

Improving the quality of care for community acquired pneumonia using web based support for dissemination, communication and measurement



Davey P G¹, Patton A², Leonard S², Bucknall C E³

¹ Ninewells Hospital and Medical School, Dundee, Scotland, United Kingdom ² Royal College of Physicians of Edinburgh, 9 Queen Street, Edinburgh, Scotland, United Kingdom ³ Royal College of Physicians and Surgeons of Glasgow, 232 St Vincent Street, Glasgow, Scotland, United Kingdom

Abstract

Objectives: Our objective is to improve management of CAP by defining and implementing a bundle of essential elements of care that must be delivered within the first few hours after arrival at the hospital.

Methods: This prospective improvement study is part of a Scotland National Audit Project funded by the Health Foundation and co-ordinated by the Royal Colleges of Physicians in Scotland (www.snaproject.org.uk). We established a multi-disciplinary Steering Group to develop a care bundle that identifies critical care processes in the first 4 hours after presentation. Care Bundles focus on clinical actions that are proven (with high level evidence) to improve outcomes. We are testing bundle implementation and measures for improvement in six hospitals before spreading to hospitals in all 15 Health Boards across Scotland. We are using rapid cycle tests of change and small, repeated measures to bring about change and measure impact. We have established a password protected Extranet using the service provided by the Institute for Healthcare Improvement (www.ihl.org). The Extranet provides easy access to all of the documentation for the project, aids communication between teams and allows teams to view their results in the context of aggregated data from all participating hospitals. The cost of an Extranet is \$6,000 per year and requires 4-5 working days to establish.

Results: All six hospitals have posted measures on the Extranet although the number contributing measures each month has ranged from three to six. Overall the results show progressive improvement in individual care processes, for example from 15% to 58% for CURB65 risk assessment and from 32% to 42% for compliance with all bundle elements (≥92% oxygenation and antibiotics within 4h plus identification of patients requiring a high dependency plan and of low risk patients who can be managed at home). Individual hospitals have used a variety of techniques to drive these improvements (e.g. email of monthly results to junior doctors, wall posters, reminders on case records).

Conclusions: An Extranet is a practical solution for web based support for quality improvement projects. Although steady progress has been achieved with improvement in the quality of care for CAP the overall compliance with the full care bundle is currently well below our target level of 95%. The main barrier that remains to be overcome is sustaining improvement despite increasingly frequent changes of junior medical staff.

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Methods

This prospective improvement study is part of a Scotland National Audit Project funded by the Health Foundation and co-ordinated by the Royal Colleges of Physicians in Scotland (www.snaproject.org.uk). We established a multi-disciplinary Steering Group to develop a care bundle (see Figure 1) that identifies critical care processes in the first 4 hours after presentation. Care Bundles focus on clinical actions that are proven (with high level evidence) to improve outcomes.

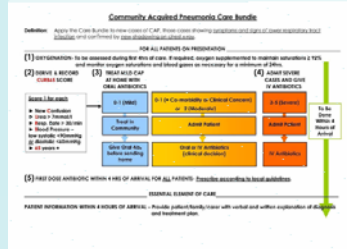


Figure 1: CAP Care Bundle

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Results

All six hospitals have posted measures on the Extranet although the number contributing measures each month has ranged from three to six. Overall the results show progressive improvement in individual care processes, for example from 15% to 58% for CURB65 risk assessment (Figure 2) and from 32% to 42% for compliance with all bundle elements (≥92% oxygenation (Figure 3) and antibiotics within 4h (Figure 4) plus identification of patients requiring a high dependency plan and of low risk patients who can be managed at home). Individual hospitals have used a variety of techniques to drive these improvements (e.g. email of monthly results to junior doctors, wall posters, reminders on case records).

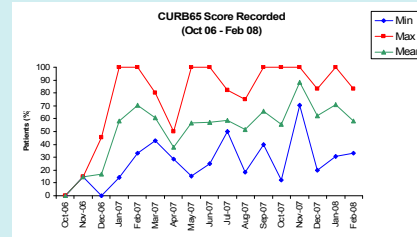


Figure 2: CURB65 Score Recorded

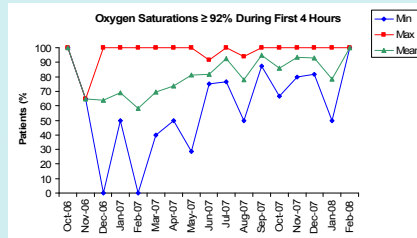


Figure 3: Oxygen Saturations ≥ 92%

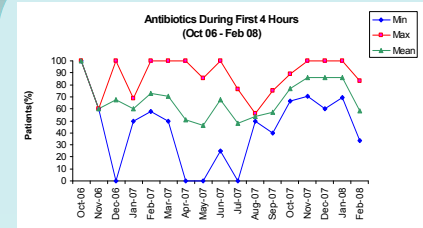


Figure 4: Antibiotics During First 4 Hours

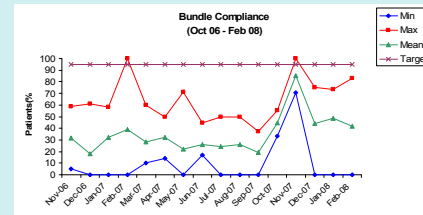


Figure 5: Bundle Compliance

Conclusion

An Extranet is a practical solution for web based support for quality improvement projects. Although steady progress has been achieved with improvement in the quality of care for CAP the overall compliance with the full care bundle is currently well below our target level of 95% (Figure 5). The main barrier that remains to be overcome is sustaining improvement despite increasingly frequent changes of junior medical staff.

