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Original Study

Physician Treatment Orders in Dutch Nursing Homes

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A B S T R A C T

Keywords:

Physician treatment order
advance care planning
nursing home
long-term care facility
resuscitation
palliative care

Objectives: Physician treatment orders (PTOs) prevent burdensome unnecessary medical treatment of frail nursing home patients. The aim was to determine the prevalence of PTOs and time duration between nursing home admittance and PTO completion.

Design: Population-based, retrospective cohort study.

Setting: Nursing homes across the Netherlands.

Data Collection: Digital medical records of patients who subsequently were submitted to 14 Dutch nursing homes across The Netherlands were studied between 2010 and 2013. The prevalence's of do-resuscitate, do-not-resuscitate, life-sustaining, and palliative care PTOs and the time intervals between nursing home admittance and documentation of PTOs were measured. Information regarding demographic patient characteristics, type of nursing home ward, and mention of a discussion of PTOs with the patient or caregivers was obtained.

Results: Eighty-two percent of the nursing home patients received a PTO regarding resuscitation, life-sustaining, or palliative care treatment. Twenty-four percent of the patients received a do-resuscitation PTO, 55% received a do-not-resuscitate PTO, 44% a life-sustaining PTO, and 16% a palliative care PTO. The median duration between nursing home admittance and documentation of the first PTO was 1 day. Most nursing home patients had PTOs within 1 week after admittance.

Conclusion: A minority (18%) of Dutch nursing home patients has no documented PTOs during their nursing home stay, which could have negative effects on end-of-life care of nursing home residents.

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Elderly patients admitted to a nursing home are very vulnerable and generally have a limited life expectancy.^{1–4} As a consequence, careful consideration of the desirability of future medical interventions is necessary. Advance care planning (ACP) is often advocated as a means to come to decisions about future medical care.⁵ ACP refers to the continuous process of the patient and the caregiver making shared decisions on future care, in the event of the patient becoming incapable of consenting to or refusing treatment or other care.⁵ Several studies have shown a positive effect of ACP on end-of-life care, with fewer hospitalizations, better patient and family satisfaction, higher concordance between patient's previous preferences and treatments received, and less distress of kin.^{6–8} The ultimate goal of ACP is to adjust the medical care to the preferences and life goals of the patient.⁹

Dutch elderly care physicians (formerly known as nursing home physicians), who have their principal site of practice in the nursing

home, are experts in geriatric palliative care and consider ACP as a cornerstone of high-quality care for the vulnerable patient group of nursing home residents. In the Netherlands, elderly care medicine is an officially registered medical specialist, requiring a 3-year post vocational training in geriatric palliative care, geriatric rehabilitation, and medical care for patients with complex multimorbidity.¹⁰

Because most older people have no documented ACP before nursing home admission,¹¹ elderly care physicians consider it their responsibility to engage their patients, or their family caregiver in case of incapacity, in ACP discussions. The results of these discussions are documented in the patients' medical record, otherwise known as physician treatment orders (PTO). According to a professional guideline developed by the Dutch association of elderly care physicians in 1997 and updated in 2006 in collaboration with professional organizations of nurses and nurse assistants, PTOs are classified in several categories, all being adapted from the original 1990 World Health Organization definition of palliative care.^{12–14} These include PTOs regarding life-sustaining treatment, including cardiopulmonary resuscitation, PTOs that focus on quality of life as the main outcome of medical care, and PTOs that focus exclusively on comfort care, allowing no place for life-prolonging effects of medical interventions. The latter two PTOs are classified as palliative PTOs. They include a

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do-not-resuscitate (DNR) order as well as a do-not-hospitalize order. For more details, see Hertogh 2010.¹³ These treatment orders are to be reassessed regularly and revised if necessary, as part of the process of proactive caregiving. However, little is known about adherence to this professional guideline in nursing homes.¹⁴ Therefore, this study aimed to assess the degree of PTO implementation in daily clinical practice of Dutch long-term care facilities, by estimating the prevalence of PTOs and time duration between admittance to a nursing home and subsequent completion of PTOs.

Methods

Study Population

We selected 7375 patients who were newly admitted to a psychogeriatric ward (dementia special care units), a somatic ward (people with complex multimorbidity and without relevant or dominant cognitive impairment), or an inpatient rehabilitation nursing home unit (geriatric rehabilitation) from August 2010 until November 2013. This study population was structurally selected using the Dutch electronic patient medical record system (Gerimedica), containing 26,329 registered in- and outpatients of 14 residential and nursing home care organizations across the Netherlands. We excluded registered patients with no medical file module in use in Gerimedica ($n = 11,893$), extramural patients or patients receiving hospice care ($n = 1838$), and patients who were admitted before the census period ($n = 5223$) (Figure 1). The following patient characteristics were obtained: age, sex, marital status, type of nursing home care received (psychogeriatric, somatic or rehabilitation care), length of stay until discharge, death, or census date (Table 1).

Data Collection

Data were obtained on the basis of the extant electronic patient record system, which contained the following prestructured options: (1) resuscitation or withholding of resuscitation, (2) life-sustaining PTO, (3) palliative PTO. If no prestructured options were filled in, we searched for any mention of these options in the free text comment fields. We also recorded the frequency of explicit documentation of the discussion of PTOs with the patient or representative. The number of days between nursing home admittance and subsequent completion of the physicians' orders was calculated.

Analysis

Differences in frequency of PTOs among the 3 types of nursing home wards (psychogeriatric, somatic, or rehabilitation ward) were analyzed using the χ^2 test. Differences of $P < .017$ were regarded significant (Bonferroni correction, $P = .05/3$). Differences in duration between admittance and subsequent documentation of PTOs between the nursing home wards were analyzed by the nonparametric Mann Whitney U test (significance level $P < .017$ Bonferroni corrected). Using backward conditional elimination, multivariate logistic regression analyses were made to determine the contribution of the demographic characteristics in explaining the prevalence of PTOs.

Results

The mean age of the study population ($n = 7375$) was 78.6 years. Sixty-five percent were women and close to 25% were married at the time of nursing home admittance (Table 1). Overall, the frequency of documentation of PTOs regarding resuscitation, life-sustaining treatment, and palliative care was 82%. Those patients who had no

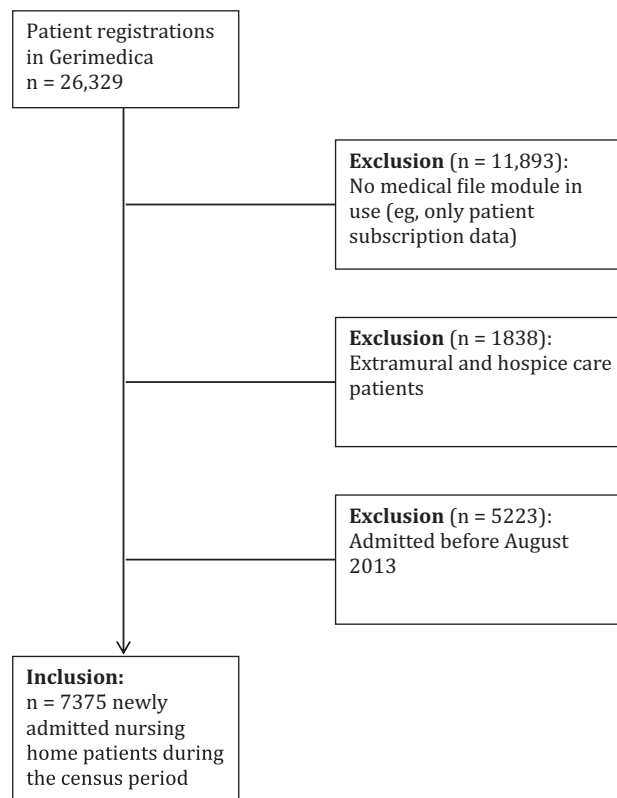


Fig. 1. Selection of study sample.

documentation of PTOs were found to be significantly younger (median age 78 years versus 81 years, $P < .0005$), and were more often married (37% compared with 33%, $P = .009$), but did not differ in gender (37% male compared with 35%, $P = .20$ of patients with documented PTOs). The percentage of documentation of PTOs was significantly lower in the rehabilitation ward compared with the psychogeriatric or somatic wards (79% versus 85% and 87%, $P < .017$) (Table 2).

PTOs Regarding Resuscitate and DNR Orders

Twenty-four percent of patients had a do-resuscitate order, 55% a DNR order, whereas the remaining patients (21%) did not have a PTO specified with regard to resuscitation. The frequency of DNR orders was 77% on the psychogeriatric ward, 73% on the somatic ward, and 44% on the rehabilitation ward. Logistic regression analysis showed that the chances of having a do-resuscitation PTO diminished with higher age and/or being admitted to a long-stay nursing home ward (either somatic or psychogeriatric), and increased when there was explicit documentation that a discussion of the PTO had taken place with the patient or care giver (Table 3). The median time span between admittance and documentation of resuscitation orders was 1 day and the interquartile range was 1–7 days. Close to 75% of all patients had a PTO regarding resuscitation within 6 weeks (Table 2).

PTOs Regarding Life-Sustaining and Palliative Treatment

Sixty percent of all patients possessed documented PTOs regarding either life-sustaining (44%) or palliative treatment (16%), as opposed to the remaining patients (41%) who possessed no such PTOs. Patients admitted to a psychogeriatric or somatic ward had the highest frequency of palliative orders (34% and 28%, respectively),

Table 1
Patient Characteristics

Patient Characteristics	Psychogeriatric Ward	Somatic Ward	Rehabilitation Ward	Total
No. of patients	1724	814	4837	7375
Age, y ^{*,†,‡}				
Mean (SD)	82.8 (8.1)	79.8 (11.4)	76.8 (11.2)	78.6 (10.9)
Gender [*]				
Female, n (%)	1158 (67.2)	506 (62.2)	3107 (64.2)	4771 (64.7)
Marital status, n (%)				
Married	440 (26)	182 (22)	1088 (23)	1710 (23)
Unmarried	182 (11)	134 (17)	1008 (21)	1324 (18)
Widow(er)	600 (35)	237 (29)	1194 (25)	2031 (28)
Registered partnership	12 (0.7)	5 (0.6)	16 (0.3)	33 (0.4)
Unknown	490 (28)	256 (31)	1531 (32)	2277 (31)
Duration of stay until discharge, death or census date Nov 2013 ^{*,†,‡}				
Median in days	169	126	42	58
P25–p75 in days	79–281	46–263	18–79	24–149
Status of patients at census date, n (%)				
Discharged	316 (18)	227 (28)	3631 (75)	4174 (57)
Deceased	321 (19)	222 (27)	359 (7.4)	902 (12)
Inpatient stay	1087 (63)	365 (45)	847 (18)	2299 (31)

*Significant difference between the psychogeriatric and somatic residential care group ($P < .017$).

†Significant difference between the psychogeriatric residential and rehabilitation care group ($P < .017$).

‡Significant difference between the somatic residential and rehabilitation care group ($P < .017$).

whereas rehabilitation ward patients had the lowest frequency (6.9%). The differences in percentages among the 3 wards were all statistically significant (Bonferroni corrected $P < .017$). Logistic regression analysis showed that the chance of having a life-sustaining PTO decreased with higher age and/or being admitted to a long-stay nursing home ward and increased when the PTO had been discussed with the patient or caregiver (Table 3). The median duration between admittance and completion of PTOs regarding life-sustaining and palliative treatment of all patients was 2 days and the interquartile range was 1–13 days. Sixty-three percent of all patients received PTOs regarding medical treatment within 6 weeks. The period of time between admittance and documentation of PTOs

differed significantly among the 3 groups of nursing home patients (Table 2).

Discussion

The aim of this study was to assess the degree of PTO implementation in the daily clinical practice of Dutch long-term care facilities. We found that most patients admitted to Dutch nursing homes received initial PTOs regarding life-sustaining or palliative medical treatment and PTOs regarding resuscitation or withholding of resuscitation within 6 weeks after admission. Notwithstanding the fact that our findings point to a high documentation rate of PTOs in the nursing home, a significant minority had no documented PTOs. Patients who did not have a PTO were generally younger, more often married, and admitted to a rehabilitation ward. The relatively short length of stay of patients admitted to a rehabilitation ward might have led to fewer opportunities for elderly care physicians to engage their patients in advance treatment discussions and document PTOs.

The finding that many initial PTOs are not documented immediately after admission to a nursing home (Table 2) is in line with another study performed in the United States.¹⁵ In the Netherlands no guidelines exist as of yet with regard to the optimal time duration between nursing home admission and initiating ACP and PTO completion. The official guideline about ACP of the Royal College of Physicians of the United Kingdom recommends that “[...] professionals should avoid initiating discussions immediately after a move into a care home; discussions should be undertaken once individuals are more settled.”¹⁶ According to our findings, common practice in Dutch nursing homes seems to conform to this recommendation, although the elderly care physicians in our study documented only in 37% of the PTOs that they actually discussed their PTOs with the patient or caregiver. This does not rule out that the remainder of PTOs were not discussed with the patient or caregiver.

A representative nursing home population-based study in Belgium found a lower estimated prevalence of PTOs (52% vs 82%) compared with this study, and also lower percentages of DNR orders (29% vs 55%) as opposed to higher palliative care PTOs (27% vs 16%).¹⁷ A similar study, which solely focused on psychogeriatric nursing home residents living in Belgium, also reported a lower prevalence of

Table 2
Documented PTOs

Nature of the PTO	Psychogeriatric Ward n = 1724	Somatic Ward n = 814	Inpatient Rehabilitation Ward n = 4837	Total n = 7375				
PTOs	1474	85%	710	87%	3839	79%	6023	82%
Do-resuscitate ^{*,†,‡}	117	6.8%	95	12%	1579	33%	1791	24%
DNR	1325	77%	593	73%	2133	44%	4051	55%
Life-sustaining ^{*,†,‡}	524	30%	352	43%	2350	49%	3226	44%
Palliative treatment orders	588	34%	229	28%	332	6.9%	1149	16%
No documented PTOs ^{†,‡}	250	15%	104	13%	998	21%	1352	18%
Explicit mention that the PTO was discussed with the patient/caregiver	595	35%	329	40%	1769	37%	2693	37%
Duration between admittance and PTO completion regarding resuscitation in days								
Median ^{*,†,‡}	6		3		1		1	
p25–p75	1–36		0–22		0–3		0–7	
within 1 d	478	28%	304	37%	2306	48%	3088	42%
within 1 wk	810	47%	471	58%	3327	69%	4608	62%
within 6 wk	1169	68%	576	71%	3686	76%	5431	74%
Duration between admittance and PTO completion regarding life-sustaining or palliative treatment in days								
Median ^{*,†,‡}	10		4		1		2	
p25–p75	1–52		1–36		0–4		0–13	
within 1 d	343	20%	226	28%	1670	35%	2239	30%
within 1 wk	579	34%	364	45%	2330	48%	3273	44%
within 6 wk	1243	72%	616	76%	2777	57%	4636	63%

*Significant difference between the psychogeriatric and somatic residential care group ($P < .017$).

†Significant difference between the psychogeriatric residential and rehabilitation care group ($P < .017$).

‡Significant difference between the somatic residential and rehabilitation care group ($P < .017$).

Table 3
Logistic Regression Models Explaining PTOs

Logistic Models	Life-Sustaining PTO* (Palliative PTO = 0, Life-Sustaining PTO = 1) n = 4372			Resuscitation PTO† (DNR PTO = 0, Do-resuscitate PTO = 1) n = 5838		
	Beta	P	OR (95% CI)	Beta	P	OR (95% CI)
Constant	5.5	<.0005		5.4	<.0005	
Age, y‡	−0.047	<.0005	0.95 (0.95–0.96)	−0.075	<.0005	0.93 (0.92–0.93)
Admission to a long-stay nursing home ward	−1.8	<.0005	0.17 (0.14–0.19)	−1.7	<.0005	0.18 (0.15–0.21)
Explicit mention that the PTO was discussed with the patient/caregiver	0.53	<.0005	1.7 (1.5–2.0)	0.17	.009	1.2 (1.0–1.3)

CI, confidence interval; OR, odds ratio.

*Nagelkerke's $R^2 = 26.3\%$.

†Nagelkerke's $R^2 = 30\%$.

‡OR per year.

PTOs (59% vs 85% in our psychogeriatric study population).¹⁸ The difference in frequency of psychogeriatric patients who had a DNR order was even more pronounced (36% vs 77% in our psychogeriatric study population), whereas the prevalence of palliative treatment PTOs was quite similar (33% vs 34%).¹⁸ This would seem to point to a different practice of withholding resuscitation of nursing home patients between Belgium general practitioners and Dutch specialized elderly care physicians, the latter group being primarily responsible for medical care and work on-site in the nursing home in the Netherlands.^{10,19}

Compared with the Netherlands, the prevalence of PTOs in nursing homes in the United States seems to vary regionally. For instance, a nationwide study of American nursing homes reported a frequency of DNR orders of 66% and 6% do-not-hospitalize PTOs, which were stable from 2003 to 2007.²⁰ However, a large nursing home population-based study in the southeast of the United States in 2010 yielded a frequency of only 28% DNR orders and 3.4% had a do-not-hospitalize order implying a palliative treatment order,²¹ which is considerably lower than both the reported nation wide prevalence's of DNR and palliative care PTOs in the US and our findings in The Netherlands. Thus, the frequency of PTOs in nursing homes varies in the literature, which might reflect the heterogenic population and variable policies, but also ethical and cultural practices.

Finally, the completion rate of PTOs (82%) of the nursing home patients in this study is even higher than the 70% implementation rate of an advance care directive program of participating Canadian nursing homes in a randomized clinical trial.⁷ This finding clearly suggests that the relevance of documenting PTOs in Dutch nursing homes is generally acknowledged and well implemented in daily clinical practice. This high documentation rate of PTOs in the Netherlands can be explained by the fact that the Netherlands has trained elderly care physicians working on-site in Dutch nursing homes, as opposed to other countries.^{10,19,22} Furthermore, this might also explain the low rate of hospital admission of nursing home patients in the Netherlands and the fact that 92% of all patients with dementia die in the nursing home setting as opposed to the hospital.²³

Strengths and Limitations

The present study represents a large representative sample of Dutch elderly patients who were admitted to nursing homes across the Netherlands, using a specific electronic patient record system designed for nursing home care supported by the University Medical Center of Amsterdam. This meant that we were able to study all PTOs

of nursing home patients without the need for additional surveys, which have the concomitant risk of socially desirable answers and recall bias when documenting PTOs. However, because of the temporary nature of inpatient rehabilitation care and the high turnover, as well as the limited time interval of this study (August 2010–November 2011), rehabilitation patients were moderately overincluded during the study period.

Unfortunately, no reliable information was available regarding the number of PTOs based on ACP discussions before nursing home admission. In addition, no qualitative information was gathered on how physicians decide to formulate PTOs and whether shared decision-making with patients and caregivers was implemented. The effectuation of the physician's orders also could not be observed. Despite this limitation, we were able to demonstrate to what extent prevailing guidelines and best practices stressing the need for documenting PTOs were translated into the documentation of PTOs in daily clinical practice in Dutch nursing homes.

Conclusion

This study has found that most patients admitted to Dutch nursing homes had documented PTOs regarding life-sustaining or palliative treatment and regarding resuscitation within 6 weeks after admission, although a considerable minority of nursing home patients had no such PTO. The absence of a PTO might have a negative impact on end-of-life care for the patient.⁸ Qualitative research, including interviews with patients, representatives, and physicians, might shed more light on the process of formulating PTOs and the degree of shared decision-making, but also could help identify cultural values influencing decision-making and the reasons why some nursing home patients do not receive PTOs despite the recommendations of current clinical guidelines and best practices in the field of elderly care medicine and geriatrics. Ideally, such research would also give insight into the educational needs of health professionals to discuss end-of-life issues, resuscitation, and treatment orders with their patients and caregivers.

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References

1. Hjaltdóttir I, Hallberg IR, Ekwall AK, et al. Predicting mortality of residents at admission to nursing home: A longitudinal cohort study. *BMC Health Serv Res* 2011;11:86.

2. Sutcliffe C, Burns A, Challis D, et al. Depressed mood, cognitive impairment, and survival in older people admitted to care homes in England. *Am J Geriatr Psychiatry* 2007;15:708–715.
3. Flacker JM, Kiely DK. Mortality-related factors and 1-year survival in nursing home residents. *J Am Geriatr Soc* 2003;51:213–221.
4. Dale MC, Burns A, Panter L, et al. Factors affecting survival of elderly nursing home residents. *Int J Geriatr Psychiatry* 2001;16:70–76.
5. Mullick A, Martin J, Sallnow L. An introduction to advance care planning in practice. *BMJ* 2013;347:f6064.
6. Detering KM, Hancock AD, Reade MC, Silvester W. The impact of advance care planning on end of life care in elderly patients: Randomised controlled trial. *BMJ* 2010;340:c1345.
7. Molloy DW, Guyatt GH, Russo R, et al. Systematic implementation of an advance directive program in nursing homes: A randomized controlled trial. *JAMA* 2000;283:1437–1444.
8. Houben CH, Spruit MA, Groenen MT, et al. Efficacy of advance care planning: A systematic review and meta-analysis. *J Am Med Dir Assoc* 2014;15:477–489.
9. Sudore RL, Fried TR. Redefining the “planning” in advance care planning: Preparing for end-of-life decision making. *Ann Intern Med* 2010;153:256–261.
10. Koopmans RT, Lavrijsen JC, Hoek JF, et al. Dutch elderly care physician: A new generation of nursing home physician specialists. *J Am Geriatr Soc* 2010;58:1807–1809.
11. Rurup ML, Onwuteaka-Philipsen BD, van der Heide A, et al. Frequency and determinants of advance directives concerning end-of-life care in The Netherlands. *Soc Sci Med* 2006;62:1552–1563.
12. Hertogh CM, Ribbe MW. Ethical aspects of medical decision making in demented patients. A report from the Netherlands. *Alzheimer Dis Assoc Disord* 1996;10:11–19.
13. Hertogh CM. Advance care planning and palliative care in dementia. In: Hughes JC, Lloyd-Williams M, Sachs GA, editors. *Supportive Care for the Person With Dementia*. Oxford: Oxford University Press; 2010. p. 271–280.
14. Begrippen en zorgvuldigheidseisen met betrekking tot de besluitvorming rond het levenseinde in de verpleeghuiszorg [Definitions regarding careful decision making at the end of life of nursing home patients.] AVVV – Verenso - Sting 2006. Available at: http://www.palliatief.nl/pallupload/docs/begrippen_en_zorgvuldigheidseisen_mbt_besluitvorming_rond_het_levenseinde_in_de_verpleeghuiszorg_maart_2006_-_beleid.pdf. Accessed February 9, 2015.
15. Araw AC, Araw AM, Pekmezaris R, et al. Medical orders for life-sustaining treatment: Is it time yet? *Palliat Support Care* 2014;12:101–105.
16. Royal College of Physicians, National Council for Palliative Care, British Society of Rehabilitation Medicine, British Geriatrics Society, Alzheimer's Society, Royal College of Nursing, Royal College of Psychiatrists, Help the Aged, Royal College of General Practitioners. *Advance care planning. Concise Guidance to Good Practice series, No 12*. London: RCP; 2009.
17. De Gendt C, Bilsen J, Stichele RV, et al. Advance care planning and dying in nursing homes in Flanders, Belgium: A nationwide survey. *J Pain Symptom Manage* 2013;45:223–234.
18. Vandervoort A, van den Block L, van der Steen JT, et al. Advance directives and physicians' orders in nursing home residents with dementia in Flanders, Belgium: Prevalence and associated outcomes. *Int Psychogeriatr* 2012;24:1133–1143.
19. Hertogh CM. Advance care planning and the relevance of a palliative care approach in dementia. *Age Ageing* 2006;35:553–555.
20. Temkin-Greener H, Zheng NT, Xing J, et al. Site of death among nursing home residents in the United States: Changing patterns, 2003–2007. *J Am Med Dir Assoc* 2013;14:741–748.
21. Lu CY, Johantgen M. Factors associated with treatment restriction orders and hospice in older nursing home residents. *J Clin Nurs* 2011;20:377–387.
22. Helton MR, Pathman DE. Caring for older patients: Current attitudes and future plans of family medicine residents. *Fam Med* 2008;40:707–714.
23. Houttekier D, Cohen J, Bilsen J, et al. Place of death of older persons with dementia. A study in five European countries. *J Am Geriatr Soc* 2010;58:751–756.