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Information Exchange Between General Practitioner and Nursing Home Physician in the Netherlands

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Background: In response to the specific characteristics of nursing home residents, the Netherlands has become the only country to develop the specialty of nursing home medicine. The "nursing home physician" has attained independent status. This development has, however, created a division between medical care in the community and medical care in nursing homes, which challenges the quality of the transitional processes taking place when a patient is admitted to or discharged from nursing home care.

Objectives: To give insight into the type of medical information exchanged between general practitioners (GPs) and nursing home physicians (NHPs) at the time of admission, while a patient is under care of the NHP, and at the time of discharge.

Methods: Questionnaires were sent to a sample of 780 GPs, who were selected using a 2-phase sample strategy. Three hypothetical patient vignettes, involving the admission of a patient to a nursing home, to day care, and to an outreaching nursing home care project, were constructed and presented in the questionnaire. GPs were asked to answer questions about the information exchanged during the care of a patient illustrated in each vignette only if they were really familiar with a patient such as presented. The advantage of hypothetical patient vignettes is that each physician reacts to a standardized situation.

Results: In the case of admitting a patient to or discharging a patient from the nursing home, results indicate that the continuity of care at those moments will be better ensured if GPs have more frequent personal contacts with NHPs. In the case of day care patients, the study also reveals that GPs who have frequent personal contact with NHPs will share relevant patient information significantly more often at the start of the day care program, both during day care and also when intercurrent medical problems occur. Similar findings can be expected in patients receiving outreaching nursing home care.

Conclusions: The findings indicate the advantages of personal contacts between different medical professionals in exchanging specific patient information. It can be expected that this will lead to more tailormade medical care for the patient. Adequate exchange of relevant information is an important aspect of mutual collaboration between professionals. Recommendations as to how to achieve more personal contact and a better collaboration among medical professionals are proposed.

The Dutch health care system is characterized by relatively sharp boundaries among community health care services, hospital services, and long-term care services. All 3 kinds of health care services have their own regulations and financing systems.[1]

The care for patients with chronic diseases and for the elderly disabled in the Netherlands also has a graduated structure: acute care in the hospital, chronic care at home by the home care services, and, where these agencies cannot meet the care needs anymore, in the nursing home. In line with this, the medical care is plotted along the following axis: the medical specialist in hospital, the general practitioner (GP) in the community, and the nursing home physician (NHP) in the nursing home.[1–3]

In most Western countries, medical care in nursing homes is provided by GPs or consulting specialists who attend patients in nursing homes intermittently.[4] Earlier studies, e.g., in Great Britain, have shown that caring for older people in nursing homes places major demands on GPs and often does not fit easily into the logistics of general practice.[5–13] This leads to extensive variations in homes' policies and local GP services and raises serious questions about the levels of GP service and about equity among residents within homes, among homes, and between those in homes and in the community.[14]

The specific characteristics of nursing home residents, such as the advanced age, a variety of comorbidities and disabilities, and the polypharmacy, have driven the need to develop a dedicated "nursing home physician" in the Netherlands,[3,15] which is currently the only country in the world where medical treatment for nursing home patients has attained independent status and moreover has become an official medical discipline. To become registered as an NHP, a specific 2-year residency training program in nursing home medicine has to be followed after graduating from medical school.

However, in providing optimal continuity of care for elderly patients, the structure of the Dutch health care system not only makes demands on the quality of transitional processes, taking place when patients move from one kind of health care service to another, but also on processes relating to interaction between various health care professionals.

Actual developments in chronic care stress the importance of this more and more. In fact, over the past 30 years, Dutch nursing homes have gradually developed into centers of expertise in chronic care for the elderly, which are becoming more and more useful in the community. This is particularly important because the capacity of nursing home beds will soon be inadequate for the projected numbers of frail elderly people. This reinforces the need to focus care where most elderly patients live (ie, in the community), and encourages nursing homes also to develop an outreaching role.

In the Netherlands today, nursing homes in general and NHPs in particular increasingly stress their contribution to the community-based care for the elderly by offering outreaching care and support, complementary to the community health care services at home.[16]

This additional service involves a variety of activities and in general includes support with regard to an adequate and integral disease-related as well as care-related patient assessment and the planning of proper treatment activities and continuing care services. More specifically it can involve outreaching support with regard to the following:

- the prevention and treatment of pressure ulcers;
- the prescription of medication and the prevention of polypharmacy;
- the prevention of fall accidents;
- the handling of problematic behavior in elderly patients;
- the prevention and treatment of malnutrition; and
- the prescription and use of helping aids to empower patient autonomy.

In nursing home outreaching care services, the NHP mostly acts as a consultant for the GP, who stays responsible for the patients involved. However, where GP and NHP agree that the NHP takes over part or total treatment, this responsibility moves to the NHP. It will be clear that, as a consequence of the growing outreaching activities of nursing homes, the relationships with GPs, community nurses, and others have become even more important for nursing home professionals.

This study is part of a larger research project on the cooperation between GPs and NHPs in the Netherlands. Since 1997, there have been a number of studies in the Netherlands of the cooperation between GPs and NHPs. Research data indicate that closeness of cooperation between the GP and NHP in the Netherlands depends on a number of factors: the degree of urbanization of the region in which they work together, the extent to which agreement can be reached about methods of cooperation, the importance attached to cooperation, and whether they want to spend time on it.[17,18]

In this study we aim to give insight into the kind of medical information exchanged between GPs and NHPs. To do this, we focus on patients admitted to the nursing home, to nursing home day care, and on nursing home outreach projects. In the first setting (the nursing home) the NHP is primarily responsible for the medical care; in the second and third, the GP is primarily responsible for the medical care, while the NHP in most cases provides additional and complementary medical care.

The following questions were addressed:

1. What kind of information do GPs and NHPs exchange when:
   a. a patient is admitted to a nursing home?
   b. a patient is admitted to a day care program in the nursing home?
   c. a patient in a residential home receives nursing home outreaching care?
2. Is information exchanged between GPs and NHPs related to the frequency of patient care contacts?

METHODS

Sample

GPs were selected using a 2-phase sample. In the first phase, all medical chiefs of 220 nursing homes in the Netherlands providing care for somatic (ie, with physical diseases) patients as well as psychogeriatric (ie, demented) patients were sent a questionnaire.[17] They were asked for a statement on the frequency of case-discussion contacts between NHPs and GPs. Almost all nursing homes (212 nursing homes, response rate 96%) returned a completed questionnaire. In this first phase, we selected all nursing homes (n _ 104) that, next to regular care, also offered day care as well as outreaching nursing home care. In fact, NHPs were expected to collaborate with GPs, not only with regard to admitted patients, but also with regard to patients they shared at the same time (patients in day care and outreaching care). From these 104 nursing homes, we randomly selected 2 groups of 20 nursing homes: 20 nursing homes with frequent contacts between NHPs and GPs (ie, NHPs discussed cases with GPs at least once a month) and 20 nursing homes with few contacts between NHPs and GPs (ie, NHPs only discussed shared cases a few times per year with GPs). This was done to get enough variation between participating nursing homes on the number of NHP-GP contacts. The nursing homes were matched in terms of the degree of urbanization of the region.[18]

In the second phase, we randomly selected 20 GPs in the catchment area of each of the 40 nursing homes selected in total. Because some nursing homes in rural areas did not have 20 GPs in their catchment area, the total sample existed of 780 GPs.

Respondents

To investigate the exchange of information, we sent a questionnaire to the 780 GPs in the sample. We received 249 completed questionnaires (response rate 31.9%): 124 GPs working in a nursing home catchment area having little contact with NHPs and 125 GPs working in a nursing home catchment area with frequent contacts. There was no statistically significant difference (P _ .05) between GPs who responded and GPs who did not, with respect to sex, age, type of practice (solo, duo, group), years of experience as a GP, and level of urbanization.

Questionnaire

Three hypothetical patient vignettes, involving the admission of a patient to a nursing home, to day care, and to an outreaching nursing home care project, respectively, were constructed to examine the

kind of information exchanged. The vignettes were developed by NHPs and reflect quite common situations. After the development of the vignettes, several representative NHPs judged the validity of whether they reflected "common" situations and tested the questions. These experts verified that the hypothetical patient vignettes indeed reflected familiar situations. The 3 vignettes are described in Appendix 1.

The advantage of hypothetical patient vignettes, by comparison with observations or reviews of real patient records, is that each physician reacts to a standardized situation. Several studies support the validity of vignettes for the measurement of how professionals perform in medical practice.[19,20]

In the study, after a vignette had been presented, the GPs were first asked whether they actually had experience with such a patient. Only GPs having such experience were asked about the exchange of information. GPs who never had such patients skipped this vignette. Vignette 1 (admission of a patient to a nursing home) was answered by 231 GPs, vignette 2 (a patient in nursing home day care) was answered by 202 GPs, and vignette 3 (a patient receiving outreaching nursing home care in a residential home) was answered by 126 GPs. These different numbers of answering respondents can be explained by the fact that not all responding GPs had experience with all 3 kinds of patients as presented in the vignettes. This especially counts for patients receiving outreaching nursing home care, because outreaching nursing home care has developed rather recently. In any case, the respondents did not find the survey onerous, because they all answered the questions that came after the section of the patient vignettes.

Following each vignette, a number of questions were asked about the content of the interaction between GP and NHP. Questions were asked about the following:

- the medium of information exchange (written and oral) For example, *Do you send your medical record to the nursing home? Do you contact the nursing home physician about this patient?*
- the kind of information exchanged. For example, *Do you discuss the medication the patient uses? Do you discuss the patient's disabilities?*
- the way in which the GP is involved in the treatment of patients by the nursing home physician. For example, *Do you receive information about the care plan of the patient? Are you invited to the multidisciplinary meetings in the nursing home?*

After each question the following 5-point scale was presented: never, in a quarter of these cases, in half of these cases, in more than half of these cases, and always.

Analyses

The answers were transformed into dichotomous items: "in half of these cases or fewer" versus "in more than half of these cases." GPs are likely to act as specified when they answer "in more than half of these cases." Differences between the 2 groups of GPs were tested with Fisher exact tests, using SPSS for Windows (version 10; SPSS Benelux BV, Gorinchem, The Netherlands). The number of respondents within the nursing home catchment areas varied between 2 and 13. To give each area an equal weight in the results, the data were weighted.

RESULTS

Admission to the Nursing Home

In the hypothetical case of the admission of the cerebrovascular accident patient (patient 1) almost all GPs (98– 99%) sent the medical record of the patient to the NHP (Table 1). Only 18% to 23% were likely to have personal contact with the NHP in more than half of the cases. If a GP had a personal contact, he or she most often discussed the patient's medical history and medication. They rarely discussed the proposed intended treatment (2–6%).

[TABLE 1]

When the patient returns home, most GPs receive a letter of discharge (82–90%) and they are also likely to receive the date of discharge, as well as information necessary for appropriate continuing follow-up treatment (such as information about the postdischarge medication and the medical treatment as well as the community care required after discharge).

In general, no statistically significant differences were found between the 2 groups of GPs. In the case of discharge, however, GPs with frequent contacts with NHPs were more often informed in time and knew more about the care required from community health care professionals when the patient returned home ($P < .10$).

Day Care

When a patient starts to attend the day care program in a nursing home (patient 2), again most GPs (72–82%) are likely to send the medical record to the nursing home physician (Table 2). Only 16% to 38% of the GPs are likely to have personal contact in more than half of the cases. If GPs do so, they discuss a variety of topics ranging from the medical history, the current diagnosis, problems, and the care from other community professionals, to the likely option of staying at home. GPs in the frequent contact areas certainly have significantly more personal contacts with the NHP and an increased exchange of this kind of information.

[TABLE 2]

Of the GPs, 19% to 31% are likely to be informed about the treatment during day care. GPs in frequent contact areas are more likely to be informed about the treatment ($P < .10$). Of the GPs, 14% to 15% are informed about changes in treatment. In frequent contact areas, GPs are invited to multidisciplinary meetings significantly more often: 20% against 4% in no contact areas. If the patient suddenly becomes severely ill, there are differences in GPs' reports about their behavior. GPs in frequent contact areas are more likely to ask whether the patient can be admitted (temporarily) to the nursing home, or to consult the NHP on the further treatment, if admission is not possible due to shortage of beds.

Outreaching Nursing Home Care

In the case of patients receiving outreaching nursing home care (patient 3), most GPs are not likely to have personal contact with the nursing home physician regarding the patients involved (Table 3). General practitioners in the frequent contact areas, however, are significantly more likely to discuss the patient's situation and they are also more likely to discuss the extra outreaching treatment the patient will receive ($P < .10$). Most GPs will treat these patients by following the advice of the NHP, but GPs in frequent contact areas will be even more likely to follow the advice of the NHP (87% versus 57%). They are also invited to the multidisciplinary meetings more often.

[TABLE 3]

Most GPs (64% to 73%) are willing to give their medical records to the NHP. Of the GPs, 37% to 39% are involved in decisions to stop current treatment of outreach care services, if necessary (eg, if admission to a nursing home is finally necessary).

DISCUSSION

In this study we looked at the information GPs and NHPs exchange when a patient is admitted to a nursing home, to nursing home day care, or is going to receive extra complementary outreaching nursing home care in his or her own living environment. The relevance of this study derives from the fact that medical care in the community and medical care in nursing homes are distinct entities in the Netherlands. This has caused extra demands to be placed on the quality of the transitional process if a patient moves from community care to nursing home care, or vice versa.

In the case of admitting a patient to the nursing home, in which case the NHP will take over total responsibility for the integral medical treatment from the GP, we can conclude that GPs almost always support this admission by putting their medical records at the NHP's disposal. However, only a minority of GPs have personal contact with the NHP if a patient is admitted. This is a challenge for NHPs, in getting the desired extra information from the GP. After all, because of the complex profile of most nursing home patients and because of the far-reaching cure or care decisions that sometimes have to be made shortly after admission, it would be better if NHPs and GPs had personal contact at

the time of admission. The GP has often known the patient for many years and is well informed about the context in which he or she is living. Therefore the GP can provide the NHP with essential basic information that may not be documented in the medical record, but which is nevertheless very important, as it will enable the nursing home to provide the patient with medical care that is both necessary and meaningful.

When the patient is discharged, most GPs receive a letter of discharge from the NHP. Again, this study reveals that the continuity of care at that moment is better ensured if GPs have more frequent personal contact with NHPs. GPs are better informed then with regard to the appropriate follow-up treatment, which is important, since they take over medical care from the NHP again. With respect to day care patients, where both GP and NHP are involved in the medical care of the patient, it has become clear too that GPs who have frequent personal contact with NHPs significantly more often share relevant patient information and harmonize the patient's treatment. Similar findings are observed in patients receiving outreaching nursing home care.

A focus for criticism with regard to this study could be the response rate of 31.9%. In fact, however, this response may be considered as normal, following this type and extent of questionnaires. Most important is the fact that there was no statistically significant difference between GPs who responded and GPs who did not with respect to relevant factors. So we may conclude that the actual response rate has not influenced the results of our study in a major way.

This study on the one hand reveals that most GPs and NHPs in the Netherlands still work rather apart from each other and in most cases only share written information. On the other hand, however, the results also indicate that more frequent and of course relevant personal contacts between GPs and NHPs about patients can improve the quality and quantity of information exchange.

Improving medical care through optimizing the exchange of information and collaboration is a real challenge. Given the nature of clinical medicine, one would expect collaboration to be a normal operational principle. Instead, difficulties with collaboration and information exchange are exemplified daily. To an extent, this follows from health care culture. Physicians are generally trained to be fully independent in thought and action; they often do not view themselves as being dependent on others in the provision of care.[21] As health care focuses increasingly on quality, the advantages of collaborative behavior are becoming clearer.[22]

Examples of improved practice exist, but hitherto they have not been evidence-based and are, moreover, poorly described and disseminated.[23] A MEDLINE search on collaboration gives a lot of literature describing practices that should or should not be implemented, but little is written about how to do or not to do things.[23–27] All this demonstrates the need for improved knowledge and use of cooperative and collaborative skills in health care and also justifies the relevance of this study.

The question arises as to how to achieve more personal contact and a better collaboration by exchanging relevant patient information among medical professionals? While information technology may facilitate some of the solutions, it may be concluded that a culture change, which moves health care professionals to give a much higher priority to sharing patient information, is required.

Primarily, it would seem logical to pay more attention to information exchange, as well as collaboration, among different medical professionals, in basic medical training programs, as well as in the training programs of the different medical disciplines.[15,28] Studies also mention positive effects from models of mutual medical consultation, which allow different professionals to meet one another in a more structured framework and understand the characteristics of one another's work.[29] Benefits have been described, too, from organizing combined postgraduate courses for different medical professionals and from developing medical guidelines together.

Finally, this study again stresses the importance of paying extra attention to a better information exchange between health care professionals. We are convinced of the fact that this will help to build meaningful relationships between professionals. Last but not least, however, it will help us to improve patient care.

TABLES

Table 1. *Interactions Between GP and NHP in the Clinical Vignette of Admission Into a Nursing Home (Patient 1); n = 230*

Admission Into a Nursing Home, % of GPs Who Are Likely to:	GPs in Areas With Little Contact (n = 111), %	GPs in Areas With Frequent Contact (n = 119), %	*P* Value (2-sided)
At admission			
Send the medical record to the nursing home	99	98	.623
Have personal contact with the nursing home physician	18	23	.417
Discuss the prognosis	9	16	.107
Discuss the neurological damage and the care that is necessary	8	13	.270
Discuss the patient's medical history	26	30	.554
Discuss the medication the patient uses	24	25	.878
Discuss the medical specialists the patient visits	12	18	.266
Discuss support of family, friends	13	17	.460
Discuss possibilities of returning home again	15	21	.231
Discuss the treatment the patient will receive in the nursing home	2	6	.173
At discharge			
Receive a letter of discharge	82	90	.101
Be informed about a future date of discharge, in time	53	78	<.001
Be informed about what had happened during admission	62	65	.679
Be informed about required medical care	51	64	.057
Be informed about the required care from other professionals	50	66	.015
Be informed about medication	70	75	.454
Be informed about the expected problems	38	50	.101

Table 2. *Interactions Between GP and NHP in the Clinical Vignette of Day Care Within a Nursing Home (Patient 2); n = 202*

Day Care Within a Nursing Home, % of GPs Who Are Likely to:	GPs in Areas With Little Contact (n = 96), %	GPs in Areas With Frequent Contact (n = 106), %	*P* Value (2-sided)
At the start of the day care			
Send the medical record to the nursing home	72	82	.118
Have personal contact with the nursing home physician	16	38	.001
Discuss the cognitive impairments	14	41	<.001
Discuss the behavioral impairments	15	40	<.001
Discuss the results of diagnostic tests	15	40	<.001
Discuss medication for the agitation at night	15	36	.001
Discuss the patient's medical history	20	41	.002
Discuss the medication the patient uses	22	44	.001
Discuss the medical specialists the patient visits	15	33	.005
Discuss support of family, friends	16	32	.012
Discuss options of professional home care	14	30	.009
Discuss options of staying at home	19	38	.004
Be informed about the treatment the patient will receive	19	31	.073
During day care			
Be informed about changes in treatment	14	15	.999
Be invited to multidisciplinary meetings	4	20	.001
When the patient becomes severely ill during the period of day care			
Ask whether the patient can be admitted to the nursing home in cases of sudden deterioration	27	58	<.001
If admission is not possible, discuss further treatment	30	59	<.001

Table 3. *Interactions Between GP and NHP in the Clinical Vignette of Outreaching Nursing Home Care (Patient 3); n = 126*

Outreach Nursing Home Care in a Residential Home, % of GPs Who Are Likely to:	GPs in Areas With Little Contact (n = 59), %	GPs in Areas With Frequent Contact (n = 68), %	*P* Value (2-sided)
At the start of the care			
Discuss the results of the diagnostic screening tests	16	25	.193
Discuss the cognitive impairments	18	36	.027
Discuss the behavioral impairments	19	39	.020
Discuss medication for the behavioral impairments	21	42	.020
Discuss the patient's medical history	24	30	.548
Discuss the medical specialists the patient visits	16	21	.493
Discuss the options of staying in the residential home	14	32	.032
Discuss support of family, friends	11	29	.015
Discuss options of professional care in a residential home	9	23	.049
Discuss the need to participate in the project	12	40	.001
Discuss the treatment the patient will receive	12	25	.073
During the care			
Treat in accordance with the nursing home physician's advice	57	87	<.001
Be invited to multidisciplinary meetings	7	30	.002
Give the medical record to the nursing home	64	73	.330
Be involved in decisions to stop the current treatment	37	39	.999

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APPENDIX 1

Patient Vignettes

Patient 1. Admission to Nursing Home

Mr A was until recently a rather healthy man, 82 years of age. He had only been to his GP before to have his blood pressure checked. Three weeks ago, however, he was admitted to hospital after an ischemic stroke in his right cerebral hemisphere. In the meantime, the paralysis on the left side was slightly improved.

Despite this, the neuropsychological symptoms and his dependency, with regard to the activities of daily living, made it impossible for him to leave the hospital and go home again at present. The burden of care would be too great for his wife. Moreover, his 3 children lived too far away and the professional home care services could not meet his current care needs.

Therefore, he was admitted to the nursing home for a rehabilitation program. After this program, he will be able to return to his own home again.

Patient 2. Admission to Nursing Home Day Care

Mrs B was 76 years of age and suffered from gradually increasing cognitive impairment, as a result of Alzheimer's dementia. She had coped well with her problems. She had received tremendous support from her husband and additional help from the home care services.

At this time however, her situation became aggravated. She needed supervision and control continuously and showed symptoms of sundowning behavior at the end of the day. Her husband could not leave her alone anymore, and because his options for relief and relaxation as well as those for simple shopping were gradually disappearing, he was going to decompensate increasingly. Nevertheless, he wanted to keep his wife with him at home as long as possible.

Accordingly, a care program offering respite care, during the day, was indicated. In agreement with her GP, this care program was offered by admitting Mrs B to a nursing home day care facility. She was to attend this day care program 3 days a week.

After Mrs B had attended day care for about 6 months, it became clear that her cognitive impairment and her independency were getting worse. Therefore, by way of precaution, she was placed on the waiting list for a future admission to the nursing home and the visiting frequency of day care arose.

A few weeks later, Mrs B suddenly became ill, showing symptoms of delirium. She was admitted to the nursing home for temporary crisis intervention. Assessment of the patient revealed that she had a urinary tract infection, with secondary symptoms of a delirium. Antibiotic treatment of her infection and treatment with haloperidol for her delirium led to improvement of her condition. Two weeks later, Mrs B was discharged from the nursing home and she continued the day care program in the nursing home.

Finally, 3 months later, she was admitted to the nursing home for permanent stay.

Patient 3. Participation in the Outreaching Nursing Home Care Program

Mrs C was 84 years of age and living in a residential home for a few years. The nursing home in the neighborhood had started an outreaching care program in this residential home, in which inhabitants with dementia get extra complementary care and support.

Mrs C had had dementia for 2 years. Her progressive "complaining" behavior previously led to treatment with a low dose of a neuroleptic medicine. In the beginning, the results were acceptable, but later on her situation deteriorated. In agreement with the nursing home, her GP arranged her participation in the outreaching care program of the nursing home. After a thorough assessment by the nursing home physician and the nursing home psychologist, she started to participate in the project. She seems to enjoy it, especially the extra attention she gets.