Official Journal of the Asian Pacific Society of Respirology
Respirology
APSR

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Journal:	*Respirology*
Manuscript ID:	RES-10-677.R1
Manuscript Type:	Original Article
Date Submitted by the Author:	07-Apr-2011
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Keywords:	Pneumonia

ORIGINAL ARTICLE

A prospective cohort study of healthcare visits and rehospitalizations after hospital discharge in community-acquired pneumonia

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SUMMARY AT A GLANCE

The present study documented that additional healthcare visits and rehospitalizations are common, with 34% of patients with CAP doing so within 30 days of discharge. This is mainly due to a worsening of signs or symptoms of CAP and/or comorbid conditions. These findings may have implications for discharge planning and follow-up of patients with CAP.

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ABSTRACT

Background and objective: **We aimed to identify the frequency of, reasons for and risk factors associated with additional healthcare visits and rehospitalizations (healthcare interactions) by patients with community-acquired pneumonia (CAP) within 30 days of hospital discharge.**

Methods: **Observational analysis of a prospective cohort of adults hospitalized with CAP at a tertiary hospital (2007-2009). Additional healthcare interactions were defined as the visits to a primary care centre or emergency department and hospital readmissions within 30 days of discharge.**

Results: **Of the 934 hospitalized patients with CAP, 282 (34.1%) had additional healthcare interactions within 30 days of hospital discharge: 149 (52.8%) needed an additional visit to their primary care centre and 177 (62.8%) attended the emergency department. Seventy-two (25.5%) patients were readmitted to hospital. The main reasons for additional healthcare interactions were worsening of signs or symptoms of CAP and new or worsening comorbid conditions independent of pneumonia, mainly cardiovascular and pulmonary diseases. The only independent factor associated with visits to primary care centre or emergency department was alcohol abuse (odds ratio [OR] = 1.65; 95% confidence interval [CI]: 1.03-2.64). Prior hospitalization (≤ 90 days) (OR = 2.47; 95% CI: 1.11-5.52) and comorbidities (OR = 3.99; 95% CI: 1.12-14.23) were independently associated with rehospitalization.**

Conclusions: **Additional healthcare visits and rehospitalizations within 30 days of hospital discharge are common in patients with CAP. This is mainly due to a worsening of signs or symptoms of CAP and/or comorbid conditions. These**

findings may have implications for discharge planning and follow-up of patients with CAP.

Key words: health services, patient discharge, patient readmission, pneumonia, risk factors.

Short title: Health services use after CAP discharge

INTRODUCTION

Community-acquired pneumonia (CAP) continues to be a major health problem worldwide. It is the leading cause of mortality among infectious diseases. In addition, CAP accounts for more than 1 million hospitalizations annually, at a cost exceeding $9.7 billion.[1,2] The high cost of treating CAP has raised interest in developing strategies to reduce the length of hospital stay and increase the number of patients who receive care at home.[3-5]

However, one qualitative study[6] found that most patients left hospital with no clear understanding of pneumonia, its treatment or follow-up when they got home, leading to an increase in primary care centre and emergency visits, cost-ineffective use of inpatient beds and lower patient satisfaction.[7,8] Despite this, only a few studies have examined the frequency of and factors associated with hospital readmission following an initial CAP-related hospitalization.[1,9-11.] Significantly, no studies have examined other additional healthcare interactions (primary care centre visits because of doubts or complications related to CAP and emergency department visits) within 30 days of discharge in patients with CAP.

A further point is that the strategies to reduce the length of hospital stay and the trend towards community-based treatment of CAP needs to be accompanied by increased emphasis on the information and support required by patients who go home to self-manage.[6] Identifying the reasons for and risk factors associated with additional healthcare visits and rehospitalizations may therefore be useful in terms of discharge planning. Indeed, discharge planning has been associated with improved referral and utilization of post-discharge services, as well as with fewer readmissions.[12-14] In

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addition, such planning appears to make patients and caregivers feel more prepared for post-discharge care.[15,16]

The present study aimed to identify the frequency of, reasons for and risk factors associated with additional healthcare visits and rehospitalizations in patients with CAP within 30 days of hospital discharge.

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METHODS

Setting and study design

The study was carried out in a 900-bed university hospital for adults in Barcelona, Spain, one which serves an area of 1,100,000 inhabitants and admits approximately 24,000 patients per year. All patients with CAP who were admitted to the hospital from January 2007 to December 2009 were prospectively recruited and followed up. Patients with neutropenia, immunoglobulin deficiencies, HIV infection, transplantation or splenectomy, as well as those who were receiving immunosuppressant and/or corticosteroid therapy (>20 mg/day of prednisone or its equivalent), were not included.

For the purposes of this study, patients with CAP were classified into the following two groups: those who had additional healthcare interactions (healthcare visits and rehospitalizations) within 30 days of hospital discharge and those who did not. Patients who died during hospitalization were excluded from this analysis. For the inclusion in the group of additional healthcare interactions, patients had to fulfil any of the following criteria within 30 days of discharge:

1. Primary care centre visits because of doubts or complications related to CAP (scheduled follow-up visits were excluded).
2. Emergency department visits for any reason.
3. Hospital readmission for any reason.

We collected the first episode and the main reasons of additional healthcare visits and rehospitalizations within 30 days of discharge. This prospective, observational study was approved by the institutional review board and informed consent was obtained from patients.

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Clinical evaluation and follow-up

Patients were seen daily during their hospital stay by one or more of the research team, who recorded clinical data in a computer-assisted protocol. Data were collected on demographic characteristics, comorbidities, causative organisms, empirical antibiotic therapy and outcomes, including in-hospital mortality. Data about additional healthcare interactions within 30 days of discharge were obtained by reviewing the SAP Healthcare Database of the Catalan Health Service (Institut Català de la Salut).

Severity of illness at presentation was quantified using the Pneumonia Severity Index (PSI).[17] Clinical stability was considered as described elsewhere.[18] Healthcare-associated pneumonia (HCAP) was defined as patients who received intravenous therapy at home, attended a hospital or haemodialysis clinic in the 30 days prior to onset of pneumonia, were admitted to an acute hospital in the 90 days before pneumonia onset, or who resided in a nursing home or long-term care facility.[19]

Reasons for additional healthcare visits and rehospitalizations

In order to assign the reasons for visits to primary care centres, rehospitalization or emergency department visits within 30 days of the initial hospitalization, three research nurses (J.A., P.C. and O.C.) and one physician (D.V.) reviewed the visit-to-primary care reports and the emergency, hospital admission and discharge reports of patients. For all cases, the reasons for the use of resources were agreed by all investigators consensus after reviewing the clinical data. Visits to a primary care centre were defined as consultations because of doubts or complications related to CAP within 30 days of discharge. These were categorized into seven groups: 1) respiratory symptoms; 2)

doubts about medical prescription drugs or adverse drug effects; 3) general symptoms; 4) cognitive impairment; 5) fever; 6) gastrointestinal symptoms; and 7) underlying disease exacerbation. The reasons for emergency department visits or readmission were categorized as described elsewhere[1]: 1) pneumonia-related worsening of signs or symptoms; 2) new or worsening comorbid conditions independent of pneumonia; or 3) any combination of pneumonia-related and comorbidity-related reasons. Patients were defined as having a pneumonia-related rehospitalization if a chest radiograph showed an infiltrate and if ≥3 typical or atypical symptoms of pneumonia were present. If there was insufficient documentation to establish the presence of a radiographic infiltrate at the time of hospital readmission, an oxygen saturation <92% and the presence of ≥3 symptoms was also used to define a pneumonia-related rehospitalization. Patients were defined as having a comorbidity-related rehospitalization if clinical data suggested an alternative reason for readmission, such as renal failure or heart failure. Finally, patients were assigned to any combination of pneumonia-related and comorbidity-related reasons if the primary reason for readmission could not be accurately determined, such as in the case of exacerbation of chronic lung disease.

Statistical analysis

Significant differences between groups were detected using the chi-square test for categorical variables. For continuous variables we used the Student's t-test or Mann-Whitney U test, depending on the results of the Kolmogorov-Smirnov normality test. The logistic-regression model of factors potentially associated with rehospitalizations and additional visits to primary care centre or visits to emergency department within 30 days of hospital discharge included all the significant variables in the univariate analysis

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(if there is a plausible biological relationship to the dependent outcome variable in order to avoid spurious associations) and all clinically important variables (sex, age, vaccination status, comorbidities, hospitalization within previous 90 days, clinical stability at hospital discharge and high-risk PSI classes), regardless of whether the latter were significant or not. Independent variables were checked for collinearity. We restricted the number of variables included in the multivariable model following the rule of at least five to nine events per variable.[20] The goodness-of-fit of the model was evaluated by the Hosmer-Lomeshow test. Statistical analysis was performed with the SPSS software package version 15.0 (SPSS, Chicago, IL). P values less than 0.05 were considered statistically significant. All reported p values are 2-tailed.

RESULTS

Patient characteristics

During the study period, 934 non-immunosuppressed adults with CAP were hospitalized. Of these, 106 (11.3%) died during hospitalization. Of the 828 patients discharged from the hospital, 282 (34.1%) had additional healthcare visits and rehospitalizations within 30 days of leaving hospital discharge. Among these patients, 149 (52.8%) visited a primary care centre because of doubts or complications related to CAP, while 177 (62.8%) visited the emergency department, of whom 72 were readmitted to the hospital (Figure 1).

The clinical characteristics during hospitalization of patients who had and had not additional healthcare interactions are compared in **Table 1.** Age and the frequency of male gender were similar between the groups. Patients who had additional healthcare interactions were more likely to be heavy drinkers and more often had been hospitalized within the previous 90 days. In addition, they more frequently had received the pneumococcal vaccine. Regarding comorbidities, patients who had additional healthcare interactions more often had chronic obstructive pulmonary disease (COPD). Similarly, patients who had additional healthcare interactions required less frequently ICU admission during hospitalization. No significant difference was found between groups regarding criteria of clinical stability at hospital discharged. However, tachypnea at hospital discharge tended to be associated with additional healthcare interactions.

Among the causative pathogens of pneumonia, *Haemophilus influenzae* was most frequently identified in patients who had additional healthcare interactions. No differences were found between other causative organisms.

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Reasons for primary care centre visits, emergency department visits or readmissions

As shown in **Table 2** the main reasons for primary care visits were respiratory and general symptoms. Less frequent reasons were gastrointestinal symptoms, cognitive impairment and underlying disease exacerbation. The main reasons for emergency department visits were pneumonia-related worsening of signs or symptoms and comorbid conditions independent of pneumonia. The most frequently identified comorbid condition leading to an emergency department visit was cardiovascular problems, followed by pulmonary and genitourinary diseases **(Table 3)**. Similarly, the main reason for readmissions was new or worsening comorbid conditions independent of pneumonia. The main comorbid conditions related to readmission were cardiovascular and pulmonary disease and cancer **(Table 4)**.

Risk factors associated with additional healthcare visits and rehospitalizations

Table 5 and 6 summarizes the results of the multivariable analyses of risk factors potentially associated with additional visits to primary care centre or emergency department and rehospitalizations within 30 days of hospital discharge in patients with CAP respectively. After adjustment for confounders, alcohol abuse (odds ratio [OR] = 1.65; 95% confidence interval [CI]: 1.03-2.64) was found to be independent factor associated with additional healthcare visits. Furthermore, prior hospitalization (≤ 90 days) (OR=2.47; 95% CI: 1.11-5.52) and comorbidities (OR = 3.99; 95% CI: 1.12-14.23) were associated with hospital readmissions. The p-value of the Hosmer-

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Lemeshow statistics for goodness-of-fit of the two models were was 0.59 and 0.36 respectively.

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DISCUSSION

This prospective cohort study found that additional healthcare visits and rehospitalizations within 30 days of hospital discharge were common among patients with CAP (34.1% of patients). The main reasons for additional healthcare interactions were worsening of signs or symptoms of CAP and new or worsening comorbid conditions independent of pneumonia. The only independent factor associated with additional healthcare visits was alcohol abuse. Prior hospitalization (≤ 90 days) and comorbidities were independently associated with hospital readmissions.

Taking into account that scheduled follow-up visits were excluded, the results show that additional healthcare interactions were used by more than one third of patients with CAP following hospital discharge. Nearly half of these patients needed an additional visit to a primary care centre or attended the emergency department. Studies to date have not analysed the frequency of visits to primary care centers and emergency departments within 30 days of hospital discharge in patients with CAP. By contrast, some studies have examined the frequency of and risk factors for a short-term hospital readmission following discharge for a CAP-related hospitalization. In those studies, about 7-12% of patients were rehospitalized within 30 days of discharge.[1,9,11] A similar result was found in the present study (8.7% of patients were readmitted within 30 days of discharge).

Here the main reason for visits to a primary care centre or the emergency department after hospital discharge was worsening of respiratory and general symptoms related with CAP. We also found that the most common reason for readmission was new or worsening comorbid conditions independent of pneumonia, mainly cardiac or pulmonary diseases. Our data concur with those of a previous study[1] that evaluated

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reasons for rehospitalization in patients with CAP, and which also found that new or worsening cardiac or pulmonary disease was the most frequent cause of readmissions.

The present results also show that alcohol abuse was the only independent factor associated with additional healthcare visits (visits to primary care centre or emergency department) after discharge. In this regard, it is well known that the incidence of CAP is greater in individuals with a history of alcohol abuse.[21] Similarly, alcohol abuse is associated with increased morbidity in patients with CAP, resulting in a greater incidence of bacteremia, delayed time to recovery, and a higher frequency of persistent pulmonary infiltrates on the chest radiograph.[22-24] Furthermore, comorbidities were associated with hospital readmissions. Previous study also reported that the majority of rehospitalizations following pneumonia are comorbidity-related and are the result of underlying cardiopulmonary diseases.[1] In addition, we found that hospitalization within previous 90 days of pneumonia-related episode was independently associated with hospital readmissions. This data concurs with others studies in which patients with previous hospitalization are at increased risk of rehospitalizations.[25]

Moreover, we found that prior pneumococcal vaccination was not independently related with a reduced risk of hospital readmissions. Similarly, in a previous population-based cohort study, prior pneumococcal vaccination did not significantly reduce the risk of death or subsequent hospitalization.[26] On the other hand, we found that clinical instability on hospital discharged was not associated with additional healthcare interactions. However, tachypnea tended to be associated with additional healthcare interactions in univariate analysis. In addition, it should be noted that it is likely that some patients with clinical instability at discharge could have continued hospital-based home care. Unfortunately, this information was not collected in this study.

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In light of the above it should be noted that previous research has shown that effective discharge planning can reduce additional healthcare visits and rehospitalizations and increase the cost-effective use of inpatient beds and patient satisfaction.[7,15,27] Discharge planning begins with an early assessment of the anticipated patient care needs. In addition, it includes concern for the patient well-being and involves the patient, his/her family and caregivers in a dynamic and interactive communication. The aim is to reach mutual agreement regarding continuing care.[28,29] Therefore, the ability of physicians and nurses to facilitate an effective discharge process has never been more urgent and complex than in the current care context.[27,30] The present study highlights a number of points that should be acknowledged prior to discharge planning in CAP patients. According to the results, patients with CAP have, upon discharge, specific information needs related to the management of signs or symptoms of pneumonia, as well as to underlying comorbid conditions and appropriate outpatient follow-up.

The strengths of this study are its prospective design and the large number of patients included. Similarly, there was comprehensive clinical data collection and the research was conducted using a standardized protocol. The study is limited by the fact it was carried out at a single centre, and also that information about additional healthcare interactions was obtained by reviewing the hospital database rather than through patient interviews. Nevertheless, there were no missing data about additional healthcare interactions and the investigators assessed all the consultations and hospital records. Moreover, confounding by indication may explain why prior pneumococcal vaccine appeared to increase the risk of the outcomes. In this regard, if we restricted our analysis to patients aged ≥ 65 years, prior pneumococcal vaccination was not related

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with additional healthcare interactions (P=0.44) in the multivariate logistic regression analysis.

In conclusion, this study shows that additional healthcare visits and rehospitalizations within 30 days of hospital discharge are common in patients with CAP. These additional healthcare interactions are mainly due to worsening of signs or symptoms of CAP and to new or worsening comorbid conditions independent of pneumonia. After adjustment, the only risk factor associated with additional healthcare visits was alcohol abuse. Prior hospitalization (≤ 90 days) and comorbidities were independently associated with hospital readmissions. Our findings may have implications for discharge planning and follow-up of patients with CAP.

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ACKNOWLEDGEMENTS

The authors are supported by the Ministerio de Ciencia e Innovación, Instituto de Salud Carlos III, co-financed by the European Development Regional Fund "A way to achieve Europe", the Spanish Network for the Research in Infectious Diseases (REIPI RD06/0008), the Fondo de Investigación Sanitaria de la Seguridad Social (grant 07/0864) (Drs. Adamuz, Viasus), and the Institut d´Investigació Biomèdica de Bellvitge (IDIBELL) (Dr. Viasus).

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Table 1 Main clinical characteristics of patients hospitalized for community-acquired pneumonia according to additional healthcare interactions.

Characteristic	Additional healthcare interactions (n=282) N	(%)	Non additional healthcare interactions (n=546) N	(%)	P-value
Age, median (IQR), years	72	(58-80)	71	(55-79)	0.33
Demographic characteristics					
Male gender	193	(68.4)	352	(64.5)	0.25
Current smoker	78	(27.8)	135	(24.8)	0.35
Heavy drinker	55	(19.6)	68	(12.5)	0.007
Influenza vaccine (<1year)	154	(61.4)	265	(54.1)	0.06
Pneumococcal vaccine (<5years)	71	(31.7)	97	(21.3)	0.003
Previous CAP (<1year)	31	(11.2)	56	(10.3)	0.69
HCAP	90	(31.9)	141	(25.8)	0.06
Nursing home resident	17	(6)	49	(9)	0.14
Hospitalization within previous 90 days	35	(12.4)	36	(6.6)	0.005
Underlying disease	221	(78.4)	400	(73.4)	0.12
COPD	92	(32.6)	131	(24)	0.008
Diabetes mellitus	71	(25.2)	148	(27.1)	0.55
Chronic heart disease	60	(21.3)	94	(17.2)	0.15
Cancer	28	(9.9)	49	(9)	0.65
Cerebrovascular disease	41	(14.5)	67	(12.3)	0.36
Dementia	17	(6)	24	(4.4)	0.30
Chronic liver disease	18	(6.4)	28	(5.1)	0.45
Chronic renal disease	33	(11.7)	43	(7.9)	0.07
High-risk PSI classes*	185	(65.6)	330	(60.4)	0.15
Clinical findings at admission					
Shock	27	(9.6)	53	(9.7)	0.95
Altered mental status	47	(16.7)	89	(16.3)	0.89
Purulent sputum	146	(51.8)	216	(39.8)	0.001
Pleuritic chest pain	101	(35.8)	220	(40.4)	0.19
Physical examination findings					
Axillary temperature on admission,	37.5	(36.9-38)	37.7	(37-38.2)	0.14

median (IQR), ºC					
Fever (>37.2 ºC)	184	(65.5)	372	(68.8)	0.34
Rales	242	(86.1)	454	(83.8)	0.37
Laboratory and radiographic findings					
$SatO_2$<90 or PO_2/FiO_2[†]<300	169	(64)	324	(63.5)	0.89
Bacteremia	30	(12.6)	49	(10.3)	0.36
Multilobar pneumonia	83	(29.5)	181	(33.3)	0.27
Pleural effusion	45	(16)	89	(16.3)	0.89
Complications during hospitalization[‡]	69	(24.5)	152	(27.8)	0.32
Adverse event during hospitalization[§]	38	(13.5)	78	(14.3)	0.75
ICU admission	17	(6)	55	(10.1)	0.05
Mechanical ventilation	7	(2.5)	31	(5.7)	0.04
Clinical stability on hospital discharge[¶]	230	(92.3)	484	(92.7)	0.81
Tachypnea	14	(5.2)	14	(2.7)	0.08
O_2 Saturation < 90%	7	(2.6)	19	(3.7)	0.42
Aetiology					
Streptococcus pneumonia	127	(45)	246	(45.1)	0.99
Legionella pneumophila	5	(1.8)	20	(3.7)	0.13
Haemophilus influenzae	23	(8.2)	14	(2.6)	<0.001
Anaerobic organism	12	(4.3)	35	(6.4)	0.20
Duration of first hospitalization, median (IQR), days	7	(5-11)	7	(5-11)	0.73

Abbreviations: HCAP, healthcare-associated pneumonia; COPD, chronic obstructive pulmonary disease; ICU, intensive care unit; IQR, interquartile range.

[*] Patients were stratified into high-risk classes according to the PSI score (>90 points, classes IV and V).

[†] Partial pressure of oxygen in arterial blood (PO_2) and the fraction of inspired oxygen (FiO_2).

[‡] Related to the disease.

[§] Related to pharmacological treatment.

[¶] Clinical stability as described by Halm.[5]

Table 2 Reasons for visits to a primary care centre within 30 days of hospital discharge in 149 patients*.

Reason	N	(%)
Respiratory symptoms	112	(75.2)
General symptoms	34	(22.8)
Fever	13	(8.7)
Doubts about medical prescription drugs or adverse drug effects	7	(4.7)
Gastrointestinal symptoms	6	(4)
Cognitive impairment	3	(2)
Underlying disease exacerbation	3	(2)

* 29 patients reported >1 reason to primary care centre

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Table 3 Reasons for emergency department visits within 30 days of hospital discharge in 177 patients.

Reason	N	(%)
Pneumonia-related worsening of signs or symptoms	84	(47.5)
New or worsening comorbid conditions independent of pneumonia	77	(43.5)
Cardiovascular	20	(11.3)
Pulmonary (unrelated to pneumonia)	11	(6.2)
Genitourinary	8	(4.5)
Other*	8	(4.5)
Gastrointestinal	6	(3.4)
Neurological	5	(2.8)
Orthopaedic	5	(2.8)
Neoplastic	5	(2.8)
Infection	5	(2.8)
Adverse drug effects	4	(2.3)
Any combination of pneumonia-related and comorbidity-related reasons†	16	(9)

* For patients who visited the emergency department for new or worsening comorbid conditions independent of pneumonia, other comorbid conditions were as follows: hyperglycaemia (n=1), retinal detachment (n=1), eye cataract (n=1), insect bite (n=1), vasovagal syncope (n=1), hepatic encephalopathy (n=1), epistaxis (n=1) and tracheal granuloma (n=1).

† For patients who visited the emergency department for both pneumonia and comorbidity-related reasons, the comorbid conditions were exacerbation of chronic pulmonary disease or aspiration.

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Table 4 Reasons for readmission within 30 days of hospital discharge in 72 patients.

Reason	N	(%)
New or worsening comorbid conditions independent of pneumonia	31	(43.1)
Cardiovascular	12	(16.7)
Pulmonary (unrelated to pneumonia)	8	(11.1)
Neoplastic	5	(6.9)
Infection	2	(2.8)
Neurological	1	(1.4)
Gastrointestinal	1	(1.4)
Adverse drug effects	1	(1.4)
Retinal detachment	1	(1.4)
Pneumonia-related worsening of signs or symptoms	28	(38.9)
Any combination of pneumonia-related and comorbidity-related reasons*	13	(18.1)

* For patients who visited the emergency department for both pneumonia and comorbidity-related reasons, the comorbid conditions were exacerbation of chronic pulmonary disease or aspiration.

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Table 5 Factors associated with additional visits to a primary care centre or visits to emergency department within 30 days of discharge: multivariate analysis.

Characteristic	Odds Ratio	95% Confidence Interval	P-value
Aged ≥ 65 years	0.82	0.52-1.29	0.40
Male gender	0.76	0.52-1.11	0.16
Alcohol abuse	1.65	1.03-2.64	0.04
Pneumococcal vaccine (<5 years)	1.18	0.76-1.84	0.46
Influenza vaccine (<1 year)	1.06	0.68-1.64	0.80
Prior hospitalization (≤ 90 days)	1.39	0.76-2.54	0.29
Comorbidities*	0.99	0.62-1.59	0.97
High-risk PSI classes†	1.19	0.78-1.83	0.42
Clinical stability on discharge	0.85	0.45-1.62	0.62

Abbreviations: ICU, intensive care unit.

* Comorbidities includes: chronic obstructive pulmonary disease, diabetes mellitus, chronic heart disease, cancer, cerebrovascular disease, dementia, chronic liver disease and chronic renal disease.

† Patients were stratified into high-risk classes according to the PSI score (>90 points, classes IV and V).

Table 6 Factors associated with hospital readmission within 30 days of discharge: multivariate analysis.

Characteristic	Odds Ratio	95% Confidence Interval	P-value
Aged ≥ 65	1.43	0.66-3.01	0.37
Male gender	1.58	0.77-3.21	0.21
Pneumococcal vaccine (<5 years)	1.83	0.92-3.63	0.08
Influenza vaccine (<1 year)	1.16	0.53-2.55	0.71
Prior hospitalization (≤ 90 days)	2.47	1.11-5.52	0.03
Comorbidities*	3.99	1.12-14.23	0.03
High-risk PSI classes†	0.65	0.32-1.31	0.22
Clinical stability on discharge	1.80	0.41-7.93	0.44
Haemophilus influenzae pneumonia	1.70	0.59-4.88	0.32

* Comorbidities includes: chronic obstructive pulmonary disease, diabetes mellitus, chronic heart disease, cancer, cerebrovascular disease, dementia, chronic liver disease and chronic renal disease.

† Patients were stratified into high-risk classes according to the PSI score (>90 points, classes IV and V).

Figure 1 Additional healthcare visits and rehospitalizations after hospital discharge in community-acquired pneumonia

* After 30 days of hospital discharge.

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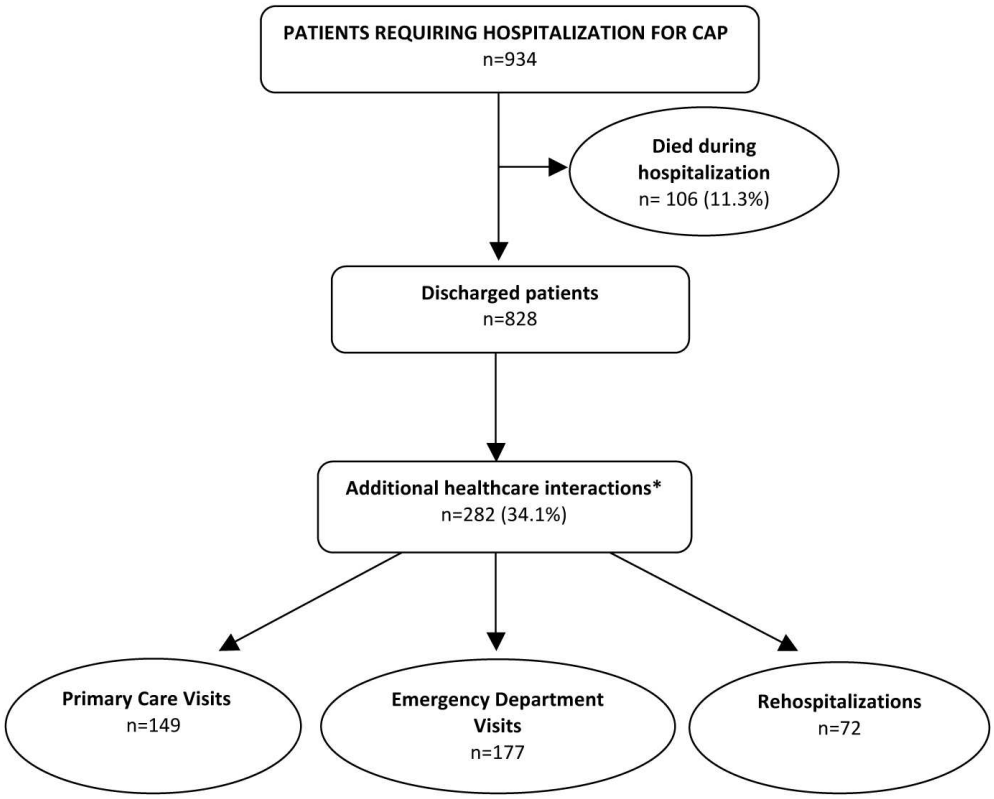

* After 30 days of hospital discharge.
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