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Short report

Evaluation of patient-held carbapenemase-producing Enterobacteriaceae (CPE) alert card

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SUMMARY

Public Health England recommends patient-held cards for those colonized with carbapenemase-producing Enterobacteriaceae (CPE). Alert cards were provided to 104 CPE-positive inpatients, with follow-up at six months. Excluding those who died, the response rate was 39%. Sixteen patients (46%) recalled receiving the card; 13 (81%) of these retained it, most (64%) of whom reported using it. This is the first evaluation of a patient-held alert card for any antimicrobial-resistant (AMR) bacteria in the UK. This study demonstrated that, when retained, CPE alert cards can be an effective communication tool. Further work is required to evaluate effectiveness and improve retention.

Introduction

Antimicrobial resistance is a key priority for the UK.[1] Over the past decade, colonization and infections due to carbapenemase-producing Enterobacteriaceae (CPE) have increased nationally and internationally.[2] CPE infections are associated with a high mortality, have limited treatment options, and may increase hospital stay.[2–4]

Public Health England (PHE) recommends that patients and their family (where appropriate) are informed of a positive CPE result, and written information provided.[3] PHE also recommends that patients colonized with CPE should be isolated when admitted to hospital.[3] Unfortunately an admitting hospital may be unaware of a patient's positive CPE status, so patients are relied upon to self-report their status or relevant risk factors when they attend.

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Patient-held alert cards, when presented to health professionals, may improve communication and enable appropriate management.[5–8] Although the evidence base is limited, patient-held alert cards are an established feature of care in some chronic diseases such as diabetes, haemophilia, and hyposplenism.[5,8,9] Improved patient care, and patient and carer empowerment have been reported following introduction of patient-held cards in respiratory and cardiac conditions in the UK.[5,6,8] The effectiveness of patient-held alert cards is less well established for infectious disease carriage. Cards were promoted for those with *Clostridium difficile* infections in the UK but we have been unable to identify any evaluations.[10] A literature search identified no previous evaluations of patient-held cards for CPE colonization.

Providing alert cards to those who are colonized with CPE may improve communication, enable early alerting, and facilitate initiation of appropriate infection control practices for admitting hospitals. The aim of this pilot study was to evaluate an alert card for CPE-colonized patients.

Methods

Each newly identified CPE-colonized patient at the Central Manchester University Hospital in northwest England was visited by an infection prevention and control nurse (IPCN). Verbal and written information about CPE were provided. Each patient was provided with a wallet-sized CPE alert card (Figure 1). They were advised to carry it with them and to show the card when they visited a healthcare professional or were readmitted to hospital.

The IPCN sought verbal consent to share the patients' contact details and screening result with the local public health team for follow-up by telephone in six months' time. From June 2014, 104 consecutive laboratory-confirmed CPE-positive inpatients from one acute hospital, who consented to participate, were identified and demographic details were collected.

Approximately six months after the first patient enrolled, the patient list was reviewed against personal demographic service records to identify those who had died. The remaining cases were contacted by the local public health team and a questionnaire completed with the patients or their carers. The questionnaire covered receipt, retention, and use of the card, as well as details of subsequent hospital attendances. Attempts were made to contact each case on at least three separate occasions.

Responses were recorded on a web-based survey tool. The information was later transferred to a spreadsheet (MS Excel), cleaned, coded, and analysed.

Following advice from the hospital research and development team, this was considered to be service evaluation and thus research ethics committee review was not required.

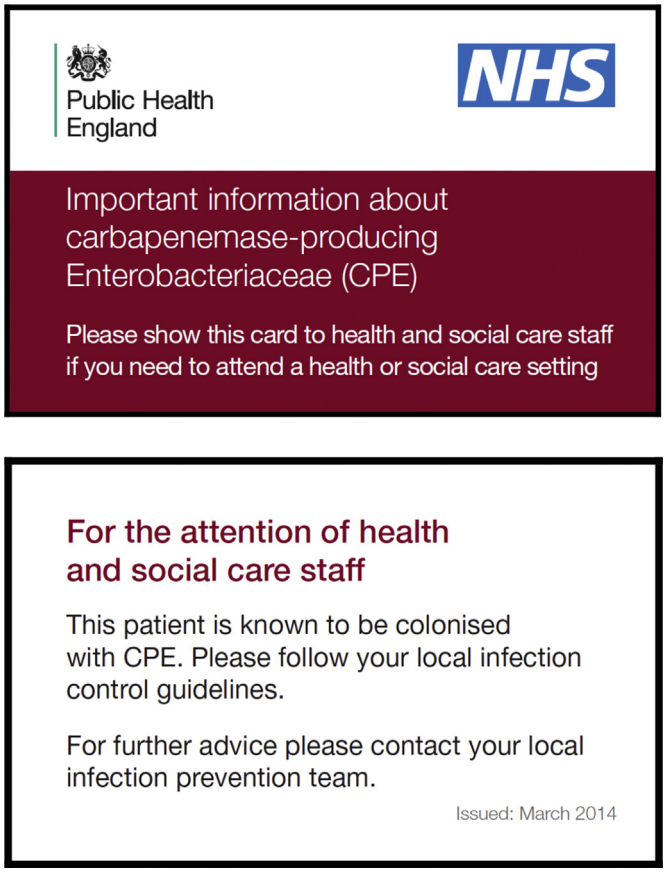

Figure 1. Carbapenemase-producing Enterobacteriaceae (CPE) alert card.

Results

Fifteen cases had died prior to follow-up (14%). Contact was made and the questionnaire completed with 35 (39%) of the remaining 89 cases. The characteristics of these three groups were similar, except that the median age was slightly lower in the group whom we were unable to contact (Table I).

Of the 35 cases contacted, 16 patients (46%) recalled receiving the patient-held CPE card; of these, 13 patients (81%) retained their card at six months.

Of those who had retained their card, 11 (85%) reported attending a hospital setting (as either an inpatient or outpatient) since their initial discharge. Seven (64%) reported presenting the card at each hospital attendance: all seven had also presented the card within the community, e.g. to their family doctor.

Four patients (36%) retained their card, but had not shown it at hospital attendances, or any other setting. Data were not collected to determine use of healthcare settings by those who did not recall receiving or did not retain their card.

When the free text qualitative responses were reviewed, there were key differences between those who did and did not recall receiving the card. Many of those who did not recall receiving the card reported being very unwell at the time their CPE status was identified, and felt it was possible the card had been provided but they had been too unwell to recall the event.

Thirteen cases (37%) required input from a carer to complete the questionnaire. Carers frequently cited poor physical health or poor memory as likely reasons for the lack of recall. Carers were frequently unaware that the card had been issued, and frequently did not understand its purpose.

The three cases who recalled receiving a CPE alert card but had not retained it declined the offer of a replacement card. A further 11 patients who did not recall receiving a card did not