099: Comparing long-term effects and cost effects of two quality strategies to improve test ordering in primary care

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Objective:
The numbers of tests ordered by primary care physicians (PCP) are growing and many of these tests seem to be unnecessary according to established, evidence-based guidelines. We compared an innovative, multifaceted strategy aimed at improving test ordering routines of primary care physicians (PCPs) with a traditional feedback strategy. The test ordering strategy combined feedback, education on guidelines, and social influence by peers in quality improvement sessions in small groups. We evaluated the added value of the small peer group quality improvement meetings, and determined the costs and cost reductions of the two strategies.

Methods:
Cluster randomised trials were performed at the level of local primary care physician (PCP). 194 PCPs were organised into 27 local PCP groups in 5 regions with a diagnostic center. During the 6 months of the intervention, physicians discussed 3 consecutive, personal feedback reports on their test ordering in 3 small group meetings, related them to 3 evidence-based clinical guidelines, and made plans for change. In regular quality meetings in local groups PCPs discussed each others' test ordering behavior, related it to guidelines and made individual and / or group plans for change. The tests were related to 3 clinical problems: cardiovascular diseases, upper abdominal complaints and lower abdominal complaints.
Measurements: For the effect study the mean number of tests per PCP per six months at baseline and the PCPs' region were used as independent variables, and the mean number of tests per PCP per six months as the dependent variable. For the costs effect study, running costs, development costs, and research costs were calculated for the intervention period per PCP per six months. The mean costs of tests ordered per PCP per six months were assessed at baseline and follow-up.

Results:
The new strategy was executed in 13 PCP groups, while 14 groups received feedback only. Analysis of covariance showed that in the intervention arm the decrease in the mean total number of tests was far more substantial (on average 51 tests less per PCP per half year) compared with the feedback arm ($p=0.0049$). Five 'inappropriate' tests for the clinical problem ' upper abdominal complaints' decreased in the intervention arm with 13 tests more per PCP per 6 months than in the de-feedback arm ($p=0.0015$). Inter-doctor variation decreased more in the intervention arm. The strategy was found to cost €702.00, the feedback strategy €58.00. When including running costs only, the intervention was found to cost €554.70, compared to €17.10 per PCP per six months in the feedback arm. When excluding opportunity costs for the PCPs' time spent, the intervention was found to cost €92.70 per PCP per six months in the complete intervention arm. The mean costs reduction, that PCPs in that arm achieved by reducing unnecessary tests, was €144 larger per PCP per six months, than the PCPs in the feedback arm. ($p=0.048$).

Conclusions:
Compared to only disseminating comparative feedback reports to PCPs, the new strategy, involving peer interaction and social influence, improved the PCPs' test ordering behavior. In order to be effective, feedback needs to be integrated in an interactive, educational environment. On the basis of our findings, including the expected non-monetary benefits, we recommend further long-term effect and cost effect studies on the implementation of the quality strategy.