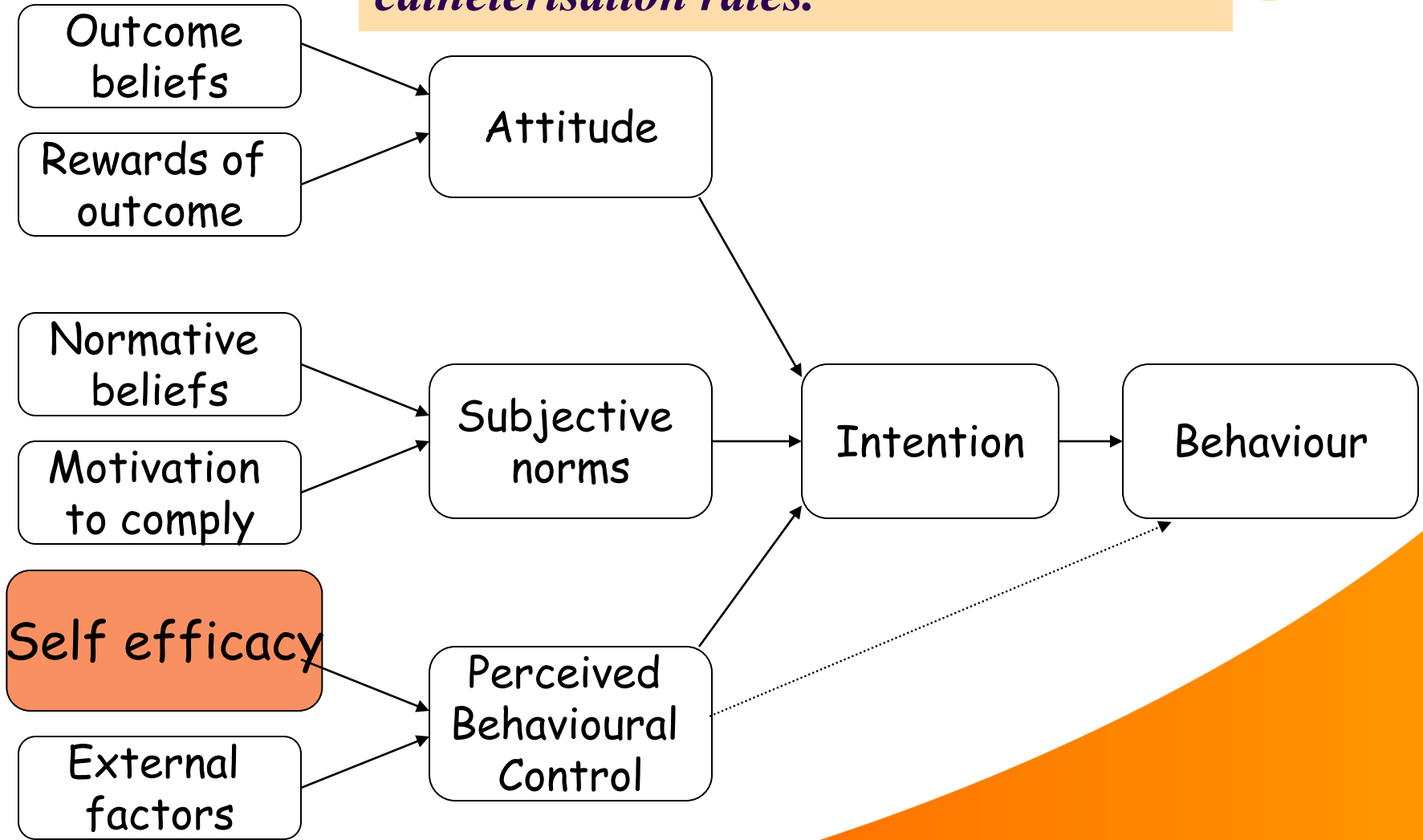
“My colleagues value my discussion about toileting, and removing catheters”



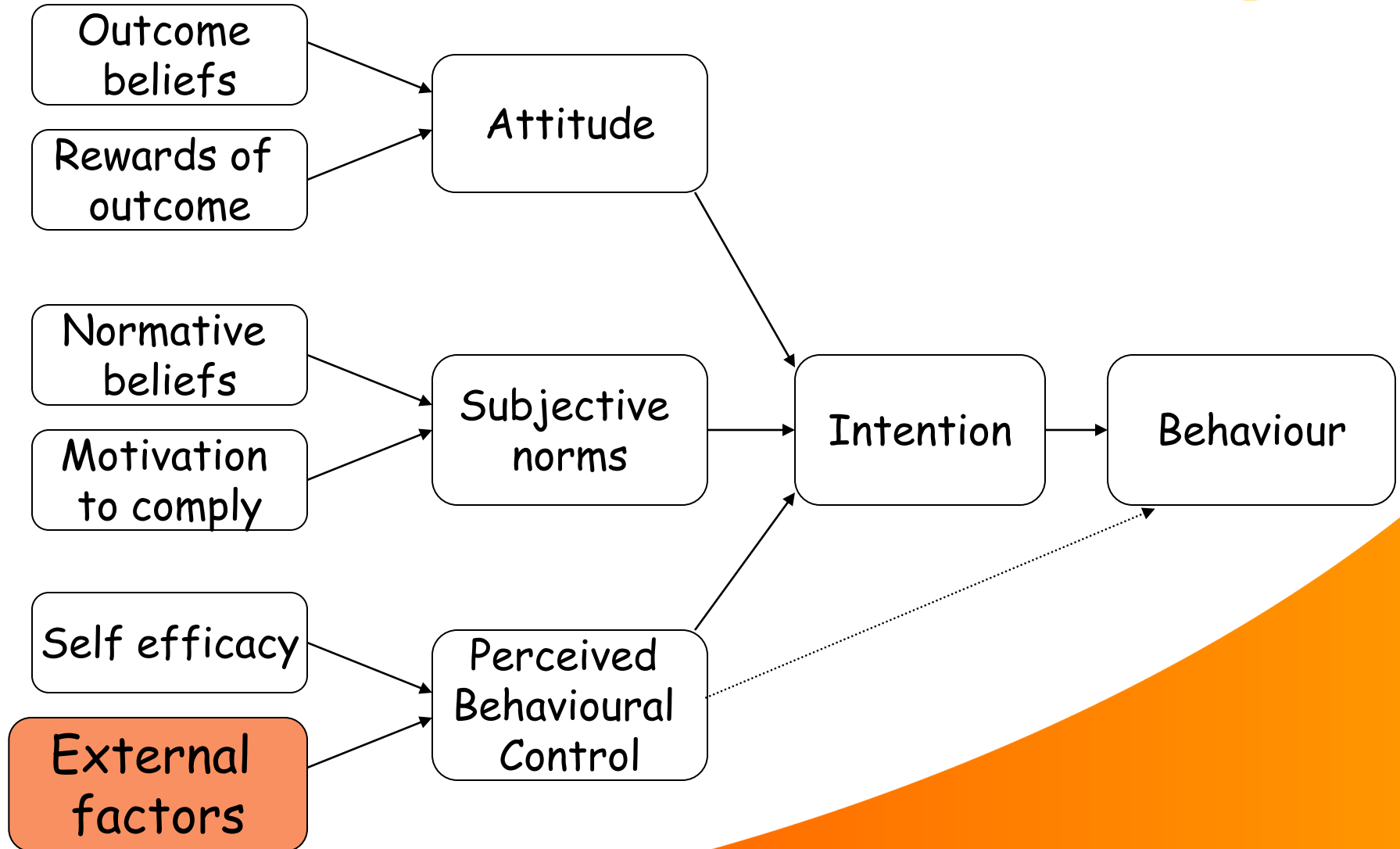
“I want to reduce catheterisation rates because my professional peers value this”



“I am confident that I can reduce catheterisation rates.”



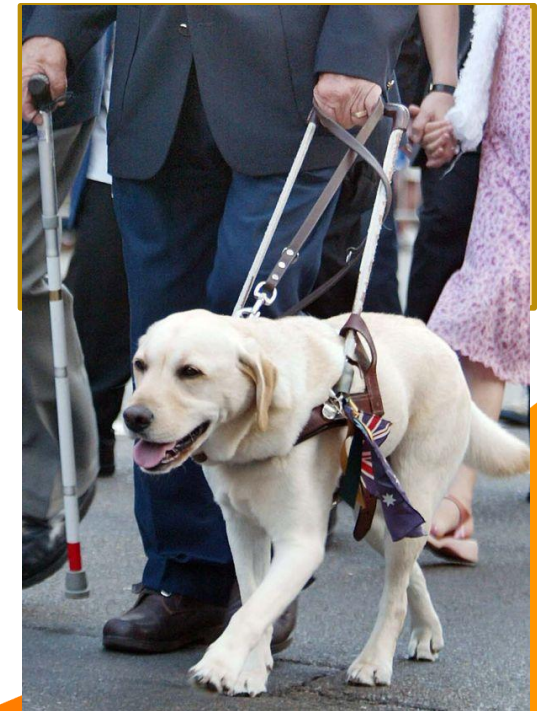
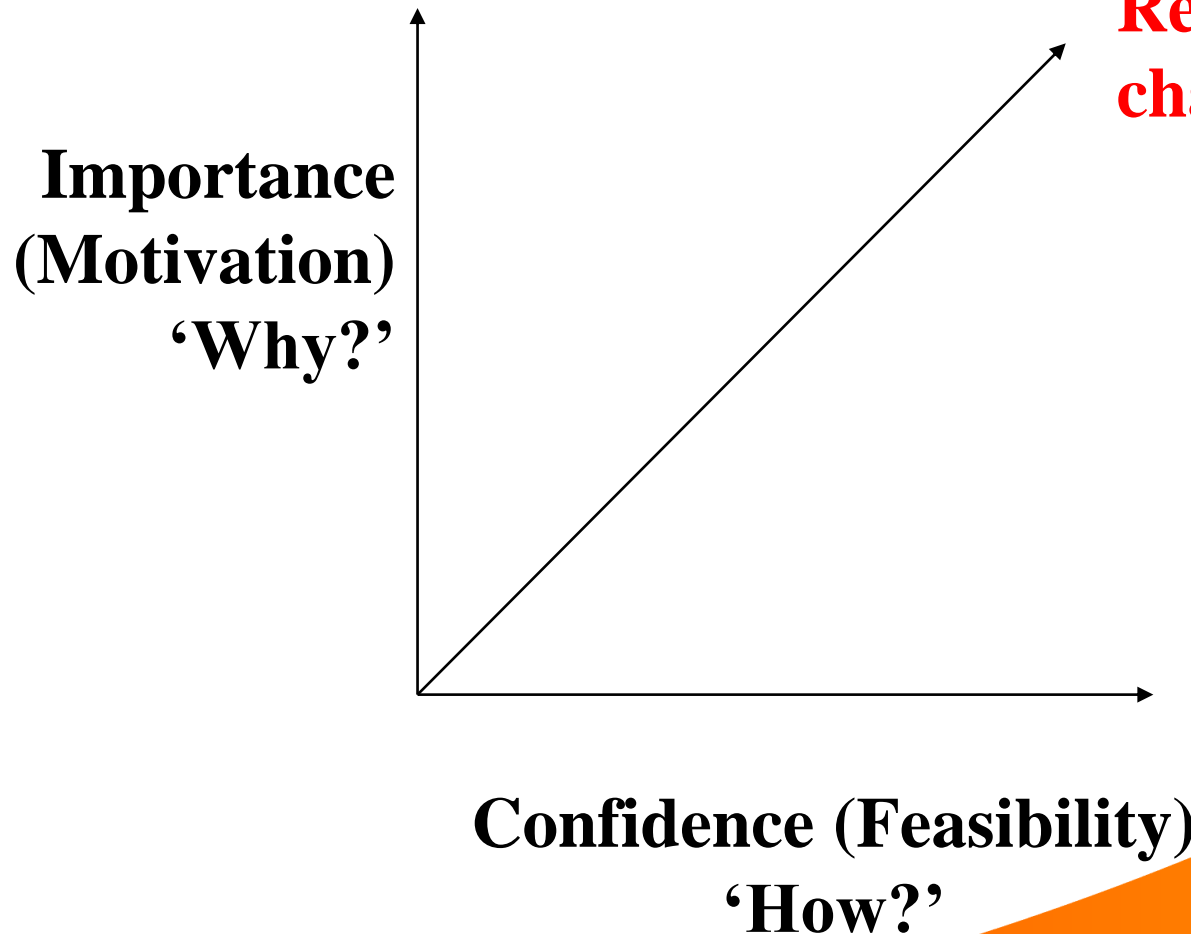
“I can overcome barriers such as the extra time needed for regular toileting”



Easy How and Why model of health behaviour change for a workshop with care home staff



**Readiness to
change**



(Rollnick, Mason, Butler)

Designing a workshop for your care homes

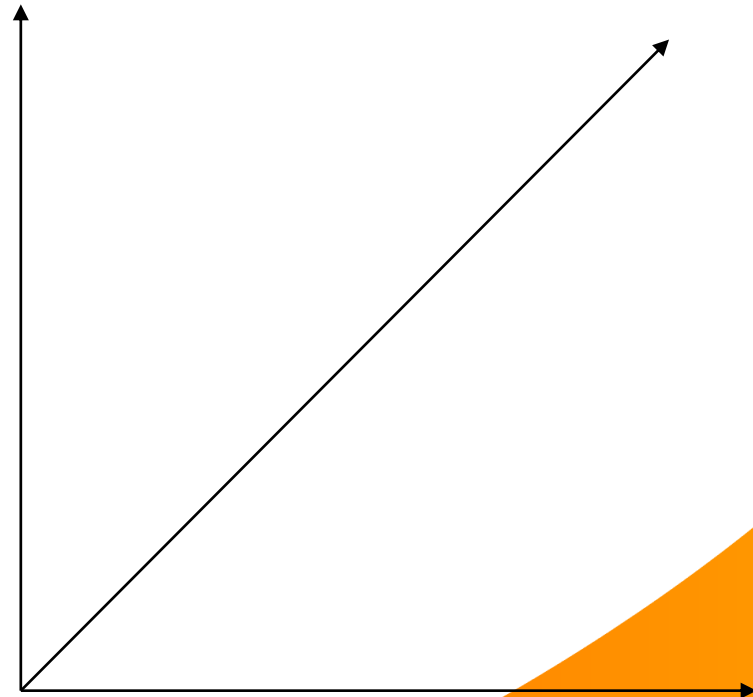
- **Explain the how? and why?**
- **Get participants to name stakeholders**
- **Discuss in groups**
 - Why stakeholders may not think it is important to reduce rates
 - Barriers to reducing catheterisation

Then discuss

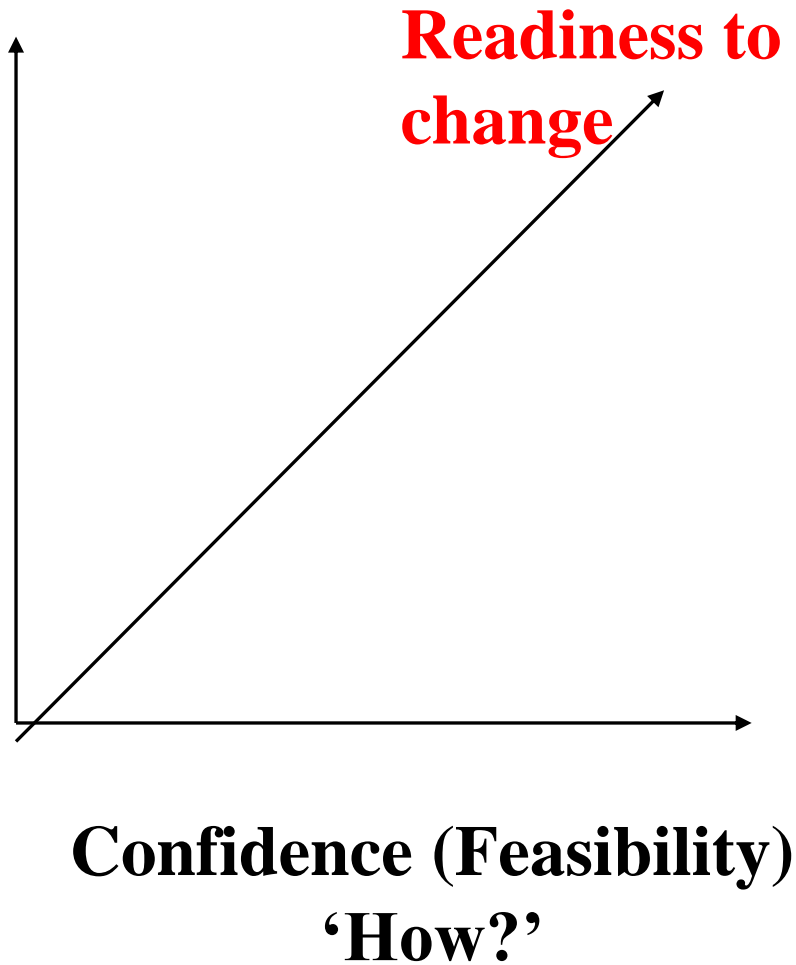


Ideas on how you can increase the importance to all stakeholders – what will motivate them to change?

‘Why?’



Finally



What can be done in **their** CH to increase confidence and the feasibility to reduce catheters



- 
- A photograph of a man in a dark suit and tie embracing a man in a wheelchair. They are in a hallway with a patterned carpet and a staircase in the background. The man in the wheelchair is wearing a light-colored patterned shirt and dark pants. The man in the suit has his arms around the man in the wheelchair, and they both appear to be smiling.
- **Set Agenda together**
 - **Draw out solutions, build on their expertise**
 - **Offer your own**
 - **Convey optimism and respect**

Approaches to overcoming importance and confidence barriers

Educational; *Internal striving for professional competence, Problem Based Learning*

Epidemiological; *Better, easily accessible evidence*

Marketing; *Attractive packages, opinion leaders*

Behavioural; *Feedback,*

Social interaction; *Academic detailing, workshops*

Organizational; *Restructuring, to facilitate toileting*

Coercive; *Financial penalties*

Thanks to you and all the people who have been involved in this work



Gloucester

Dr Clodna McNulty,
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Miss Rebecca Howell-Jones
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Leeds

Dr David Tompkins, Regional Microbiologist
Ms Angela Brady, Community ICN

North Staffs

Ms Kim Gunn, Health Protection Nurse

Guide - why?



“People are generally better persuaded by the reasons which they have themselves discovered, than by those which have come into the mind of others.”

Blaise Pascal, *Pensées*

(1670)

