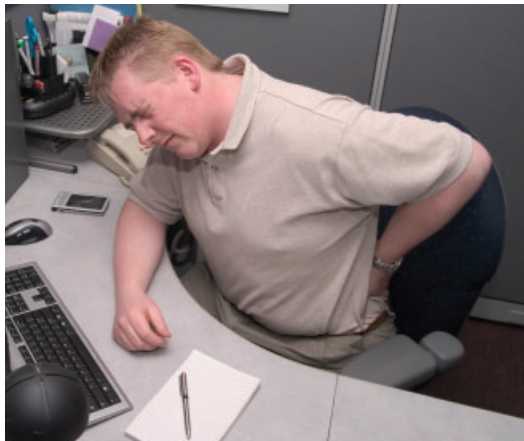


research



Effectiveness and safety of analgesics for low back pain p 439



Removal of financial incentives and quality of primary care in Scotland p 441

ORIGINAL RESEARCH Systematic review and network meta-analysis

Comparative effectiveness and safety of analgesic medicines for adults with acute non-specific low back pain

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Cite this as: *BMJ* 2023;380:e072962

Find this at doi: 10.1136/bmj-2022-072962

Study question What is the comparative effectiveness and safety of analgesic medicines for acute non-specific low back pain?

Methods Medline, PubMed, Embase, CINAHL, CENTRAL, ClinicalTrials.gov, clinicaltrialsregister.eu, and World Health Organization's International Clinical Trials Registry Platform were searched from database inception to 20 February 2022 for randomised controlled trials of analgesic medicines in adults (≥ 18 years) who had acute non-specific low back pain for less than six weeks. Primary outcomes were intensity of low back pain (0-100 scale) at end of treatment and safety (number of participants who reported any adverse event during treatment). A random effects

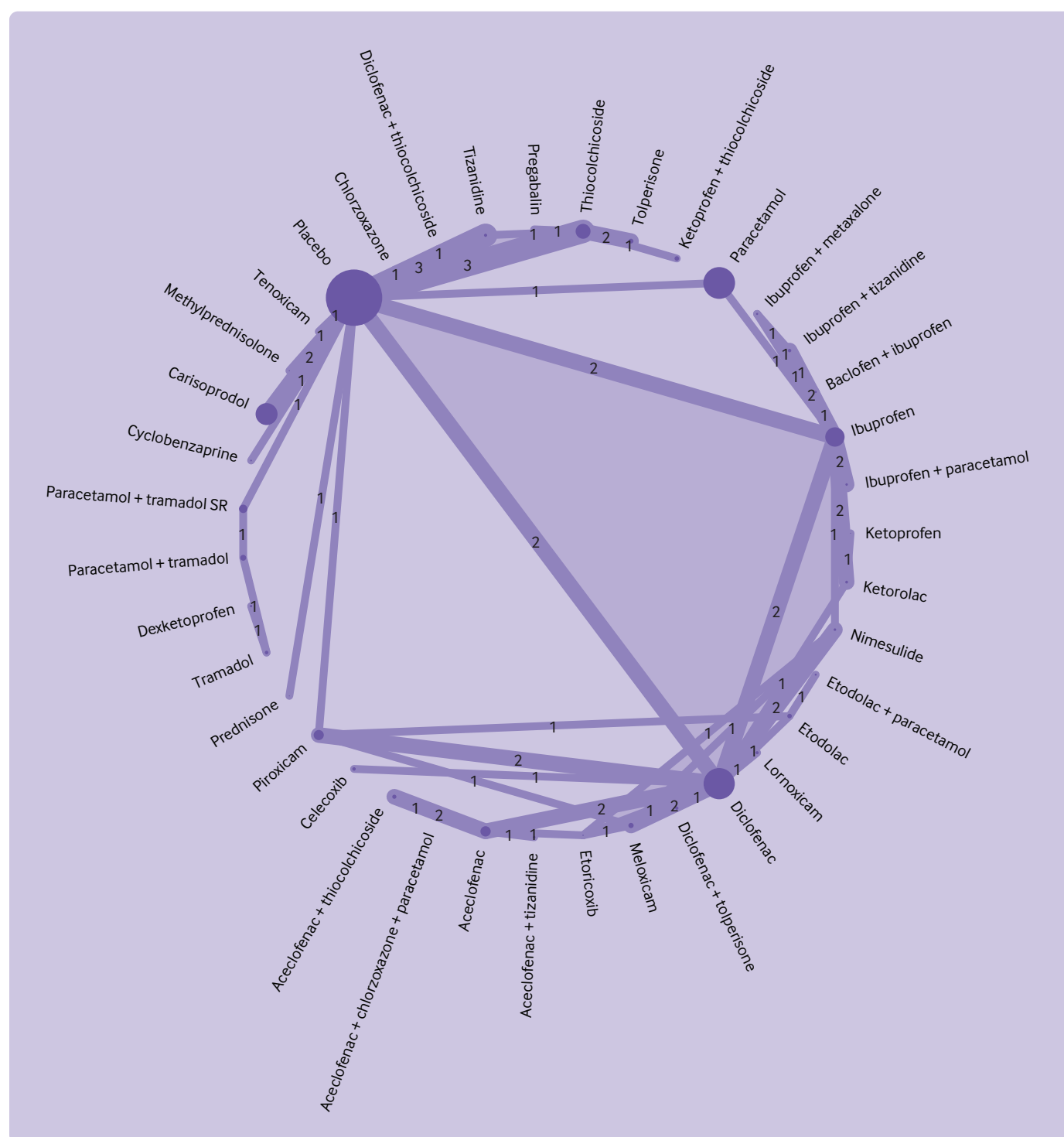
network meta-analysis was done and confidence was evaluated using the Confidence in Network Meta-Analysis method.

Study answer and limitations 98 randomised controlled trials (15 134 participants, 49% women) included 69 different medicines or combinations. Low or very low confidence was noted in evidence for reduced pain intensity after treatment with tolperisone (mean difference -26.1 (95% confidence interval -34.0 to -18.2)), aceclofenac plus tizanidine (-26.1 (-38.5 to -13.6)), pregabalin (-24.7 (-34.6 to -14.7)), and 14 other medicines compared with placebo. Moderate to very low confidence was noted in evidence for increased adverse events with tramadol (risk ratio

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Network plot for pain intensity for medicines for placebo network. Within each network, the node size is proportional to the sample size of each intervention and the line thickness is proportional to the number of trials in the comparison (also indicated by the numbers). Light purple shading indicates trials with more than two arms. Two trials did not connect to the network and were not included: hydrocodone plus ibuprofen versus oxycodone plus paracetamol, and etodolac plus thiolchicoside versus etodolac plus tolperisone. SR=sustained release

2.6 (95% confidence interval 1.5 to 4.5)), paracetamol plus sustained release tramadol (2.4 (1.5 to 3.8)), baclofen (2.3 (1.5 to 3.4)), and paracetamol plus tramadol (2.1 (1.3 to 3.4)) compared with placebo. Findings were limited by risk of bias in the trials.

What this study adds The comparative effectiveness and safety of analgesic medicines for acute non-specific low back pain are uncertain and a cautious approach to manage acute non-specific low back pain with analgesic medicines is recommended.

Funding, competing interests, and data sharing Study funding was provided by the University of New South Wales.

No competing interests declared.

Data available on request to the corresponding author.

Study registration PROSPERO CRD42019145257.

Quality improvement in primary care

ORIGINAL RESEARCH National controlled interrupted time series analysis

Estimated impact from the withdrawal of primary care financial incentives on selected indicators of quality of care in Scotland

Morales DR, Minchin M, Kontopantelis E, Roland M, Sutton M, Guthrie B

Cite this as: *BMJ* 2023;380:e072098

Find this at doi: 10.1136/bmj-2022-072098

Study question Did the withdrawal of primary care financial incentives in Scotland have an impact on selected recorded quality of care, compared with England where financial incentives continued?

Methods This controlled interrupted time series regression study used indicator data for Scotland and England from the pay-for-performance Quality and Outcomes Framework (QOF), which remunerates general practices for delivering good quality care to patients. Changes in quality of care were measured at one year and three years after withdrawal of QOF financial incentives in Scotland at the end of the 2015-16 financial year for 16 indicators (two complex processes, nine intermediate outcomes, and five treatments) measured annually for financial years from 2013-14 to 2018-19, with data from England used as a control.

Study answer and limitations A significant decrease in performance was observed for 12 of the 16 quality-of-care indicators in Scotland one year after QOF was abolished and for 10 of the 16 indicators three years after QOF was abolished, compared with England. At three years, the absolute percentage point difference between Scotland and England

was largest for recording (by tick box) of mental health care planning (–40.2 percentage points, 95% confidence interval –45.5 to –35.0) and diabetic foot screening (–22.8, –33.9 to –11.7). Substantial reductions were, however, also observed for intermediate outcomes, including blood pressure control in patients with peripheral arterial disease (–18.5, –22.1 to –14.9), stroke or transient ischaemic attack (–16.6, –20.6 to –12.7), hypertension (–13.7, –19.4 to –7.9), diabetes (–10.4, –13.0 to –7.8), or coronary heart disease (–12.8, –14.9 to –10.8), and for glycated haemoglobin control in people with HbA_{1c} levels ≤75 mmol/mol (–5.0, –8.4 to –1.5). No significant differences were observed between Scotland and England for influenza immunisation and antiplatelet or anticoagulant treatment for coronary heart disease three years after withdrawal of incentives. The limitations of the study were that few time points were available and that analysis was restricted to indicators that were implemented in both England and Scotland.

What this study adds Removal of financial incentives in Scotland was associated with reductions in recorded quality of care for most indicators. Changes to pay for performance should be carefully designed and implemented to monitor and respond to any reductions in care quality.

Funding, competing interests, and data sharing DRM was funded by a Wellcome Trust Clinical Research Career Development Fellowship.

See full paper on bmj.com for competing interests. English QOF data and Scottish QOF data pre-QOF withdrawal are publicly available. Scottish data after QOF withdrawal (transitional quality arrangements data) can be obtained from PublicHealth Scotland.

Multiple group interrupted time series regression analysis for each Quality and Outcomes Framework (QOF) performance indicator in Scotland compared with England			
Indicator	% (95% CI)		
	Change at 1 year post-QOF Scotland v England	Difference in trend post-QOF Scotland v England	Absolute difference between Scotland and England at 3 years
Complex processes			
Mental health care planning	–31.0 (–35.0 to –27.1)	–4.6 (–6.7 to –2.5)	–40.2 (–45.5 to –35.0)
Diabetic foot screening	–13.8 (–20.4 to –7.2)	–3.2 (–5.0 to –1.3)	–22.8 (–33.9 to –11.7)
Intermediate outcomes			
Blood pressure ≤150/90 mm Hg:			
Peripheral arterial disease	–12.5 (–15.6 to –9.4)	–2.7 (–4.5 to –0.8)	–18.5 (–22.1 to –14.9)
Stroke or transient ischaemic attack	–10.2 (–13.0 to –7.4)	–2.4 (–3.8 to –1.1)	–16.6 (–20.6 to –12.7)
Hypertension	–10.5 (–14.3 to –6.8)	–1.7 (–3.3 to –0.1)	–13.7 (–19.4 to –7.9)
Coronary heart disease	–8.0 (–9.7 to –6.3)	–2.2 (–3.1 to –1.2)	–12.8 (–14.9 to –10.8)
Diabetes	–6.2 (–8.2 to –4.1)	–1.7 (–2.8 to –0.5)	–10.4 (–13.0 to –7.8)
Blood pressure ≤140/80 mm Hg:			
Diabetes	–7.8 (–10.1 to –5.6)	–2.4 (–3.9 to –1.0)	–12.7 (–15.0 to –10.4)
HbA _{1c} (mmol/mol):			
≤75	–3.2 (–5.4 to –0.9)	–0.4 (–1.4 to 0.5)	–5.0 (–8.4 to –1.5)
≤64	–2.4 (–4.8 to –0.05)	–0.5 (–1.6 to 0.7)	–3.4 (–6.7 to –0.03)
≤59	–1.9 (–4.5 to 0.8)	–0.5 (–1.8 to 0.9)	–2.1 (–5.7 to 1.6)
Treatments			
Influenza immunisation:			
Stroke or transient ischaemic attack	–3.9 (–6.9 to –0.9)	–0.1 (–1.7 to 1.5)	–3.9 (–7.8 to 0.1)
COPD	–3.8 (–6.9 to –0.8)	–0.2 (–1.9 to 1.5)	–3.4 (–7.3 to 0.4)
Coronary heart disease	–3.2 (–6.3 to 0.03)	–0.2 (–1.8 to 1.4)	–3.2 (–7.6 to 1.2)
Diabetes	–3.3 (–6.9 to 0.2)	–0.01 (–1.8 to 1.8)	–2.4 (–7.2 to 2.5)
Antiplatelet or oral anticoagulation in coronary heart disease	–0.8 (–1.8 to 0.3)	–0.4 (–0.4 to –0.3)	–1.4 (–3.3 to 0.6)

CI=confidence interval; COPD=chronic obstructive pulmonary disease; HbA_{1c}=glycated haemoglobin.

Lessons from the end of QOF in Scotland

The Quality and Outcomes Framework (QOF) pay-for-performance scheme began in the UK National Health Service in the early 2000s.¹ Under a new contract, as much as 20% of general practices' remuneration was initially tied to the achievement of performance targets. Some targets focused on the delivery of particular care (such as foot screening of patients with diabetes), whereas others tracked proxy measures for clinical outcomes (such as targets for blood pressure or diabetes control). Twenty years on it is instructive to revisit the outcomes of the scheme, and the study by Morales and colleagues makes use of a natural experiment to explore what happens when pay for performance ends.²

QOF has been evaluated extensively, and the benefits are modest at best.³ Achievement was high from the start,⁴ and, although evidence suggested the scheme led to the narrowing of some inequalities in care quality,⁵ longer term evaluation was disappointing. A review 10 years after the inception of QOF found initial improvements in health outcomes for some conditions, but over time the outcomes reverted to pre-existing trends, with some evidence of adverse effects in non-incentivised conditions.⁶ Other studies concluded that QOF was not associated with improvements in mortality,⁷ and modelling has suggested that the scheme is not cost effective.⁸

Against this background, in 2016 the Scottish government agreed to remove QOF and add the associated funding to the core general practice contract.⁹ A new quality improvement approach was implemented, with general practices grouped into clusters, working together to improve quality of care.¹⁰ In their controlled interrupted time series analysis, Morales and colleagues explored what happened next. They found that documented performance against many QOF indicators fell significantly in practices in Scotland, compared with practices in England where QOF

It is too early to know whether this approach to quality improvement will bear fruit

had not been withdrawn. The effect was most pronounced in the process indicators that required affirmation by tick box, but also in clinical indicators such as attainment of blood pressure and diabetes control targets. Reassuringly, performance against those indicators recording delivery of evidence based care, such as vaccinations, held up well.

Interpreting these findings is complex. It is not known how far the initial achievements associated with QOF represented improvements in recording behaviour rather than true quality improvement.¹¹ Conversely, it is not always clear whether changes in performance reported by Morales and colleagues reflect changes in care recording or changes in care quality. Furthermore, recorded blood pressures can be influenced by target thresholds, with staff tending to preferentially record readings that closely match the target.¹² It is at least plausible that the decline in performance against blood pressure targets after QOF ended may simply reflect the removal of this bias.

The new study does, however, confirm previous work showing that the withdrawal of performance targets can be associated with a reduction in documented performance.¹³ This is important because most pay-for-performance schemes are modified over time—as indicators are removed and new ones added. If performance decreases whenever an indicator is removed, then the longer term value of such schemes may be limited.

Lower performance but higher satisfaction

More generally, Morales and colleagues' findings raise some interesting questions about what quality of care means in general practice. QOF represents a technocratic approach to quality, with indicators linked to population evidence, but it is relatively crude in terms of what can actually be measured and therefore incentivised,³

and the scheme has been criticised for its potential impact on doctor-patient relationships.¹⁴ The Scottish contract is positioned by those who negotiated it as a return to a more professionally led approach to quality, reducing bureaucracy and freeing up time for a more holistic approach to managing complex conditions.¹⁰

Recent evidence supports this approach—continuity of care is associated with benefits such as an overall reduction in mortality, reduction in hospital admissions, and reduced use of out of hours care.^{15 16} Quality clusters were established in Scotland in 2018,¹⁷ and their development was affected by the covid-19 pandemic. It is therefore too early to know whether this approach to quality improvement will bear fruit. While the drop in recorded performance may be concerning, the lack of evidence for long term effectiveness and cost effectiveness of pay for performance in primary care suggests that there is as yet no need to panic. General practitioners in Scotland surveyed immediately after the implementation of the new contract were more satisfied with their lot than those in England.¹⁸ How far those differences were driven by the changes to QOF is not clear, but in the midst of a recruitment and retention crisis this difference in satisfaction may warrant further exploration.

To fully understand the benefits and harms of different approaches to quality improvement, we must continue to collect all relevant data so the longer term effect of changes can be evaluated. Attention must also be paid to the delivery of quality improvement clusters in Scotland, drawing on what is known about quality improvement more generally. High quality managerial support, a systematic approach to considering performance, and the provision of holistic and joined up care are all likely to be important.¹⁹

Cite this as: *BMJ* 2023;380:p582

Find the full version with references at <http://dx.doi.org/10.1136/bmj.p582>

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