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Title:

The cost-effectiveness of Nurse Practitioners providing out of hours primary care.

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Objectives:

In the Netherlands, out of hours primary care is currently organized in large scale organizations. The number of patients consulting these services have increased with 39% in the last ten years. It is expected that the pressure on family medicine will further increase, so it is relevant to come up with a solution. Although research has shown that nurse practitioners (NPs) provide equal safe care as General Practitioners (GPs), it is unclear if this is also true for out of hours care. Therefore, this study aims to assess the effects of substitution of care from GPs to NPs in an out of hours primary care setting.

Methods :

A quasi-experimental study is undertaken. "CHP Zuidoost Brabant" provides out of hours care for 304,000 people in the South East of the Netherlands. In the experimental condition patient care is provided by a team of 1 NP and 4 GPs during one day of the weekend from 10am to 5pm. In the control condition patient care is provided by a team



of 5 GPs during the other day of the weekend. The study was carried out from April 2011 to July 2012.

Data was collected on number of different outcomes using a range of different methods (not all reported); e.g. healthcare data were extracted from electronic medical records, patients satisfactions was measured with questionnaires and effect on GPs' workload was measured with questionnaires. Furthermore, the costs of care were assessed.

Emerging findings:

On the intervention- days 6,040 patients consulted the services (NP (n=987); GP (n=5,053) , on the control-days 6,025 patients.

70% of all NP consultation concerned complaints of skin (31.2%), musculoskeletal (22.2%) and airways (16.3%). The top three of most frequent complaints seen by GPs was comparable, although in the intervention group the prevalence of these complaints is slightly higher in the NP group.

On the intervention-days in 42.5% of the consultations drugs were prescribed, compared to 44.1% on control-days ($p < 0.01$). This difference is mainly due to less prescribing of drugs by NPs (37.1% compared to GPs intervention 43.0%, $p < 0.001$). On intervention-days 10.2% of patients were referred to emergency department, compared to 11.6% on control-days (not significant). However, comparison NPs with GPs intervention showed that NPs referred significant fewer patients (5.1% versus 11.3%).

On average NP consultations lasted 3 minutes longer compared to consultations with GPs. During the shift a NP saw on average 3 patients less compared to GP intervention (3.0 versus 3.5 patients, $p < 0.01$).

We also calculated 'theoretical' substitution ratio, on basis of diagnostics, NPs could see almost 83% of all patients consulting out of hours care, of which 93% are treated independently and in 7% a GP will be consulted.

Conclusions:

This study showed that NPs provided equal safe care compared with GPs. Both patients and colleagues were satisfied. Substitution of care had a favorable effect on the healthcare costs. Implementation problems, such as adequate financial structure, have to be address in order to deploy NPs on a large scale.

Trial registration: [ClinicalTrials.gov ID NCT01388374](https://clinicaltrials.gov/ct2/show/study/NCT01388374)

Financiers



Execution

