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### **Nurse practitioners as a response to future challenges in out-of-hours primary care and its impact on general practitioners' caseload**

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**Background & Aim:** With an aging population and an increasing demand for care, out-of-hours primary care faces serious challenges. Previous study showed that it was possible in terms of safety and quality of care to provide out-of-hours care by a team of 4 GPs and 1 Nurse Practitioner (NP) (Wijers, 2012). The purpose of this study is to give insight in the optimum skill-mix of GPs and NPs in teams providing out-of-hours primary care.

**Method:** A quasi experimental study was undertaken at one "general practitioner cooperative (GPC)" as follow-up of the previous study. In the first stage of the study care was provided by a team of 4 GPs in the control condition and 3 GPs and 1 NP in the experimental condition. In the second stage care was provided by a team of 2 GPs and 2 NPs. Quantitative data is derived from patient medical records. GPs' work satisfaction was explored by interviews.

**Results:** The 3 GPs-1 NP team more often prescribed drugs compared to the team with GPs only (44.2 vs 41.3 p=0.03). There were no differences in ordering X-rays between teams. The 2 GPs-2 NPs team significantly more often referred patients to the Emergency Department compared to team with GPs only (14.7 vs 12.0 p=0.03). GPs' caseload changed significantly per stage resulting in treating more urgent patients and more digestive complaints. Despite changes in casemix, there were only minor differences in GPs' productivity per hour and work satisfaction between stages.

**Conclusion:** This study shows that a team of 2 GPs and 2 NPs is feasible to deliver care during out-of-hours. GPs delivered care convenient for their level of expertise; less complex patients received treatment by NPs. The impact of skill-mix was of minor clinical relevance and may be a suitable response for future challenges in primary healthcare.