An evaluation of a toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae: A cross-sectional survey of NHS acute trusts in England

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INTRODUCTION

Over the past decade there have been large increases in Carbapenemase-producing Enterobacteriaceae (CPE) infections globally. Numerous outbreaks have been reported in Europe and between 2008 to 2013 the UK saw large increases in the number of CPE positive isolates. Most known CPE transmission in England occurs in hospital settings and a key risk factor for CPE acquisition is previous hospitalisation, particularly abroad. In March 2014, as part of the response to a small number of CPE outbreaks in hospitals in England, Public Health England (PHE) launched a CPE toolkit to promote the early detection, management and control of CPE colonisations and infections in acute care settings.

AIM

This evaluation survey aimed to examine awareness, uptake, implementation and usefulness of the PHE CPE toolkit and to identify potential barriers and facilitators to the adoption of the toolkit.

METHODS

A cross-sectional survey was conducted in May 2016 targeting senior infection prevention and control leads in National Health Service (NHS) acute trusts in England. The questionnaire design and analysis was informed by the behaviour change wheel framework which characterises target behaviours (B) within the domains capability, opportunity and motivation (COM) (Figure 1). Descriptive analysis and multivariable regression models were conducted to identify factors associated with awareness, uptake, implementation and usefulness of the CPE toolkit. Narrative responses were analysed thematically to identify potential barriers and facilitators to implementation of the toolkit.

RESULTS

There was a good response rate to the survey (99/151, 66%). The majority of NHS acute trusts had a written plan for CPE prevention and management (92%) although the timing of implementation of a plan varied with 50% adopting a plan within 9 months of the toolkit launch and 25% more than 10 months afterwards (Figure 2).

Two-thirds of trusts reported a high level of compliance among frontline staff with screening and isolation of CPE risk patients. Low levels of compliance with screening by frontline staff were associated with a lack of strong management support for CPE prevention and a higher odds of agreeing the toolkit is not practical to use. This effect was stronger in trusts with higher numbers of CPE cases.

There was a good response to the survey amounting to a response rate of 66%.

The results represent the views of senior IPC leads within NHS acute trust in England and are representative of trusts by composition, region, size and type of trust as well as by the level of engagement in CPE assessed by local PHE AMR leads.

The survey was completed two years after the launch of the toolkit and therefore the initial response to the toolkit is not captured.

The views of frontline staff are not represented in these survey results but are key to successful implementation of the guidelines.

CONCLUSIONS / RECOMMENDATIONS

There was a high level of awareness and utilization of the CPE toolkit among respondent trusts.

The majority of NHS acute trusts have a CPE plan.

Confidence in the guidelines is crucial to facilitate successful implementation, however 80% of respondents did not have confidence in the CPE toolkit as an effective means to prevent CPE and therefore the initial response to the toolkit is not captured.

Lower levels of implementation at the frontline may be partly due to a lack of physical opportunity defined as having low levels of CPE hence frontline staff may not deem CPE preventive measures a priority or even necessary.

Support from senior management is needed for CPE preventive activities to be implemented consistently by frontline staff.

The context in which an intervention is introduced is an important consideration and respondents felt that context was a key challenge to implementation in respect to low levels of CPE and limited resources.

Updated guidance on the prevention and management of CPE is needed for acute trusts that engenders confidence.

Future guidance should incorporate participation and feedback systems from acute trust staff.

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REFERENCES
