Leemrijse, C.J., Swinkels, I.C., Veenhof, C. Direct access to physical therapy in the Netherlands: results from the first year in community-based physical therapy. Physical Therapy: 2008, 88(8), 936-946

Postprint Version	1.0
Journal website	http://www.ptjournal.org/cgi/content/full/88/8/936
Pubmed link	http://www.ncbi.nlm.nih.gov/pubmed/18566108
DOI	10.2522/ptj.20070308

Direct access to physical therapy in the Netherlands. Results from the first year in community based physical therapy.

C. J. LEEMRIJSE[1,2] I.C.S. SWINKELS[1] C. VEENHOF[1]

1 NIVEL, Netherlands Institute for Health Services Research, The Netherlands
2 Corresponding author: C.J. Leemrijse PO box 1568 3500 BN Utrecht The Netherlands
31-030-2729692 C.Leemrijse@nivel.nl

ABSTRACT

Background: In 2006, direct access to physical therapy was introduced in the Netherlands. Before this policy measure, evaluation and treatment by a physical therapist were only possible following referral by a physician.

Objective: The objectives of this study were to investigate how many patients use direct access and to establish whether these patients have a different profile than referred patients.

Methods: Electronic health care data from the National Information Service for Allied Health Care (LiPZ), a nationally representative registration network of 93 Dutch physical therapists working in 43 private practices, were used.

Results: In 2006, 28% of the patients seen by a physical therapist came by direct access. Patients with non–further-specified back problems, patients with nonspecific neck complaints, and higher-educated patients were more likely to refer themselves to a physical therapist, as were patients with health problems lasting for less than 1 month. Younger patients made more use of direct access. In addition, patients with recurring complaints more often referred themselves, as did patients who had received earlier treatment by a physical therapist. Patients with direct access received fewer treatment sessions. Compared with 2005, there was no increase in the number of patients visiting a physical therapist.

Limitations: Data came only from physical therapists working on general conditions in general practices. Severity of complaints is not reported.

Conclusions: A large, specific group of patients utilized self-referral, but the total number of patients seen by a physical therapist remained the same. In the future, it is important to evaluate the consequences of direct access, both on quality aspects and on cost-effectiveness.

INTRODUCTION

Since 2006, the Netherlands has had a new health care system.[1] The need for this revision was determined by the increasing demands on health care. The roles of patients, insurance companies, health care providers, and the government changed in order to ensure the future accessibility of health care, financial feasibility, and quality of care. The patient's role is becoming more central as patients now have more opportunities to choose the best available care provider for their health problems and are explicitly encouraged to do so by the government. Within the scope of this changing health care system and enlarged freedom of choice, direct access to physical therapy was introduced in 2006.

The current study was conducted to investigate the effects of the first year of direct access. Internationally, direct access has been under discussion for some time, and it is established in Australia, New Zealand, most states of the United States, Canada, and the United Kingdom.[2–4] However, direct access is not uniformly implemented, and reimbursement conditions vary.[5] In the Netherlands, direct access to physical therapy means that evaluation and treatment by a physical therapist is possible without referral by a physician. Most Dutch health care insurers reimburse physical therapists for direct access without restrictions.

Both proponents and opponents of direct access are found in the Netherlands. Arguments in favor of direct access to physical therapy can be divided into advantages for patients, physical therapists, and physicians. The greater freedom of choice and improved and faster access to physical therapy are seen as the main advantages for patients.[6–8] Furthermore, direct access both acknowledges and increases the professional responsibility and challenge for physical therapists, as they now make independent decisions about further patient management. Finally, direct access decreases the workload of general practitioners (GPs) because a proportion of patients with musculoskeletal disorders or complaints will go directly to a physical therapist without consulting their physician first.[6] Before 2006, 90% of patients of physical therapists in the Netherlands were referred by their GP and 10% were referred by a medical specialist.[9]

However, opponents feared missed pathology due to physical therapists' supposed inadequate knowledge of diagnostic strategies and decreasing communication between GPs and physical therapists.[8,10,11] Furthermore, health care insurers especially feared an increase of patients receiving physical therapy after the abolition of the gatekeeper role of the GP. Therefore, several studies were performed before direct access was legalized. Following a feasibility study in 2001,[12] a pilot study was carried out in a specific region in order to acquire actual experience with direct access.[13] This pilot study made clear that direct access leads to satisfaction not only for patients but also for physical therapists and GPs. Based on the findings of the feasibility study and the pilot study, it was recommended that physical therapists should obtain additional education in diagnostic decision making before introducing direct access.[14] Although physical therapists in the Netherlands are not trained to make a medical diagnosis, they should be able to make a proper differential or physical therapy diagnosis through adequate interpretation of signs and symptoms. Following the recommendations, Dutch physical therapists completed mandatory postgraduate education in 2005. The most important topic of this education was the ability to detect relative and absolute contraindications for physical therapy, the so called "yellow flags" and "red flags." Furthermore, formalization of the communication and cooperation between physical therapists and GPs was an important issue.

Direct access to physical therapy has been possible for more than a year now, and thus it is time to evaluate the initial results. The following research questions were addressed in this study:

1. What percentage of patients make use of direct access to physical therapy?
2. Are patients who use direct access different from patients referred by a physician in regard to demographic characteristics, features of their health problem, and the duration and effects of their physical therapy treatment?

3. Has the population of patients seen by physical therapists changed after introduction of direct access?

METHOD

Sample

For this study, we used data from the National Information Service for Allied Health Care (LiPZ). The LiPZ is a nationally representative registration network of Dutch physical therapists working in private practices all over the country.[15,16] In early 2001, randomly selected extramurally working (community-based) physical therapists were invited to participate in the registration network. Those physical therapists were a sample of therapists from all private physical therapist practices as listed in a national database.[17] Selection was based on practice size and region. Specialized physical therapists with a homogeneous patient population (>50% of the treatment episodes belonging to one patient category), such as pediatric physical therapists or therapists mainly treating patients with sports injuries, were not eligible. On the basis of a power calculation, it was estimated that 40 practices would supply sufficient data to detect a difference of 2 treatment sessions between 2 different clusters of patients, with a proportion of at least 3.5% of the total patient population with 90% statistical power and a .05 significance level.

For the present study, the network consisted of 43 practices with 93 physical therapists. A relative over-representation of male therapists was found. For age, year of graduation, hours working, type of practice, region, and urbanization, no differences were found between the therapists in the LiPZ network and the Dutch population of extramurally working physical therapists (Tab. 1).

[TABLE 1]

Data Collection

In the LiPZ network, data related to electronic health care are collected on patients, referral, diagnoses, treatment, and evaluation (Tab. 2). Data are collected through the regular software program used to record patients, treatment, and reimbursement. In this program, a special module is installed to register supplementary information on all patients. The selection of the data is based on the Dutch physical therapy guideline for clinical reporting, a guideline that specifies the data that are relevant for physical therapist practices. Participants of LiPZ submit their data on a monthly basis, and the data are entered in the database after a standardized quality control check for missing or inconsistent data.

[TABLE 2]

In case of referral by a physician, the reason for referral, as given in writing by the referrer, is registered by the physical therapist at the first contact. These reasons are coded by the researchers according to the *International Classification of Primary Care* (ICPC).[18] In case of direct access, the main health problem, as described by the patient, is registered by the physical therapist and coded into ICPC terms by the researchers. At the final contact, the physical therapist registers the reason for discharge according to the applicable codes for reimbursement. The reasons for discharge, as specified in the data collection software program, are: treatment completed and goals achieved, treatment ended on patient's initiative, treatment ended on physical therapist's initiative, reimbursement ended, reimbursement changed, one-time consultation, patient moved, patient died, "other," and "unknown." In addition, the physical therapist evaluates to what extent treatment goals were attained (not achieved, 25% achieved, 50% achieved, 75% achieved, or fully achieved). For answering the first 2 research questions, only data from patients who applied in 2006 were taken into account. For analyzing differences in patient population after the introduction of direct

access, only data from practices that fully participated in the LiPZ in 2005 and 2006 were used.

Data Analysis

Data were analyzed with SPSS 14.0.[*] For a number of cases, information on the mode of access was missing, mainly due to a delay in the development of the software. We checked whether these missing data could have biased the results. Patients for whom mode of access (referred versus direct access) was known were compared with patients for whom this information was missing. In this analysis, sex, age, level of education, diagnosis, duration of the health problem, whether it was a recurring health problem, and earlier treatment were taking into account using chi-square tests.

To analyze differences in characteristics between patients who were seen by a physical therapist via direct access and patients who were referred by their physician, multivariate logistic regression (method enter) was carried out. Before performing this regression analysis, correlations among all factors that were to be included in the model were calculated in order to check for covariation. For the differences in the number of treatment sessions between the 2 patient groups, multivariate linear regression (method enter) was used. To analyze the difference in treatment sessions, only data from patients who received further treatment after the initial intake were used. Data from patients who received their initial screening within a time span of 30 days until the end of the registration period and who had not yet received treatment were left out the analysis. This criterion of 30 days was chosen because it is assumed that, in most cases, treatment will start within 30 days after screening. Before this period has finished, it cannot be decided whether patients have been treated.

A number of missing sets of data for the regression analyses emerged because not all factors taken into account to investigate the differences between patients using direct access and referred patients were filled in completely by the physical therapists. Data were missing for level of education, duration of the complaint, recurrent health problem, and earlier treatment. To check whether these missing data biased the results, regression analysis was carried out with 2 dummy groups: unknown level of education and unknown duration of complaint. Furthermore, the categories of recurrent health problem and earlier treatment were changed from "yes" versus "no" to "yes" versus "no/unknown." Differences in discharge data were analyzed using chi-square tests, followed by Mann-Whitney *U* tests to locate the differences. Treatment outcome was not filled in for every patient. Data also were analyzed by including these missing data into the category no/unknown" in order to check for bias. On the outcome measure, differences in the patient population between 2006 and 2005 were investigated with chi-square tests for the characteristics of the patients and with a paired *t* test for the volume.

RESULTS

Proportion of Patients Using Direct Access

In 2006, records of 12,369 patients were entered into the database (Figure). For a group of 1,859 patients, information on the mode of access was missing. With the exception of education level, no differences were found on other characteristics of the data between the samples with mode of access known versus mode of access unknown. Most missing data on the mode of access emerged in January through April.

[FIGURE 1]

In total, data on 10,510 patients who were treated by physical therapists in 2006 could be used for the study. On average, 28.4% of these patients made use of direct access. By January 2006, 21.7% of the patients were seen by a physical therapist without first consulting a physician, and this percentage gradually increased during the year to 32.5% in December.

Demographic and Health Characteristics of Patients Using Direct Access

No significant covariations larger than 0.34 were found among the several factors that were entered into the regression models. Patients who had referred themselves differed significantly from patients who were referred by their physician, based on age, level of education, and the characteristics of their health problem (Tab. 3). The type of health problem and the patients' level of education were found to be the strongest predictors of use of direct access. Patients with non–further-specified back problems (coded in ICPC terms), patients with nonspecific neck complaints (coded in ICPC terms), and higher-educated patients were more likely to refer themselves to a physical therapist compared with patients with other health problems and lower-educated patients. Furthermore, patients with health problems existing for less than 1 month opted more often for visiting a physical therapist without consulting a physician first compared with patients with conditions that lasted for longer than 3 months. Younger patients were more likely than older patients to make use of direct access. Patients with recurring health problems referred themselves more often compared with patients with a new health problem. Patients who had received earlier treatment by a physical therapist also referred themselves more often compared with patients who had not been treated previously by a physical therapist. The same results were found when the data were analyzed with a correction for missing data.

Differences in Treatment and Treatment Outcome

Of the patients who were referred to a physical therapist by a physician, 3.4% did not receive further treatment after the initial intake compared with 9.8% of the patients with direct access. Patients who referred themselves for physical therapy treatment received fewer treatment sessions (average=8.1, SD=6.6) than patients who were referred by their physician (average=10.5, SD=8.9). Adjusted for demographic characteristics and features of the health problem, patients with direct access received, on average, 2.3 fewer treatment sessions than patients who were referred by their physician ($P<.001$), and the reasons for discharge differed significantly by the mode of access (Tab. 4).

[TABLE 4]

For patients who made use of direct access, the reason for discharge was more often that treatment was finished because the treatment goals were achieved (87.4%) compared with patients referred by their physician (78.5%, $P<.001$). Additionally, according to the physical therapists, treatment goals were more often fully achieved for patients with direct access than for referred patients (72.5% versus 63.3%, $P<.001$). However, the reasons for discharge and the achievement of treatment goals are dependent on the features of the health problem. Therefore, we also analyzed differences within 3 subgroups of patients that were most frequently found: patients with (in terms of the ICPC) nonspecific cervical complaints, patients with nonspecific low back pain, and patients with non–further-specified back problems. For patients with low back pain, there was no relationship between the mode of access and the reason for discharge or achievement of treatment goals. However, direct access patients with non–further-specified back problems were more often discharged because the treatment goals were achieved compared with referred patients with the same complaints ($P<.01$). Furthermore, physical therapy care less often ended on the patient's initiative for the direct access group with non–further-specified back problems, and treatment goals were more often fully achieved ($P<.01$). For patients with neck problems who referred themselves, treatment goals were achieved to a greater extent compared with patients with neck problems who were referred by their physician ($P<.01$). In conclusion, the direction of the differences found in discharge data was comparable in these 3 subgroups of patients.

Change in Volume and Type of Patients Among the Patient Population

To check whether the patient population has changed after the introduction of direct access, data from 2005 were compared with data from 2006. In 2006, there was no increase in the

total number of patients treated by physical therapists (*P*=.608). The composition of the patient population, however, changed slightly. In 2005, one third (38.6%) of the patients had complaints that existed for less than 1 month, whereas in 2006, 40.8% of the patients had these short-lived problems (*P*<.01). Smaller differences were found for the variables of sex, health conditions presented, the number of recurrent complaints presented, and the number of patients who received earlier physical therapy treatment. In 2005, 41.8% of the patients were male; this percentage diminished to 40.1% in 2006 (*P*<.01). In 2005, 12.2% of the patients had nonspecific low back pain compared with 13.2% in 2006 (*P*<.01). The number of patients with recurrent problems increased from 33.2% in 2005 to 34.9% in 2006 (*P*<.01), while the proportion of patients who received earlier treatment increased from 45.2% to 47.1% (*P*<.01).

DISCUSSION

The aim of this study was to establish how many, and which, patients make use of direct access to physical therapy in the Netherlands. In addition, we investigated whether the population of patients seen by physical therapists changed because of this new mode of access. We found that, although many patients visited a physical therapist without the referral of a physician, direct access did not result in increased use of physical therapy services. However, patients who referred themselves to a physical therapist had a different profile from that of patients who were referred by their GP.

Yet, in the first year after the introduction of direct access to physical therapy, more than one quarter of all patients made use of this mode of access. Apparently, freedom of choice, which was seen as an important advantage of direct access for patients, satisfies a need. The proportion of patients found choosing direct access exceeds expectations, and data from international studies, where figures for direct access ranging from 9% in Massachusetts[19] to 22% in Scotland,[20] have been reported. The low rate of direct access found in Massachusetts was explained by employer policies and lack of reimbursement.[19] Holdsworth et al[20] reported the results of a trial of 26 practices. In the Netherlands, direct access was introduced nationally and was accompanied by an extensive publicity campaign. Furthermore, most insurance companies reimburse for direct access without further restrictions. Therefore, broader acquaintance of the public and better reimbursement conditions may explain the relatively large percentage of direct access found in the present study.

Patients who referred themselves for physical therapy appeared to differ from patients who were referred by their physician, a finding corresponding with international literature on direct access.[3,20] In the present study, patients who saw a physical therapist via direct access were more likely to be younger and higher educated compared with patients who were referred by their physician. Furthermore, patients with aspecific complaints of the spine, patients with recurrent complaints, and patients who had been treated before by a physical therapist made more use of direct access. Possibly due to tradition, and based on a long-standing relationship, older patients have a greater reliance on their GP than younger patients. In addition, older people more often have comorbidities, possibly increasing the need to visit their GP. Higher-educated clients may be better able to inform themselves about their symptoms and available health care, and they, therefore, may be more inclined to make their own decisions regarding treatment. Knowledge about symptoms and about the specific competence of the physical therapist also could explain why patients with recurrent problems referred themselves more often in comparison with patients who had no earlier experience with physical therapy. Finally, an important difference was found for the duration of the presented health care problems. Patients who made use of direct access more often had complaints existing for less than 1 month.

The patients with direct access distinguished themselves not only by their demographic characteristics and features of their health problems but also by their treatment. Patients who saw a therapist via direct access received fewer treatment sessions than patients who were

referred by their physician and their treatment goals, according to their physical therapist, were more often fully achieved. This finding is similar to those of Holdsworth and Webster[3] and Mitchell and de Lissovoy.[21] It is possible that patients who referred themselves had less severe complaints.[20] Unfortunately, the severity of complaints was not measured in the present study. There is evidence, however, that early treatment of musculoskeletal soft tissue injuries by physical therapists produces favorable outcomes in therapeutic effectiveness.[22–24] This evidence suggests that timing of physical therapy is essential and that the shorter duration of the complaints of the direct access group may account for the better outcome.

Two major concerns in relation to direct access have been that physical therapists would be overwhelmed by patients referring themselves and that costs for insurers would rise. The present study revealed that, in this first year, the introduction of direct access did not result in an overall increase in the number of patients who received physical therapy. It also appeared that almost 10% of the patients who referred themselves did not receive further treatment after the initial intake. In addition, the patient population in 2006 did not change dramatically compared with the patient population in 2005. Although differences were found, they were too small to be meaningful, and statistical significance was reached due to the large sample size. Our tentative conclusion is that there is not a large "new" group of patients visiting physical therapists. Most of these patients probably would have been referred by their physician had they not accessed physical therapy directly. The consequence of this finding is that GPs probably see fewer patients with complaints of the musculoskeletal system.

The standard GP practice in the Netherlands consists of 2,350 patients, and GPs refer, on average, 72 patients per 1,000 patients a year to physical therapists.[25] Calculating with 25% direct access, an average practitioner would refer 42 fewer patients to a physical therapist. Although reduced workload for GPs was seen as one of the advantages of direct access for GPs, this will hardly be noticed by an individual GP. However, it can be estimated that this decrease in patients visiting their GP with complaints of the musculoskeletal system may be cost-effective on a macroeconomic level. The cost-effectiveness on a macroeconomic level of direct access in the Netherlands is one of the factors that were not taken into account in this study and remains to be studied in the future. Several international studies,[21,26–29] however, revealed that patients with direct access received fewer prescriptions, were less often referred for a radiograph and for secondary care, and had a decreased need for more invasive treatments. These findings not only have positive implications for patients but also indicate national cost benefits.

Another important issue remains the fear that physical therapists may overlook serious medical conditions. For this reason, Dutch physical therapists specifically focused on detecting relative and absolute contraindications for treatment in their compulsory postgraduate education prior to the introduction of direct access. A study performed by Moore et al[30] revealed that patients with direct access were at minimal risk for grossly negligent care when evaluated and managed by physical therapists. It is important to realize, however, that the traditional situation in which treatment by a physical therapist was only possible after referral by a physician, which in most cases was the patient's GP, entailed the risk of the underuse of physical therapy care. International studies have revealed that experienced physical therapists have the same level of knowledge as orthopedists in managing patients with musculoskeletal conditions[31,32] and have clinical diagnostic accuracy comparable to that of orthopedic surgeons.[32,33] In a study in which patients with orthopedic problems were randomly assigned to a physical therapist or to an orthopedic surgeon, the patients who were seen by an orthopedic surgeon were more likely to have diagnostic imaging and surgery as part of their treatment.[26] Therefore, the risks from diagnosis by a physical therapist may not be higher than the risks from more invasive interventions. However, these results cannot be generalized directly to the Dutch situation, and studies on the accuracy of diagnostic decision making by both GPs and physical therapists in the Netherlands are recommended.

Another recommendation is that future research should focus on the communication between GPs and physical therapists. In the Netherlands, GPs traditionally fulfill a role as gatekeepers of the health care system, which makes it important to have a good view of their patients' health problems. Therefore, sharing information and collaboration regarding patient care and patient health problems between physical therapists and GPs should be warranted in the patients' best interest.

A limitation of the study was that information on the mode of access was missing for a relatively large group of patients, especially in the first 4 months of the study. These patients appeared to be higher educated compared with the group for whom this information was available. Because of this, it is possible that the percentage of patients who made use of direct access was underestimated in the beginning of 2006 because higher-educated patients are more likely to visit a physical therapist without referral. However, for the analyses of the differences in characteristics between patients who referred themselves and patients who were referred by their physician, no bias is expected. Another limitation of the study was that the data in our network came only from physical therapists working on general conditions in general practices. It can be expected that patients with sports injuries are especially inclined to visit a specialized sports physical therapist without a referral because the cause of such a health problem is obvious and there is little reason to suspect underlying pathology. In the future, it would be interesting to include specialized physical therapists, such as therapists who are specialized in sports injuries and manipulative physical therapists, in the network.

FOOTNOTES

All authors provided concept/idea/research design, writing, and consultation (including review of manuscript before submission). Dr Leemrijse and Ms Swinkels provided data collection. Ms Swinkels provided data analysis. Dr Leemrijse provided project management.

The results from this study were presented at the Congress of the Dutch National Society of Physical Therapy (KNGF); November 10–11, 2006, and November 9–10, 2007; Amsterdam, the Netherlands, and at the 15th International Congress of the World Confederation for Physical Therapy; June 2–7, 2007; Vancouver, British Columbia, Canada.

This project was funded by the Dutch Ministry of Health.

[*] SPSS Inc, 233 S Wacker Dr, Chicago, IL 60606

REFERENCE LIST

Groenewegen PP, De Jong JD, Delnoij GD. The Dutch health insurance law: the accumulation of 30 years of reform thought. Eur J Public Health. 2006;16(suppl 1):34–35.

Galley P. Physiotherapists as first-contact practitioners: new challenges and responsibilities in Australia. Physiotherapy. 1977;63:246–248.

Holdsworth LK, Webster VS. Direct access to physiotherapy in primary care: now? and into the future? Physiotherapy. 2004;90:64–72.

Massey BF Jr. 2002 APTA Presidential Address: What's all the fuss about direct access? Phys Ther. 2002;82:1120–1123.

Working in the USA: An Overview of Information Gathered by Us. London, United Kingdom: The Chartered Society of Physiotherapy; 2005.

Self-referral to Physiotherapy Services. London, United Kingdom: The Chartered Society of Physiotherapy; 2004.

Community and Care Services White Paper—Our Health, Our Say: A New Direction for Community Services. London, United Kingdom: Department of Health (UK); 2006.

Snow BL, Shamus E, Hill C. Physical therapy as primary health care: public perceptions. J Allied Health. 2001;30:35–38.

Netherlands Institute of Health Services Research–Allied Health Care (NIVEL) LiPZ Web site. Available at: http://www.nivel.nl/lipz.

Deyle GD. Direct access physical therapy and diagnostic responsibility: the risk-to-benefit ratio. J Orthop Sports Phys Ther. 2006;36:632–634.
Jette DU, Ardleigh K, Chandler K, McShea L. Decision-making ability of physical therapists: physical therapy intervention or medical referral. Phys Ther. 2006;86:1619–1629.
Ooijendonk WTM, De Vries SJ, Van Hespen ATH, Hopman-Rock M. Haalbaarheidsstudie Directe Toegankelijkheid Fysiotherapie [Feasibility Study on Direct Access to Physical Therapy]. Leiden, the Netherlands: TNO-PG; 2002.
Ooijendonk WTM, Van Hespen ATH, Pronk MG, De Vries SJ. Pilot Directe Toegankelijkheid Fysiotherapie [Pilot Study on Direct Access to Physical Therapy]. Leiden, the Netherlands: TNO-PG; 2004.
Van der Scheur S. Experiment Directe Toegankelijkheid Fysiotherapie: De Evaluatie [Evaluation of the Experiment on Direct Access to Physical Therapy]. Diemen, the Netherlands: CVZ; 2004.
Swinkels ICS, Van den Ende CHM, Van den Bosch W, et al. Physiotherapy management of low back pain: does practice match the Dutch guidelines? Aust J Physiother. 2005;51:35–41.
Swinkels ICS, Wimmers RH, Groenewegen PP, et al. What factors explain the number of physical therapy treatment sessions in patients referred with low back pain? a multilevel analysis. BMC Health Serv Res. 2005;5:24.
Hingstman L, Kenens R, van der Windt, et al. Rapportage Arbeidsmarkt Zorg en Welzijn: Hoofdrapport. [Report on the Labour Market for Healthcare and Welfare: Main Report]. OSA Publication ZW 21. Tilburg, the Netherlands: OSA; 2001.
WONCA International. International Classification of Primary Care. 2nd ed. Oxford, United Kingdom: Oxford University Press; 2003.
Crout KL, Tweedie JH, Miller DJ. Physical therapists' opinions and practices regarding direct access. Phys Ther. 1998;78:52–61.
Holdsworth LK, Webster VS, McFadyen AK. Are patients who refer themselves to physiotherapy different from those referred by GP's? Results of a national trial. Physiotherapy. 2006;92:26–33.
Mitchell JM, de Lissovoy G. A comparison of resource use and cost in direct access versus physician referral episodes of physical therapy. Phys Ther. 1997;77:10–18.
Nordeman L, Nilsson B, Möller M, Gunnarsson R. Early access to physical therapy treatment for subacute low back pain in primary health care: a prospective randomized clinical trial. Clin J Pain. 2006;22:505–511.
Wand BM, Bird C, McAuley JH, et al. Early intervention for the management of acute low back pain: a single-blind randomized controlled trial of biopsychosocial education, manual therapy, and exercise. Spine. 2004;29:2350–2356.
Zigenfus GC, Yin J, Giang GM, Fogarty WT. Effectiveness of early physical therapy in the treatment of acute low back musculoskeletal disorders. J Occup Environ Med. 2000;42:35–39.
Verheij RA, Jabaaij L, Abrahamse H, et al. Landelijk Informatienetwerk Huisartsenzorg. Feiten en cijfers over huisartsenzorg in Nederland [Netherlands Information Network on General Practice. Facts and figures on general practice in the Netherlands]. 2007. Available at: http://www.linh.nl/.
Baker-White G, Carr AJ, Harvey I, et al. A randomised controlled trial: shifting boundaries of doctors and physiotherapists in orthopaedic outpatient departments. J Epidemiol Community Health. 1999;53:643–650.
Deyle GD, Henderson NE, Matekel RL, et al. Effectiveness of manual physical therapy and exercise in osteoarthritis of the knee: a randomized, controlled trial. Ann Intern Med. 2000;132:173–181.
Deyle GD, Allison SC, Matekel RL, et al. Physical therapy treatment effectiveness for osteoarthritis of the knee: a randomized comparison of supervised clinical exercise and manual therapy procedures versus a home exercise program. Phys Ther. 2005;85:1301–1317.
Holdsworth LK, Webster VS, McFadyen AK. What are the costs to NHS Scotland of self-referral to physiotherapy? Results of a national trial. Physiotherapy. 2007;93:3–11.

Moore JH, McMillian DJ, Rosenthal MD, Weishaar MD. Risk determination for patients with direct access to physical therapy in military health care facilities. J Orthop Sports Phys Ther. 2005;35:674–678.

Childs JD, Whitman JM, Sizer PS, et al. A description of physical therapists' knowledge in managing musculoskeletal conditions. BMC Musculoskelet Disord. 2005;6:32.

Weale AE, Bannister GC. Who should see orthopaedic outpatients: physiotherapists or surgeons? Ann R Coll Surg Engl. 1995;77(suppl):71–73.

Moore JH, Goss DL, Baxter RE, et al. Clinical diagnostic accuracy and magnetic resonance imaging of patients referred by physical therapists, orthopaedic surgeons, and nonorthopaedic providers. J Orthop Sports Phys Ther. 2005;35:67–71

TABLES EN FIGURE

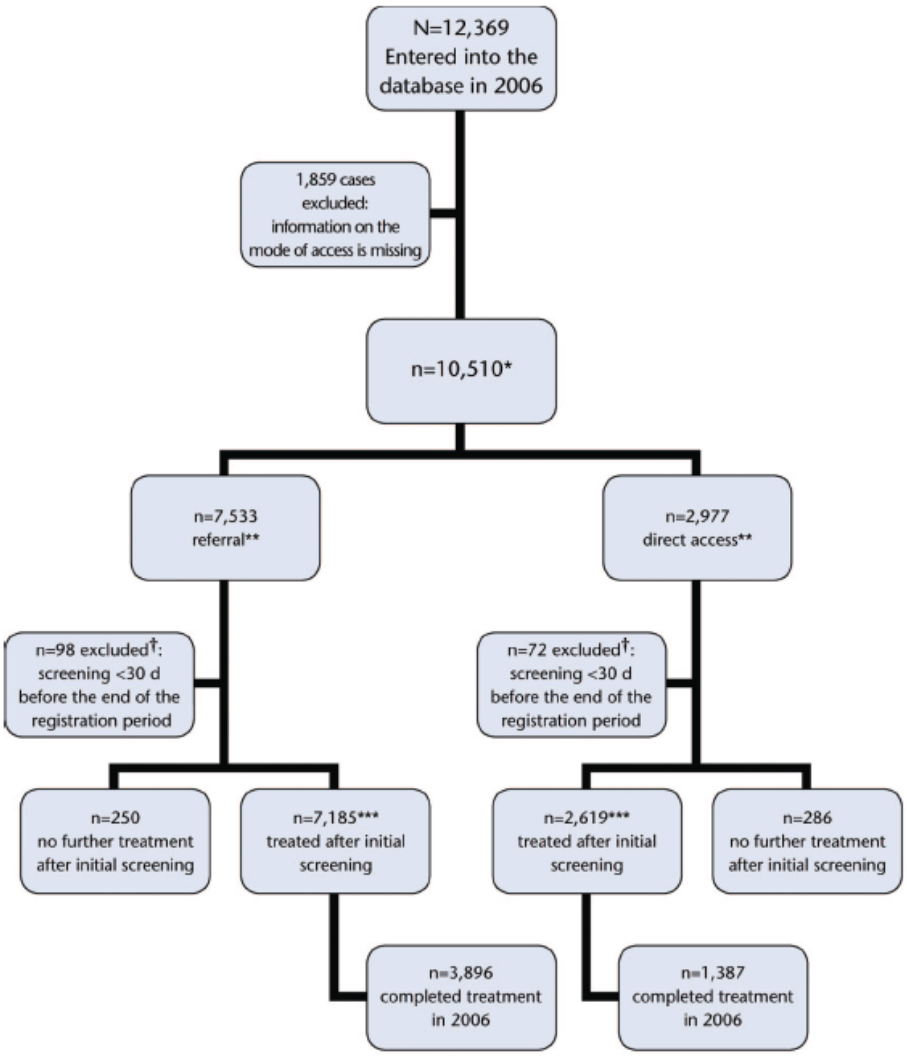

Figure.
Flow diagram of patients included in the study. *Number of patients used to derive the percentage of patients using direct access (question 1). **Number of patients used to analyze the differences in demographic characteristics and features of the health problems between direct access patients and patients who were referred (first part of question 2). ***Number of patients used to analyze the differences in the duration and effects of their physical therapy treatment between direct access patients and patients who were referred (second part of question 2). †Patients were not yet taken into further treatment while the initial screening had been less than 30 days before the end of the registration period. It was assumed that treatment would start within 30 days after screening. Before this period had finished, it could not be decided yet whether these patients had been treated. Data from these patients, therefore, were left out of the analysis.

Table 1.

Characteristics of the Sample of National Information Service for Allied Health Care (LIPZ) Physical Therapists and Practices Versus Characteristics of the Dutch Population Physical Therapists and Practices

	LIPZ		Dutch Population		*P*
	N	%	N	%	
Characteristics of the Practice (N=43)					
Type of practice					
Solo practice	12	27.9	1,743	36.2	.083
Collective practice	31	72.1	3,068	63.8	
Region					
North	3	7.1	406	8.5	
East	7	16.7	961	20.0	.923
South	9	21.4	1,015	21.2	
West	23	54.8	2,416	50.3	
Urbanization					
Very strong	10	23.3	918	19.1	
Strong	13	30.2	1,307	27.2	.778
Moderate	10	23.3	1,011	21.1	
Little	6	13.9	979	20.4	
Not	4	9.3	583	12.2	
Characteristics of Therapists (N=93)					
Sex					
Male	57	61.3	6,670	49.5	.030
Female	36	38.7	6,798	50.5	
Age (y)					
<26	7	8.3	746	5.5	
26–35	10	11.9	2,723	20.2	.365
36–45	26	31.0	4,279	31.8	
46–55	31	36.9	4,487	33.3	
>55	10	11.9	1,233	9.2	
Direct client bound[a] (h/wk)					
0–20 hours	27	30.0	2,922	31.5	.774
21–40 hours	52	57.8	5,040	54.3	
>40 hours	11	12.2	1,320	14.2	
Year of graduation					
Before 1970	2	2.5	906	7.6	
1970–1979	28	35.4	3,490	29.3	.410
1980–1989	32	40.5	4,616	38.8	
1990–1999	13	16.5	2,226	18.7	
2000 or later	4	5.1	656	5.5	

[a] The term "direct client bound" refers to time spent in treatment of patients, excluding time spent on management tasks, time spent on educational activities, and so on.

Table 2.
Information Collected in National Information Service for Allied Health Care (LiPZ) Network Relating to the Physical Therapy Episode of Care[a]

At Initial Contact	At Final Contact
• Date of application • Patient's unique number • ZIP code • Year of birth* • Sex* • Education* • Mode of access (direct access/referred)* • Referrer (if applicable) • Reasons for referral/main health problem* • Duration of presenting condition* • Recurrent condition* • Earlier physical therapy treatment* • Treatment goals (up to 4)	• Discharge date • Reason for discharge* • Intervention techniques applied in at least 50% of the sessions • Outcome of physical therapy (goals achieved)* • Total number of contacts*

[a] Asterisk indicates information used in this study.

Table 3.
Demographic Characteristics and Features of the Health Problem of Patients by Mode of Access and Corrected Odds Ratios (OR) and 95% Confidence Intervals (CI)

	Referral		Direct Access		Corrected OR (95% CI)[a]	*P*
	n	%	n	%		
Demographic Characteristics						
Sex						
Male	2,963	70.5	1,237	29.5	Reference	
Female	4,570	72.4	1,740	27.6	0.93 (0.83–1.04)	.133
Age (y)						
0–19	491	72.8	183	27.2	1.92 (1.50–2.50)	<.001
20–39	1,671	66.0	860	34.0	1.58 (1.35–1.85)	<.001
40–59	2,946	69.7	1,283	30.3	1.37 (1.18–1.58)	<.001
60 and over	2,424	78.8	651	21.2	Reference	
Education[b]						
Lower	2,718	78.7	737	21.3	Reference	
Middle	2,063	67.9	975	32.1	1.63 (1.43–1.85)	<.001
Higher	1,022	58.3	731	41.7	2.48 (2.14–2.86)	<.001
Characteristics of the Health Problem						
Diagnosis/health problem (top 5)						
Nonspecific low back pain	836	62.2	507	37.8	1.75 (1.49–2.06)	<.001
Nonspecific neck pain	694	63.5	399	36.5	1.87 (1.58–2.22)	<.001
Back pain, not further specified	424	57.1	318	42.9	2.29 (1.89–2.78)	<.001
Nonspecific shoulder pain	403	73.0	149	27.0	1.25 (0.85–1.60)	.069
Syndromes of cervical spine	474	75.5	154	24.5	1.17 (0.93–1.47)	.180
Other	4,364	85.5	1,205	14.5	Reference	
Duration of the health problem (mo)[c]						
<1	2,729	64.2	1,522	35.8	1.95 (1.72–2.22)	<.001
1–3	1,921	75.7	616	24.3	1.24 (1.06–1.44)	.007
>3	2,735	77.4	799	22.6	Reference	
Recurring health problem[d]						
Yes	2,260	63.0	1,328	37.0	1.56 (1.39–1.77)	<.001
No	5,011	76.4	1,545	23.6	Reference	
Earlier treatment by physical therapist[e]						
Yes	2,931	64.8	1,594	35.2	1.58 (1.41–1.77)	<.001
No	3,985	77.1	1,184	22.9	Reference	

[a] Odds ratios for the specific feature corrected for other features.
[b] 2,464 missing data.
[c] 188 missing data.
[d] A health problem recurring after a period free of complaints of between 6 weeks and 2 years; 366 missing data.
[e] Earlier treatment for the same complaint or other complaint in the 2 years preceding the present treatment; 816 missing data.

Table 4.
Discharge Data Relating to Mode of Access[a]

	Referral		Direct Access	
	n	%	n	%
Reason for discharge				
Treatment completed, goals achieved[b]	3,057	78.5	1,212	87.3
Treatment ended on patient's initiative	236	6.1	43	3.1
Treatment ended physical therapist's initiative	206	5.3	36	2.6
Reimbursement ended/changed	124	3.2	13	0.9
Unique visit	38	1.0	30	2.2
Patient moved/died	80	2.0	3	0.3
Other/unknown	155	4.0	50	3.6
Outcome[c]				
Goals not achieved	203	6.1	38	3.2
Goals 25% achieved	171	5.2	26	2.2
Goals 50% achieved	159	4.8	43	3.7
Goals 75% achieved	539	16.2	170	14.5
Goals fully achieved[b]	2,102	63.3	850	72.6
Unknown	146	4.4	45	3.8

[a] The total number of cases is smaller than the total number of patients treated in 2006 because not all treatment episodes were finished at the time of analysis.
[b] Significant at $P<.001$ (chi-square test).
[c] 571 missing data.