Patient compliance with telephone triage recommendations: a meta-analytic review
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CRD summary
This review of nurse-led telephone triage found that compliance was higher for advice to use self-care than to use emergency or office services. The authors concluded that telephone triage diverted patients with less acute symptoms from using inappropriate services. The lack of a comparison group in most studies and of cost data limit the usefulness of the review.

Authors' objectives
To investigate the extent to which patients follow triage advice given by nurses over the telephone and to identify factors that potentially influence compliance.

Searching
The authors searched PubMed, PsycINFO, The Cochrane Library and CINAHL for articles published in English between 1990 and 2010. Search terms were reported. Reference lists of retrieved papers were also screened for relevant studies.

Study selection
Studies were eligible if they assessed nurse-led telephone triage and advice services that served the general population and assessed patient compliance with the advice provided. Studies had to compare compliance with advice to use emergency services, use office services (such as visit a doctor or clinic) or perform self-care. Studies that focused on specialised services or secondary or tertiary care were excluded.

Included studies were mainly conducted in the USA or Canada with a few in Europe (one in the UK). Telephone services served general or paediatric populations and were mainly provided by general or after-hours/emergency call centres. Data on compliance were collected from archival records or by telephone interviews.

Two reviewers independently selected studies for inclusion; disagreements were resolved through discussion.

Assessment of study quality
Quality was assessed using 12 questions derived from the Critical Appraisal Skills Programme. Each question was scored on a 4-point scale (0 to 3) to give a score out of 36.

Two reviewers independently assessed study quality; disagreements were resolved through discussion.

Data extraction
Data were extracted to obtain overall rates of compliance with telephone advice and odds ratios for compliance with different types of advice. Two reviewers independently extracted data for the review; disagreements were resolved through discussion.

Methods of synthesis
Pooled odds ratios were calculated using a DerSimonian-Laird random-effects model. Statistical heterogeneity was assessed using Cochran's Q statistic. If heterogeneity was significant, prespecified subgroup analyses were performed to examine the effects of type of population served (general or paediatric), type of telephone triage service (after-hours or general), country (USA or non-USA) and methodological variables.

Results of the review
Thirteen studies with 140,497 participants were included. Three large studies provided most participants. Most studies used observational or survey data; one was a randomised controlled trial. Quality scores ranged from 29 to 35 (mean 31.7).

Overall, patients were more likely to follow advice to use self-care (78.9%) than to use emergency services (63.1%) or...
office services (44.1%). The differences between emergency care and office care (OR 2.68, 95% CI 1.77 to 4.04) and between self-care and office care (OR 3.30, 95% CI 2.18 to 4.99) were statistically significant. All the analyses showed significant heterogeneity. Reported reasons for non-compliance (three studies) included patients reporting a different recommendation from that reported in the system, changes in symptoms, lack of trust in the advice given and issues around access to services. Results of subgroup analyses were reported.

**Authors’ conclusions**
Patient compliance with triage recommendations was influenced by patient perceptions and the quality of provider communication, both of which were mediated by access to health services. The high rate of compliance with self-care recommendations suggested that telephone triage nurses were successful in diverting patients with less acute symptoms from using emergency services or visiting a general practitioner.

**CRD commentary**
The review question was clear and was supported by appropriate inclusion criteria for intervention, participants and outcomes. The search covered a range of relevant sources, but limitation to published studies in English meant some studies could have been missed. Appropriate methods were used to minimise reviewer errors and bias in the review process.

Study quality was assessed using what appeared to have been relevant criteria, but only summary scores were reported. The scoring system used and weighting all questions equally could have had the effect of inflating the scores of relatively poor quality studies. Standard methods were used for meta-analysis and assessment of heterogeneity.

The authors’ conclusions reflected the evidence presented. However, the lack of a comparison group in most studies and the absence of cost data limit the usefulness of the review for informing decisions about different ways of providing services.

**Implications of the review for practice and research**
*Practice:* The authors stated that there was a need to improve nurse-patient communication and that specific training in telephone communication skills should be considered.

*Research:* The authors recommended further research to understand whether non-compliance was due to poor communication by nurses or patient misinterpretation. They also recommended research to explore barriers to compliance within the health care system and to understand how study design and ways of measuring compliance may affect research findings.

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