Outcomes report

Working in strategic partnership:

Royal College of Physicians
British Thoracic Society
PCRS

Supported by:

ACPRC
Association of Respiratory Nurse Specialists
Association for Respiratory Technology & Physiology
Royal College of Nursing

Commissioned by:

HQIP
Royal College of Physicians

Setting higher standards
Outcomes report

• Long-term (within 90 and 180 days of PR assessment) outcomes for patients (n = 7,135) who were included in the 2015 PR audit, in England.

• The outcomes examined:
  • Mortality
  • Hospital admissions
  • Total bed days

• Outcomes were sourced by linking audit data to data held by the Hospital Episode Statistics (HES) and the Office for National Statistics (ONS).
Clinical audit recap

- Ran in England and Wales, including patients who were assessed for PR between January and April 2015.

7,413 patients were included
(81% of those approached for consent)

210 PR services participated
(Out of 230 eligible)
Recap - completion of PR

Out of every **100 patients referred** to PR:

- **31** don’t attend an assessment
- **69** attend an assessment
- **10** don’t enrol
- **59** enrol onto PR
- **17** don’t complete PR
- **42** complete their PR
Recap - health status improvements

For every 100 patients who completed the 6MWT\(^A\) or the ISWT\(^B\) both at assessment and discharge:

- **63 improved** by more than the MCID\(^c\),
- **20 improved** but by less than the MCID, and
- **17 had no change** or a worse score.

\(^A\) Six minute walk test  
\(^B\) Incremental shuttle walk test  
\(^c\) Minimal clinically important difference
Health status improvements

For every 100 patients that had a health status test (either CAT\textsuperscript{A}, SGRQ\textsuperscript{B}, or CRQ\textsuperscript{C}) upon initial assessment and discharge:

- 61 improved by more than the MCID
- 13 improved but by less than the MCID
- 26 had no change or a worse score.

\textsuperscript{A} COPD Assessment Test  
\textsuperscript{B} St George's Respiratory Questionnaire  
\textsuperscript{C} Chronic Respiratory Questionnaire
Admission rates

- **19%** patients assessed for PR within 90 days.
- **30%** patients assessed for PR within 180 days.

**People with at least one admission within 180 days of PR assessment**

- **24%** people who completed PR.
- **38%** people who did not complete PR.
Causes of all admissions

Admissions within **90 days**

- COPD: 57%
- Pneumonia: 19%
- Other respiratory: 9%
- Cardiovascular: 8%
- Other: 7%

Admissions within **180 days**

- COPD: 60%
- Pneumonia: 19%
- Other respiratory: 7%
- Cardiovascular: 7%
- Other: 7%
Associations with admissions rates

Higher admission rates were associated with*:

- Increasing age
- More severe MRC score
- Increasing number of comorbidities
- Higher number of previous admissions

* P ≤ 0.001
Bed days for those that were admitted

Mean bed days in the 180 days following PR assessment for:

- Patients who completed their PR course was 4.8 days
- Patients who did not complete their PR course was 9.6 days

Overall, the mean number of bed days spent in hospital within 90 days was 5.5 and within 180 days was 7.3
Mortality within 90 days

Overall mortality following assessment for PR:

In patients who did not complete PR, mortality was 1.6%.

In patients who did complete PR, mortality was 0.1%.
Mortality within 180 days

Overall mortality following assessment for PR:

In patients who did not complete PR, mortality was 3.2%.

In patients who did complete PR, mortality was 0.5%. 
Mortality within 180 days

Higher mortality was associated with:

- Increasing age
- More severe MRC score
- Increasing number of comorbidities
- Higher numbers of previous admissions

* P < 0.001
Summary of key findings

• **Mortality** in the cohort was **very low**.

• Despite this, **admission rates** in the months following a PR assessment were **high**.

• The completion of a PR programme is **associated with lower admission rates** and a **reduction** in the number of **days spent in hospital**.

• Therefore, we make the following recommendations:
Recommendations

• There should be robust referral pathways and sufficient capacity for all eligible people.

• Patients and the public should be made aware of the benefits of attending and completing PR.

• Referrers and patients should be provided with clear information about the benefits of attending and completing PR.

• Commissioners should incentivise providers to enrol a higher proportion of patients (both those discharged from hospital and those in a stable state).
And so, what next?
Use QI methodology to plan a change

Look for areas where you can **realistically** make improvements.

Build a **team** and understand your **stakeholders**.
- Meet regularly to **performance manage** yourselves, and have **clear responsibilities**.

Plan how you will **achieve** your aim.

Aims should be **SMART**.

- **S**pecific
- **M**easurable
- **A**chievable
- **R**ealistic
- **T**ime bound
Driver diagrams

To decide what to start on for your overall improvement aim, you may find it helpful to use a driver diagram.

The Institute for Healthcare Improvement has a helpful guide on how to use them [http://www.ihi.org/resources/Pages/Tools/Driver-Diagram.aspx](http://www.ihi.org/resources/Pages/Tools/Driver-Diagram.aspx)
Driver diagrams – PR example

**AIM**
To increase the number of eligible patients being referred for and completing PR

**PRIMARY DRIVERS**
- Referrer and patient awareness of PR
- Easy to navigate referral pathways for PR
- Ease of patient access to PR services
- Use audit data feedback to drive referrals

**SECONDARY DRIVERS**
- Identify patients in primary and acute care who are eligible for PR
- Provide clear information on benefits of PR for referrers
- Provide clear information for patients about PR
- Enhance use of discharge bundles that include PR referral
- Develop system prompts to remind users to refer eligible patients
- Embed evidence or quality standards in prompts
- Streamline referral forms to remove unnecessary information and speed the process
- Ensure patients are assessed and enrolled within 3 months of referral
- Ensure sites are accessible by patient transport
- Ensure exercise prescription is individually tailored
- Ensure patient access is highlighted in accreditation metrics
- Real-time feedback of referral rates to referrers
- Real-time feedback of clinical outcomes and drop-out rates to PR programmes
- Develop commissioner incentives linked to referral and uptake rates to drive up referrals

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Model for improvement and PDSA cycles

To plan your change, it is important to regularly measure and study your activity using:

**Model for improvement**

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?
Quality Improvement

Starter for change: To provide clear information for patients about PR

**Plan:** Look at how well patients understand PR based on your current paperwork – is the text clear enough?

**Do:** Make changes based on your findings:
* Adapt the patient information sheet to make the benefits clearer for patients

**Study:** Plot the change over time.
* Do more patients understand PR? Speak to patients and get feedback.

**Act:** Identify gaps in your improvement & speak to those who can help
Quality Improvement

Starter for change: Identify patients in primary care who are eligible for PR

**Plan:** Investigate how many patients come for assessment having been referred by their GP.

**Do:** Make changes based on your findings:
- *Hold awareness raising meetings with the local GP surgeries and staff*

**Act:** Identify gaps in your improvement & speak to those who can help

**Study:** Plot the change over time
Useful QI resources

Respiratory Futures have a PR page http://www.respiratoryfutures.org.uk/programmes/pulmonary-rehabilitation/ and forum http://www.respiratoryfutures.org.uk/pulmonaryrehabforum

The British Thoracic Society page has useful resources and signposts https://www.brit-thoracic.org.uk/standards-of-care/quality-improvement/

The Institute for Healthcare Improvement (IHI) http://www.ihi.org has useful resources.

Healthcare Improvement Scotland also has a range of resources http://www.healthcareimprovementscotland.org/
National COPD Audit Programme

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