The AMR-BESH Study:
Part 2: The acceptability of CPE Screening

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Study funded by Health Protection Scotland &
The Scottish Infection Research Network

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Study aim & objectives

The aim of the AMR-BESH study is:

'To provide evidence of drivers, barriers and **acceptability factors**, offering an explanation of mechanisms that enhance or inhibit implementation of HAI screening policy in NHS hospitals'.

Part 2 Study Objectives:

Stage 1: Elicit factors which may influence the acceptability of CPE screening from a staff and patient perspective.

Stage 2: Quantify levels of acceptability of CPE screening from a staff and general public perspective.

Participants

Stage 1: Qualitative data

Four Diverse NHS Board case sites:

Individual telephone interviews: Infection Control Managers (n=4); Microbiology Leads (n=4); bed capacity managers (n=3).

Focus groups (FGs) with Nursing Staff (total of 7 FG, from 2-11 participants per group, total 38 participants).

Three focus groups with 'proxy patients'

Stage 2 Surveys:

Nursing staff (n=450) from 15 HBs, 10 categories of clinical area

ICMs (n=15); Microbiologists (n=21)

Survey of the general public (n=261)

(Sample sizes met power calculation requirements)

Clinical staff: Highlights

Implementation
- ICM data
- Nursing staff data

Attitudes
- Nursing staff
- ICMs
- Microbiologist

Acceptability
- Logistic regression model
- Barriers & enablers

Stage 2 Survey data: CPE screening implementation

ICM (n=15) reported data:

- 60% (n=9) report 'Screening for CPE is routinely undertaken in most clinical areas in this Health Board'
- 33.3% (n=5) report 'We are beginning to implement/pilot CPE screening in selected clinical areas'

What do nursing staff say?

Questionnaire item	% (n)
Screening for CPE is undertaken in the clinical area I work in	**76%** (343)
I have been informed about my hospital's policy and processes for screening patients for CPE	**55%** (248)
I intend to conduct CPE screening, on patients on admission, according to my hospital policy	**79%** (356)
I believe that CPE screening is acceptable.	**67%** (303)

Comparing attitudes (% agree)

Questionnaire item:	Nurses % (n)	ICMs % (n)	Micro % (n)
CPE is an emerging multi-drug resistant bacteria of growing concern	68% (308)	93% (14)	100% (21)
The consequences of CPE infection for patients … are so severe that screening is always a priority	47% (211)	67% (10)	86% (18)
If a rectal swab is required as part of CPE screening for the patient I care for, they should be asked to do this themselves, if able	74% (333)	NA	NA
Rectal swabs, for microbiological analysis, obtained by patients are just as reliable as those obtained by nurses	NA	7% (1)	14% (3)

So what does this tell us about staff attitudes, preferences, and the use of patient self-swabbing?

Logistic Regression Model: Key predictors of acceptability of CPE screening for nursing staff

Questionnaire item	Wald	P	OR	95% CI
I intend/ would intend to conduct CPE screening, on patients on admission, according to my hospital policy. (79% agree)	26.167	.000	14.194	5.136 - 39.221
The consequences of CPE infection for the patients I care for is/will be so severe that screening will always be a priority. (47% agree)	24.15	.000	7.128	3.257 - 15.603
I have been informed about my hospital's policy and processes for screening patients for CPE. (55% agree)	8.703	.003	3.035	1.451 - 6.344
If a rectal swab is/was required as part of CPE screening for the patient I care for they should be asked to do this themselves, if able. (74% agree)	8.119	.004	2.889	1.393 - 5.992
I am aware that CPE is an emerging multi-drug resistant bacteria of growing concern. (68% agree)	6.355	.012	2.439	1.219 - 4.877
Health Board	9.960	.007		

Perceived severity of consequences (47% nurse agree CPE has severe consequences)

"I don't think they see it as their problem, and when I educate nursing staff and doctors, I try and give them…make it relevant to them" Microbiologist

"I think the global threat of antimicrobial resistance and the impact on them personally, their families … so what we'll end up with is a global population with a higher proportion of CPE and fewer antibiotics, and that ultimately does start to impact on those that you know and love"
ICM

"When you start getting wound infections with these organisms, you're not going to be able to treat them with anything, so what proportion of surgical wounds result in mortality and death in patients? Everything's going to start going up, the mortality, the morbidity is going to start rocketing if these organisms take over."
Microbiologist

8

Awareness of CPE as an emerging organism of growing concern (68% nurses are aware)

Have you heard of CPE?
"No. Not at all "
"I just got told there's a bug, they can get it if they're in hospital abroad and we're not wanting it over here and I just said, right, okay."
Nursing staff

What do you know about it (CPE), what have you heard about it?
"Nothing at all".
"I don't think it can be treated can it?"
Nursing staff

So are you aware of CPE screening going on in your hospital, not in your areas?
"No."
Is CPE something that you're aware of that you've ever heard of?
"No"
"There's that many names the VREA and …. Are they meant to be screening in here for CPE?
Nursing staff

9

Patient self-swabbing for rectal swab (74% nurses agree)

"I don't think it's a problem for us, I think it's not a nice screening for the patients to have done. But for us…I mean, I suppose, maybe, for some nurses, it's a bit awkward to ask patients, we just get the patients to swab themselves."
Nursing staff

"Honestly, they [staff involved in pilot] were horrified. They don't particularly want to do a rectal swab on somebody at an outpatient clinic. They think it's invasive … "
Nursing staff

"Yeah, it makes you wonder, who doesn't like having the swab done. Is it the patient or the nursing staff?"
Microbiologist

10

Public Perspectives: Study Highlights

Possible barriers & enablers

'Acceptability' median scores

Linear regression model

11

General public; some possible barriers

"I believe if everyone was given tea tree oil* when they entered hospital and were told to use it anywhere they'd be going to touch, there wouldn't be infections. It kills all known germs, tea tree oil, even MRSA"

"A brother of a friend of mine died of embarrassment. Well, he died of rectal cancer, and the reason he died was because he'd had symptoms for a long time and wouldn't see a doctor. …Okay, so embarrassment, yeah, okay. …It's a big factor."

"I mean, here's the thing…the first thing that would come in your mind, 'is my treatment going to be affected.' …We don't want people blacklisted or put on some kind of… Would you become a pariah?"

12

* Clin Microbiol Rev. 2006 Jan; 19(1): 50–62.

General public: some possible enablers

"I think you're seeing programmes on the general television talking about antimicrobial resistance, and I think without labelling CPE as such, I think there's a growing awareness of antimicrobial resistance"

"most of us are responsible people, and we want to know what's actually happening in our community and how we can actually deal with it, and that's where I'm coming from, that's why I would want to know."

"It's interesting that we're seeing the rectal swab as a sort of harsher thing than actually giving the (stool) sample, and I see it as the other way round … I think providing it weren't too painful, I'd rather delegate it all to somebody else."

13

General Public: Acceptability of CPE Screening & Management

Question	N	Median*, (IQR)
If I were to be admitted to hospital I would find CPE screening acceptable.	240	9 (3)
If I were to be admitted to hospital, I would find rectal swabbing for CPE acceptable.	240	9 (3)
If I were to be admitted to hospital and found to be carrying CPE, I would find being place in a single room acceptable.	238	8 (4)

*Median score on a scale of 1-10, where 1=strongly disagree and 10=strongly agree

14

Linear Regression Model: Key predictors of acceptability of CPE screening for general public

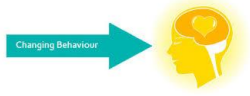
Questionnaire item	Beta	t	p
Having heard of the problem of antimicrobial resistance	-.108	-2.544	P=.012
Social Influence scale i.e. concern about transmission to others; beliefs about family norms; sense of responsibility to be screened	.140	2.161	P=.032
If I were to be admitted to hospital, I would find rectal swabbing for CPE acceptable	.147	2.996	P=.003
If I were to be admitted to hospital and found to be carrying CPE, I would find being place in a single room acceptable	.221	4.363	P=.000
If I was admitted to hospital careful explanation about CPE screening from a health professional would make screening more acceptable to me	.316	5.849	P=.000
I believe that CPE screening would be acceptable to most people being admitted to hospital	.213	4.035	P=.000

Summary

- Findings show that for both NHS nursing staff & the general public, knowledge (or lack thereof) of AMR & CPE is a key predicator of the acceptability of CPE Screening

However ……

- Knowledge is not the only predictor of behaviour; attitudes and social influences are also crucial.
- Interventions to increase the acceptability and uptake of CPE screening must ensure adequate knowledge *AND* also target attitudinal barriers to screening behaviours.



16

Specifically:

For Nursing staff: Interventions should focus on:

- clear hospital endorsement of CPE screening
- accessible provision of policy information
- engaging staff with greater understanding of the severity of the consequences of CPE and the importance of correct screening and rectal swabbing procedures
- proportionate monitoring and feedback on screening compliance using quality improvement methodologies.

For the General Public: Interventions should focus on:

- shaping public knowledge of CPE by providing information about antimicrobial resistance & CPE
- capitalising on social influences, such as a sense of personal responsibility and concern for others, by harnessing ideas of collective action or the public good.

17

Thank you for listening!

18