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ORIGINAL RESEARCH

Quick Diagnosis Units Versus Hospitalization for the Diagnosis of Potentially Severe Diseases in Spain

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OBJECTIVES: We describe the functioning of a quick diagnosis unit (QDU) in a Spanish public university hospital to ascertain the utility and cost of the model compared to conventional hospitalization.

DESIGN: Observational study with a prospective and retrospective cohort.

SETTING: Spanish tertiary public university hospital.

PATIENTS: Two thousand consecutive patients evaluated between December 2007 and July 2010 with potentially severe diseases normally requiring hospitalization for diagnosis. For comparative purposes, we analyzed a randomized, retrospective cohort of 1454 hospitalized patients.

MEASUREMENTS: Variables measured included source of referral, reason for consultation, time to diagnosis and length-of-stay, hospitalizations avoided, Charlson comorbidity index, costs, and patient satisfaction using a telephone survey.

RESULTS: Suspected anemia, cachexia-anorexia syndrome, febrile syndrome, adenopathies and/or palpable masses, abdominal pain, diarrhea, and lung abnormalities accounted for 88% of QDU patients. The most-frequent diagnoses were cancer (26.3%) and iron-deficiency anemia. QDU patients with anemia were significantly younger than hospitalized patients with the same diagnosis ($P < 0.0001$). Other parameters were similar between QDU and hospitalized patients. The mean cost of treatment was 3153.87 Euros for hospitalization and 702.33 Euros for the QDU. Patients expressed a high degree of satisfaction with QDU care.

CONCLUSIONS: QDUs can manage the diagnosis of patients with potentially severe diseases equally as well as traditional hospitalization, and saves costs. QDU patients expressed a high degree of satisfaction, with most preferring this model to hospitalization. *Journal of Hospital Medicine* 2012;7:41–47. © 2011 Society of Hospital Medicine

In recent years, hospitals in countries with public health systems have adopted organizational changes to improve efficiency and resource allocation. Acute hospital bed utilization is a growing concern for healthcare systems in these countries, as it represents a significant share of health costs.[1]

Inappropriate hospitalization is a significant problem for public health systems. In Spain and other countries, due to deficiencies in outpatient services, acute beds are increasingly occupied by patients requiring diagnostic tests for nonacute but potentially severe diseases that often need no immediate treatment, thereby reducing beds for acute patients.[2,3]

Reports suggest 9% to 17% of patients admitted to Spanish internal medicine units could be studied on an outpatient basis.[4–7] However, long delays in outpatient diagnostic tests in Spain make diagnosis outside conventional hospitalization unviable, especially when rapid access to tests for suspected malignancy is required.

These shortcomings have prompted the search for alternatives to hospitalization. Alternative care models include: 1-day hospitals (providing medical procedures requiring <24 hours of hospitalization)[8]; short-stay observation units (often located adjacent to emergency departments [ED], and accommodating patients requiring brief periods of observation or therapy)[9–12]; hospital-in-the-home programs (delivering a limited range of acute care services to selected patients)[10–13]; outpatient major surgery programs (providing surgical procedures with postoperative recovery periods short enough to permit same-day discharge);[14] and, more recently, quick diagnosis units ([QDUs], outpatient diagnostic units for patients with suspected severe disease).[2,3,15,16]

Current referral processes for diagnosis and specialized care in primary health care (PHC), especially waiting times for diagnostic procedures, are long—even in patients with suspected cancer—in public health systems such as in Spain. This results in PHC

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physicians and patients using the ED as a voluntary shortcut.[3,6,17]

In 1996, the use and benefits of quick-and-early diagnosis units were first described for suspected cancer patients referred from PHC centers to the Queen Elizabeth Hospital in Birmingham, England.[16] Patients were evaluated by specialists according to the suspected diagnosis (eg, patients with hematuria or testicular masses were assessed by urologists).

QDUs are a little-reported, potentially cost-saving alternative that allow coordinated, agile diagnostic procedures and may avoid hospital admission. QDUs increase patient comfort by allowing many to remain at home during the diagnostic process.[17] QDUs have been introduced in Spain in recent years, and are mainly directed by internists (similar to hospitalists in the United States). Patients with specific symptoms, such as breast or testicular masses, are referred to, and evaluated directly by, the appropriate medical specialist.[17] Apart from 2 *Opinion* articles on QDUs led by specialists other than internists in the United Kingdom,[16] and by internists (our group) in Spain,[17] there are, to our knowledge, no other English-language reports on this healthcare model.

The aim of this study was to describe the functioning of a QDU in a Spanish public university hospital after evaluating 2000 consecutive patients. We intended to ascertain the utility and cost of the model compared to conventional hospitalization and the degree of patient satisfaction.

METHODS

We carried out a longitudinal, descriptive study in a prospective cohort of 2000 consecutive QDU patients, evaluated between December 2007 and July 2010, in a public university hospital with 840 acute beds, serving a reference population of 540,000 in Barcelona, Spain.

The QDU is composed of a specialist in internal medicine and a registered nurse who work in the QDU for 5 hours daily, 5 days a week (Monday-Friday), assisted by specialists from other specialties. It has a consulting room and a waiting room for patients and families, and functions daily.

For comparison, we analyzed a retrospective cohort of 1454 patients diagnosed with anemia (n = 548), cachexia-anorexia syndrome (n = 458), febrile syndrome (n = 240), and adenopathies or palpable masses (n = 208) admitted to the internal medicine department between September 2006 and June 2010. Patients were randomly selected from the 2022 consecutive patients with these diagnoses, hospitalized during this period and compared, on an unmatched basis, with all 1468 QDU patients with the same diagnoses.

Patients evaluated by the QDU have potentially severe disease that would normally require hospital admission for diagnosis, but whose health status allows outpatient study, and who have no physical or psychological disability that would make attending the hospital several times difficult. The criteria for QDU referral are agreed with central services (Table 1). In our hospital, patients with lung abnormalities (eg, pulmonary nodules) are usually evaluated quickly in the 1-day hospital of the respiratory diseases department, however, they are not excluded from QDU evaluation.

TABLE 1. Criteria for Referral to the Quick Diagnosis Unit

Anemia*
Cachexia-anorexia syndrome†
Febrile syndrome‡
Adenopathies and/or palpable masses
Unexplained severe abdominal pain
Chronic diarrhea
Rectorrhagia
Jaundice
Lung and/or pleural abnormalities§
Unexplained dyspnea
Dysphagia
Ascites
Anasarca
Arthritis

*Hemoglobin level below 8 g/L, with or without symptoms.
†Unexplained anorexia, asthenia, and loss of 10% or more of body weight during at least 6 weeks.
‡Fever of unknown origin with a temperature equal to, or higher than, 38°C for at least 2 weeks.
§Mainly suggestive of neoplasm, and after excluding obvious causes such as community-acquired pneumonia or residual lesions.

Our QDU protocol is based on an urgent first visit, followed by preferential programming and coordination of complementary tests, and subsequent visits until a diagnosis is made. The main diagnostic tests are normally carried out within 10 days after the first visit and, thus, visits are not consecutive but spread over a short period of time. Patients are attended on an ambulatory basis and do not stay overnight.

Inclusion Criteria

When setting up the QDU, the ED, PHC centers, outpatients and other sources of referral were informed and trained in QDU referral criteria (Table 1). All diseases selected for QDU assessment were agreed according to established guidelines. For example, only patients with severe anemia, with or without symptoms, defined as a hemoglobin concentration <8 g/L, our accepted criterion for hospitalization for diagnosis and treatment, were included.

Exclusion Criteria

Patients who fulfilled the inclusion criteria but were judged by the QDU or ED physician as requiring hospitalization or routine outpatient study (eg, active bleeding, uncompensated heart failure, impaired general status, mobility, and social problems) were excluded. Likewise, patients lost to follow-up or hospitalized during the study due to complications, and deaths were excluded.

For each patient, in addition to clinical data, we prospectively recorded: demographic data; reason for consultation; source of referral; waiting time for the first visit; number and date of visits; waiting times between visits; time to diagnosis; type, number, and date of complementary tests; final diagnosis; and onward referral. The full diagnostic workup was done according to previously established protocols. The Charlson comorbidity index was calculated.[18] Blood transfusions and the mean number of units used (SAG-M red cell concentrates with a median volume per unit of 289 [25] ml) were recorded and administered according to hospital protocol. The time to diagnosis was defined as the time from the first visit to a definitive diagnosis, and usually coincided with the results of diagnostic tests (eg, imaging or pathology).

The same factors were recorded for hospitalized patients (retrospective cohort) except for waiting time to the first visit, number and date of visits, waiting times between visits, and time to diagnosis. In addition, we recorded the mean hospital stay for each patient. Hospital admission avoided was defined as patients who would have been admitted for a diagnostic workup if there were no QDU.

We made a cost analysis using microcosting techniques. First, we calculated the mean number of QDU visits in 150 randomly selected patients with iron-deficiency anemia, 150 with cachexia-anorexia syndrome, 150 with fever of unknown origin, and 150 with adenopathies and/or palpable masses. We analyzed the full direct and indirect costs, and calculated the mean cost per visit and the mean cost per process (''admission to discharge''). The mean length-of-stay, and direct and indirect costs were also calculated retrospectively for the same number of hospitalized patients in 2 internal medicine wards, as were the mean cost per daily stay and the mean cost per process (''admission to discharge''). In our hospital, a 25-bed internal medicine ward is staffed by 2 consultant physicians and 4 residents, a nursing sister, and 3 teams of 3 registered nurses working 8-hour daily shifts, 2 nursing assistants, and a full-time secretary. In contrast, the QDU is staffed by a physician and a nurse, and receives administrative support from 2 secretaries shared with other units. All staff salaries were included in the analysis. All costs analyzed were hospital costs and not National Health Service costs.

A telephone survey was carried out in a random sample of 225 patients 3 months after the QDU intervention, based on a survey previously used and validated by our department. To respect privacy issues, all participants provided verbal consent over the telephone prior to the survey interview. Approval was obtained from the hospital Ethics Committee. The survey consisted of 20 multiple choice questions (4 options) and evaluated: perception of the care process, degree of difficulty of travel to the unit, overall satisfaction, preferential future care type, and conditions of physical space.

TABLE 2. Main Reasons for Consultation (n = 2000)

Reasons for Consultation	n (%)
Anemia*	550 (27.5)
Cachexia-anorexia syndrome†	462 (23.1)
Febrile syndrome‡	244 (12.2)
Adenopathies and/or palpable masses	212 (10.6)
Abdominal pain	128 (6.4)
Chronic diarrhea	108 (5.4)
Lung abnormalities	50 (2.5)

*Hemoglobin level below 8 g/L, with or without symptoms.
†Unexplained anorexia, asthenia, and loss of 10% or more of body weight during at least 6 weeks.
‡Fever of unknown origin with a temperature equal to, or higher than, 38°C for at least 2 weeks.

Statistical Analysis

The mean, standard deviation, median, and 25% and 75% percentiles were calculated for descriptive variables. Categorical variables were compared using the chi-square test or Fisher's exact test as necessary. Continuous variables were analyzed using the Student *t* test for variables with a normal distribution, and the Mann–Whitney *U* nonparametric test for variables with a non-normal distribution. The level of statistical significance was established as $P = 0.05$. The analysis was made using the SAS v.9.1 statistical package (SAS Institute, Cary, NC).

RESULTS

Of the 2302 patients initially evaluated, 276 were excluded due to associated conditions that made outpatient QDU management inappropriate, 7 patients were lost to follow-up, 4 died, and 15 were hospitalized during the study due to complications. Therefore, 2000 QDU patients were finally included, of whom 1106 were female, with a mean age of 60 years (18.84).

The main reasons for consultation are shown in Table 2. The main sources of referral were the ED (1022 patients) and PHC centers (942 patients). Waiting time for the first QDU visit ranged from 2 to 8 days (mean: 3.9 days) in patients referred from PHC centers, and 0 to 4 days (mean: 2.1 days) in patients referred by the ED.

The 2000 first visits generated 4260 successive visits (ratio first/successive = 2.13). The average number of visits per patient was 3.11.

The most frequent diagnoses were cancer (both epithelial and hematological) in 526/2000 (26.3%) patients, and iron-deficiency anemia (unrelated to malignancy) in 360 patients. The most common cancers were colon cancer and lymphomas, while the main cause of iron-deficiency anemia was chronic gastrointestinal bleeding (148/2000 [7.4%] patients) (Table 3).

The mean time to diagnosis was 9.4 days (1.78). After the diagnostic study was completed, 1232 patients were referred to PHC centers, 712 to outpatients, and 56 required hospitalization.

TABLE 3. Main Diagnoses of Quick Diagnosis Unit Patients

Diagnosis	n (%)
Malignant neoplasm	526 (26.3)
Colon	132 (6.6)
Lymphoma	142 (7.1)
Gastric	46 (2.3)
Lung	37 (1.9)
Pancreas	89 (4.5)
Other hematological*	32 (1.6)
Breast	20 (1.0)
Ovary	16 (0.8)
UPM	12 (0.6)
Iron-deficiency anemia	360 (18)
Digestive	148 (7.4)
Unknown cause	80 (4.0)
Heavy menstrual bleeding	66 (3.3)
Multifactorial anemia	66 (3.3)
Chronic liver disease	57 (2.9)
Acute viral illness	80 (4)
Reactive adenitis	78 (3.9)
MGUS	34 (1.7)

Abbreviations: MGUS, monoclonal gammopathy of unknown significance; UPM, unknown primary-site malignancy.
* Chronic lymphocytic leukemia, myelodysplastic syndrome, and multiple myeloma.

Taking into account previously used criteria, we estimated that 820 (41%) patients would have been candidates for conventional hospitalization (for diagnostic studies) before QDU was created. Considering that the mean length-of-stay of the internal medicine department (50 beds) during 2009 for patients admitted for a diagnostic workup was 10.3 days, we estimated that 12.5 beds per day during a year were freed up (ie, 4563 bed-days saved in a year). On the other hand, 45 of 1000 (4.5%) patients required immediate or early hospitalization due to their bad health status, which impeded further QDU diagnosis.

Table 4 shows the main characteristics of QDU and hospitalized patients according to the main reasons for consultation. QDU patients with anemia were significantly younger than hospitalized patients with the same diagnosis ($P < 0.0001$). Other parameters, notably age, time to diagnosis versus length-of-stay, and Charlson comorbidity index showed no statistically significant differences in any of the 4 main reasons for consultation (Table 4).

Table 5 shows the mean costs per stay, per visit, and per process for hospitalized and QDU patients included in the 4 main reasons for consultation. In hospitalized patients, the total mean cost per day of hospital stay was 363.35 Euros, and the mean cost per process was 3153.87 (910) Euros. In contrast, the mean cost per process in the QDU was 702.33 (610) Euros.

Compliance with the patient survey was 94%. The results highlighted 3 main aspects: a) overall satisfaction with QDU care was high in 93% of cases; b) repeated travel to the hospital was not a major difficulty; and c) if further diagnostic tests were required, 84% of patients would prefer the QDU care model to hospitalization. The same results were obtained analyzing only patients with previous hospital admission. The remaining 16% indicated no preference for 1 type of care.

DISCUSSION

Our results indicate that, for diagnostic purposes, patients with potentially severe diseases can be managed similarly in a QDU or in-hospital setting, and that the QDU model saves money compared to hospitalization. QDU patients expressed a high degree of satisfaction, with most preferring this model to hospital admission.

The only significant difference between QDU and hospitalized patients in the 4 main reasons for consultation was age in anemia patients, which may reflect the decision of the ED physician to exclude 56 patients from the initial evaluation. A separate analysis of this subgroup revealed an older age (75.3 years) and a higher number of comorbidities (Charlson index = 2.3) (data not shown).

In Spain, some patients with potentially severe diseases are hospitalized for several days for diagnostic tests without therapy. Can these patients be studied and diagnosed on an outpatient basis? Cachexia-anorexia syndrome and severe anemia are among the main disorders for which patients are hospitalized for diagnostic tests.[5,7] In our center and others, anemia, with hemoglobin levels <8 g/L, is a criterion for hospitalization for both diagnosis and treatment.[2,3,17] These patients are commonly evaluated initially in the ED and hospitalized in internal medicine wards, where they have a full baseline laboratory analysis (to study the type of anemia in naive conditions), a blood transfusion if necessary, and several days' hospitalization for diagnostic tests.

The motives for QDU consultation and the final diagnoses are fairly homogenous among Spanish units,[2,3,15] allowing a profile to be drawn up of patients who could benefit from early QDU diagnosis. In 88% of our patients, the reasons for consultation were anemia, cachexia-anorexia syndrome, febrile syndrome, adenopathies and/or palpable masses, abdominal pain, diarrhea, and lung abnormalities. The most frequent diagnosis was cancer (26.3%), although most patients showed no clear signs or symptoms of cancer at the initial consultation, suggesting that nonspecific but suspicious symptoms warrant early investigation.

QDUs seem to reduce costs, as reported by a 2004 Spanish study of patients evaluated for various conditions,[3] which found that the mean cost per patient was up to 8 times cheaper than conventional hospitalization; hospitalization was avoided in 45% of patients, representing the freeing up of 7 internal medicine beds per day. In our case, and on the basis of previous criteria, avoiding hospital admission in 41% of patients evaluated resulted in the permanent freeing up of 12.5 internal medicine beds per day and a

TABLE 4. Main Characteristics of Quick Diagnosis Unit and Hospitalized Patients

Anemia	QDU (n = 550)	Hospitalized (n = 548)	*P* Value
Age	66.72 (15.23) 71 [59;79]	77.18 (13.71) 79.23 [72;85]	<0.0001
Female	280 (51%)	291 (53.1%)	
Male	270 (49%)	257 (46.9%)	
Time to diagnosis/HS (days)	7.91 (1.41) 8 [6;9]	8.66 (3.44) 8.5 [7;10]	NS
Hemoglobin	75.56 (20.9) 76 [55;79]	74.94 (19.1) 76 [61;78]	NS
Anemic syndrome	509 (92.3%)	512 (93.4%)	NS
Transfusion	362 (65.8%)	355 (64.8%)	NS
Charlson co. index	1.3 (2.1) 1.5 [1;1.6]	1.4 (2.2) 1.5 [1;1.8]	NS
Main diagnosis	Iron-deficiency anemia/colon cancer	Iron-deficiency anemia/colon cancer	
Cachexia-Anorexia Syndrome	**QDU (n = 462)**	**Hospitalized (n = 458)**	***P* Value**
Age	68.32 (18.27) 69 [60;77]	70.23 (15.23) 73.5 [68;79]	NS
Female	230 (49.8%)	236 (51.6%)	
Male	232 (50.2%)	222 (48.4%)	
Time to diagnosis/HS (days)	10.21 (3.31) 11 [10;12]	11.32 (4.12) 12 [10;13]	NS
Weight loss (Kg)	9.7 (2.25) 10 [9;12]	9.5 (1.76) 10 [8;11]	NS
Charlson co. index	1.1 (2.1) 1.3 [1;1.4]	1.2 (2.4) 1.4 [1;1.6]	NS
Main diagnosis	Pancreatic cancer	Pancreatic cancer	
Febrile Syndrome	**QDU (n = 244)**	**Hospitalized (n = 240)**	***P* Value**
Age	47.18 (15.23) 50 [45;55]	49.34 (14.72) 53 [49;56]	NS
Female	127 (52%)	121 (50.4%)	
Male	117 (48%)	119 (49.6%)	
Time to diagnosis/HS (days)	8.32 (2.23) 9 [8;10.5]	9.11 (3.54) 10.5 [9;11.5]	NS
Mean duration of fever (days)	20.15 (12.12) 24 [20;26]	19.76 (10.54) 23 [19;25]	NS
Charlson co. index	1.0 (1.5) 1.2 [1.1;1.6]	1.2 (2.1) 1.3 [0.9;1.4]	NS
Main diagnosis	Lymphoma	Lymphoma	
Adenopathies and/or Palpable Masses	**QDU (n = 212)**	**Hospitalized (n = 208)**	***P* Value**
Age	58.23 (17.20) 59.5 [55;61]	60.19 (13.21) 64 [58;65]	NS
Female	110 (51.9%)	106 (51%)	
Male	102 (48.1%)	102 (49%)	
Time to diagnosis/HS	7.89 (2.54) 8 [7;9]	7.77 (3.23) 9 [7.5;11]	NS
Charlson co. index	1.1 (1.1) 1.3 [0.8;1.4]	1.1 (1.7) 1.5 [1.1;1.6]	NS
Main diagnosis	Lymphoma	Lymphoma	

NOTE: Data expressed as mean (SD) and median [P25-P75].
Abbreviations: Charlson co. index, Charlson comorbidity index; HS, length-of-stay; NS, nonsignificant; QDU, quick diagnosis unit; SD, standard deviation.

significant reduction in hospital costs. However, this does not mean the QDU system would reduce costs by permanently freeing inpatient beds, as its adoption would drive up systemic costs due to increased QDU utilization and indirect admissions from the QDU to the hospital. The cost differences between QDU and hospitalized patients (702.33 vs 3153.87 Euros) were due to differences in staffing and working hours and, to a lesser degree, fixed hospital costs (eg, catering) (Table 5). This might suggest that our internal medicine wards and QDU are overstaffed and understaffed, respectively, and that resources may be more effectively used in QDU. However, different staff dimensions between hospitals limits the extrapolation of costs and savings.

The QDU model has limitations. Using QDU resources to diagnose mild disorders could delay the diagnosis of severe disease and, therefore, clear agreement on referral criteria is essential. Likewise, although we followed approved guidelines, QDU physicians may prescribe too many diagnostic tests, searching for severe diseases the patient is unlikely to have, especially if the referral diagnosis is incorrect.[17] This could be minimized by implementing standardized QDU diagnostic protocols and guidelines. In our study, the type and mean number of complementary explorations in patients with the 4 main reasons for consultation was similar between QDU and hospitalized patients (2.27 vs 2.33, respectively) (data not shown).

How and where (in-hospital vs outpatients or PHC) patients with potentially severe disease, such as those seen in QDUs, are managed in different countries seems to vary widely. Although there are few reports on this topic,[19,20] these variations might be due, among other reasons, to guidelines for invasive diagnostic procedures and departmental and hospital traditions. Our findings may result in a shift in the paradigm of hospitalization for the diagnostic evaluation of patients with severe conditions, who are often hospitalized and, in some cases, studied in naive conditions (eg, anemia). Our results have already resulted in policy changes, since, increasingly, patients are referred directly from the ED or PHC centers to the QDU rather than being hospitalized,

TABLE 5. Mean Costs (Euros) of Hospitalization and Quick Diagnosis Unit

			Cost per Process*	
	Hospitalization (1-day stay)	QDU (1 visit)	Hospitalization	QDU
Staff salary†	260.94‡	58.79	2264.96	182.84
Complementary tests†	53.73	158.12	466.38	491.75
Stock†	15.27	0.84	132.54	2.61
Pharmacy†,§	0.97	0.15	8.42	0.47
Medical gases	0.02	NA	0.17	NA
Catering	15.23	NA	132.20	NA
Cleaning	8.78	4.47	76.21	13.90
Laundry	5.11	0.23	44.35	0.72
Maintenance	0.47	0.28	4.08	0.87
Communications	0.31	0.29	2.69	0.90
Mail	0.00	0.00	0.00	0.00
Depreciation	2.52	1.26	21.87	3.92
Travel‖	NA	1.4	NA	4.35
Total	363.35	225.83	3153.87 (SD: 910)	702.33 (SD: 610)

NOTE: Mean stay: hospitalization, 8.68 days; QDU, 3.11 visits.
Abbreviations: NA, not applicable; QDU, quick diagnosis unit; SD, standard deviation.
* Admission to discharge episode.
† Direct costs.
‡ Salary of all the staff for a single stay of 12.5 patients.
§ Includes blood transfusions.
‖ Includes costs of patient transportation to and from the QDU, and costs of accompanying personnel.

with the consequent savings in hospital beds and costs. Although, ideally, the QDU workup should be led by the primary care physician, waiting times for diagnostic tests are inappropriately long, as mentioned above. A successful reform would likely require better, more agile coordination between PHC and hospital settings, with quicker access to diagnostic procedures from PHC centers.

Ruling out cancer and, indirectly, easing the uncertainty and fear caused by suspected malignancy in patients awaiting diagnostic confirmation is one of the main QDU objectives.[21] Cancer is the most common diagnosis (nearly 20% of patients) in Spanish QDUs.[2,3,17] According to the Strategy on Cancer of the Spanish National Health System 2006, "every patient with a well-founded clinical suspicion of cancer must undergo a first confirmatory diagnostic test within 15 days of the suspicion."[22] Our QDU patients received a final diagnosis of cancer in a mean of 11.82 days (waiting time plus evaluation period) (data not shown).

Due to unacceptable outpatient delays, most patients with suspected cancer are hospitalized directly from outpatients for the diagnostic workup,[17] although this may be inappropriate in patients who are still practically asymptomatic. Inappropriate use of acute hospital beds, measured by different instruments, ranges from 6% to >20%,[23–26] with the most common reason being programmed hospitalization solely for diagnostic tests. Twenty-eight percent of hospital admissions to a public hospital in England in 2000 were reported as inappropriate, mainly because diagnostic tests or treatment could have been made on an outpatient basis. [25]

QDU may be inappropriate outside publicly funded health systems. The QDU model could be useful, for example, in the United Kingdom, Italy, Canada, and Latin-American countries; overcrowding and long waiting lists in PHC, and suboptimal coordination between primary and hospital care, means patients with suspected severe disease, including those in good health, are hospitalized for diagnostic tests, aggravating overcrowding and increasing costs.[17] However, in countries with mainly private healthcare systems, QDUs created to reduce health costs or free hospital beds may not be as relevant. In the United States, although day hospitals and urgent care units provide similar care to QDUs (at least in urban areas), most insurers would not cover such admissions without clinical urgency, while access and efficient, streamlined care, is a major concern.

The exclusion criteria, which were based on the ED/QDU physician's judgment, are a limitation of the study. This might be circumvented by a randomized study evaluating 2 cohorts prospectively, although there would still be patients whose clinical status would require hospitalization and exclusion from QDU evaluation.

In conclusion, QDUs can manage the diagnosis of patients with potentially severe diseases equally as well as traditional hospitalization and saves costs. QDU patients expressed a high degree of satisfaction, with most preferring this model to hospitalization.

Disclosure: Nothing to report.
Ethical approval: Ethics committee approval was obtained to conduct the telephone survey (see Methods).

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