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Designing hospital services: findings from a prevalence study on clinical and care complexity in the Internal Medicine Units of Bologna's Local Health Authority

Sofia Mazzoli[1], Matteo Ricci[1], Chiara Golfieri[2], Federica Canto[2], Monica Paciotti[2], Primiano Iannone[2], Vincenzo Carnuccio[2], Claudio Lazzari[2], Davide Gori[3], Flavia Rallo[2]

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Abstract

Introduction. *Hospital services face significant challenges: responding to patients' increasingly complex care and assistance needs and optimizing the scarce resources available. In this context, the following study aims to map and analyze the clinical and care complexity required by patients admitted to the Internal Medicine Units of the Local Health Authority of Bologna through a variant of the Triage in Corridor tool.*
Study design. *Prevalence Study.*
Methods. *Two measurements were carried out at six Internal Medicine Units of the Ospedale Maggiore (Main Hospital with the role of Hub hospital) and six Internal Medicine Units of six Spoke hospitals of the Local Health Authority of Bologna. The National Early Warning Score and the Assistance Dependency Index scores were measured and then combined in a variant of the Triage in Corridor tool to evaluate the intensity of care required by patients.*
Results. *Data were collected from 342 patients at the first and 319 at the second measurements. In the Hub hospital, 33.1% of patients had low levels of modified Triage in Corridor at first and 29.3% at the second measurements, while in the Spoke hospitals, it was 37.2% and 39.0%, respectively. Intermediate levels included most patients: in the Hub hospital, 49.7% at the first measurement and 47.6% at the second, while in the Spoke, it was 46.1% and 47.1%, respectively. High levels affected 17.2% of patients at the first measurement in the Hub hospital and 23.1% at the second measurement, compared with 16.8% and 14.0% in the Spoke hospitals.*
Conclusion. *The results of this study indicate that almost half of the patients admitted to the Internal Medicine Units included in the study had a modified Triage in Corridor medium level regarding the intensity of care required. Patients with a low level represented approximately one-third of the total, opening the doors to alternative scenarios to the traditional acute hospital where this type of patient can be assisted.*

[1] *Section of Hygiene and Preventive Medicine, ALMA MATER STUDIORUM-University of Bologna, Italy*
[2] *Ospedale Maggiore "Carlo Alberto Pizzardi", Local Health Authority of Bologna, Italy*
[3] *Department of Biomedical and Neuromotor Sciences, ALMA MATER STUDIORUM-University of Bologna, Italy*

Sofia Mazzoli and Matteo Ricci contributed equally to this work.

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Introduction

Hospital services today face two critical challenges. The first is the need to address the evolving and increasingly complex care requirements of patients, many of whom are elderly, frail, and living with chronic conditions (1,2). The second is the pressing need to optimize the utilization of limited healthcare resources to effectively meet these demands (3). Studies conducted in European and North American healthcare systems suggest that up to one-third of acute hospital admissions could be managed more appropriately in alternative care settings, such as intermediate care facilities or community-based services (4,5). These findings highlight the need for a more nuanced approach to patient management, incorporating non-acute care settings to reduce pressure on hospitals and improve patient outcomes, prompting an increasing call for the reorganization of healthcare systems to better address both care complexity and resource optimization (4,5).

In response to this call, the Italian healthcare system is undergoing a shift towards a more integrated approach, as reflected in the reorganization of the territorial care outlined in Ministerial Decree No. 77 of 2022 (6). This reform defines innovative, non-acute settings, such as the Community Hospitals (Ospedali di Comunità, OSCO), designed to provide an intermediate level of care between home care and acute hospital services for patients who are clinically stable but still require ongoing medical support (7). A reorganization of this magnitude requires an assessment of the health needs of the population it serves. Increasing evidence indicates that patient complexity should be evaluated across both clinical and care dependency dimensions to enhance resource planning and care-setting decisions (8). In this regard, various tools have been proposed to quantify complexity, especially in acute care settings, but their use in real-world hospital environments remains fragmented and often not standardized.

In the area of Bologna, located in Northern Italy, an analysis of the healthcare needs and inequalities of citizens has already been conducted (9). However, a comparable analysis focusing specifically on hospitalized patients, particularly those within Internal Medicine Units, where the burden of chronic conditions and care complexity is most pronounced, still waits to be done (10,11). This gap in the current literature is of particular importance, as identifying the patients in Internal Medicine Units who could be appropriately treated in non-acute settings, such as OSCO, is essential for optimizing care delivery and aligning services with patient needs.

In this context, the following study aims to analyze the clinical and care complexity of patients hospitalized in the Internal Medicine Units of the Local Health Authority (LHA) of Bologna through a variant of the TriCo (Triage in Corridor) tool designed to improve the appropriateness of patient care settings (12) and ensure the appropriate intensity of care for hospitalized patients in the Italian healthcare system (13).

Methods

Study design

This prevalence study was designed through two specific meetings held in January and February 2023 involving the Medicine Department, Emergency Department, Hospital Medical Directorate, and Rehabilitation Technical and Assistance Department of the Local Health Authority of Bologna.

Two separate measurements were performed for each Internal Medicine Unit of the hospitals of the LHA of Bologna. According to the calendar shown in Table 1, the measurements were performed at 8:00 a.m. and at the patient's bedside. Two nurses from the Bed and Flow Management Unit of the LHA of Bologna were assigned to collect the necessary parameters.

The patients included in this study were admitted to the hospital through the Emergency Room (ER) and other settings, including transfers from other Units of the hospital network. The study included all inpatients in the Internal Medicine Units at 8:00 a.m. on the day of data collection. No exclusion criteria were applied, as the aim was to capture a comprehensive picture of patient complexity across all beds active during the survey.

The Bologna LHA hospital network follows a Hub and Spoke model, where complex cases are concentrated in a central hospital called the Hub, which closely collaborates with suburban Spokes (14). The distribution of bed capacity among hospitals is shown in Table 1.

The included hospitals in the measurements were:

- Maggiore Hospital (Hub): 6 Internal Medicine Units;
- Bazzano Hospital (Spoke): 1 Internal Medicine Unit;
- Bentivoglio Hospital (Spoke): 1 Internal Medicine Unit;

Table 1 - Bed capacity of the Bologna Local Health Authority hospital network.

Total Number of Hospitals Beds		January 2023	February 2023	March 2023	April 2023
Hub hospital	Maggiore Hospital	529	529	529	527
	Bellaria Hospital	68	68	68	68
Spoke hospitals	Bazzano Hospital	55	55	55	55
	Bentivoglio Hospital	131	131	131	131
	Budrio Hospital	53	53	53	53
	Porretta Terme Hospital	67	67	67	67
	San Giovanni in Persiceto Hospital	99	99	99	99
	Vergato Hospital	32	18	18	18

- Budrio Hospital (Spoke): 1 Internal Medicine Unit;
- Porretta Terme Hospital (Spoke): 1 Internal Medicine Unit;
- San Giovanni in Persiceto Hospital (Spoke): 1 Internal Medicine Unit;
- Vergato Hospital (Spoke): 1 Internal Medicine Unit.

Two hospitals were excluded for the following reasons:

- Bellaria Hospital (Hub): at the time of the measurements, there was no Internal Medicine Unit.
- Loiano Hospital (Spoke): at the time of the measurements, it had only an Intermediate Care Unit and no Internal Medicine Unit.

Measurement of clinical and care complexity

The TriCo tool (Triage in the Corridor) is a matrix that combines the MEWS (Modified Early Warning Score) and the IDA (*Indice di Dipendenza Assistenziale* - Assistance Dependency Index) scale to measure the patients' degree of severity and dependency (12,13). Unlike the score previously used in the scientific literature, in this study, the MEWS was replaced by the NEWS (National Early Warning Score) (15). This decision was made because the NEWS score is more comprehensive, allowing for monitoring of oxygen saturation and whether breathing occurs with the aid of oxygen or in ambient air. The choice was also influenced by an organizational document implementing the NEWS score in evaluating Internal Medicine patients at the Bologna Local Health Authority.

The NEWS score is part of the EWS (Early Warning Score) system, a simple aggregating scoring system that allocates a score to physiological parameters; the more the parameter differs from the norm, the higher the score (15), as described in Table 2.

The NEWS score can help determine the deterioration of a patient's condition and define the necessary intensity, frequency, and type of care. This scoring system is categorized into three levels of clinical alert (15):

- Low: NEWS total score 0-4;
- Medium: NEWS total score 5-6;
- High: NEWS total score ≥7.

As shown in Table 3, the IDA index (16) is a tool for evaluating the level of care required by a patient based on a series of dependency variables (17).

Table 2 - NEWS (National Early Warning Score) scoring system.

Physiological parameter	Score 3	Score 2	Score 1	Score 0	Score 1	Score 2	Score 3
Respiration Rate (bpm)	≤8		9-11	12-20		21-24	≥25
Oxygen Saturation (%)	≤91	92-93	94-95	≥96			
Air or Oxygen		Oxygen		Air			
Temperature (°C)	≤35		35.1-36	36.1-38	38.1-39	≥39.1	
Systolic Blood Pressure (mmHg)	≤90	91-100	101-110	111-219			
Pulse (per minute)	≤40		41-50	51-90	91-110	111-130	≥131
Consciousness				Alert			V, P, and U

Notes: V, P, and U=response to Voice, Pain, or no response (Unconsciousness).

Table 3 - IDA (Indice di Dipendenza Assistenziale- Assistance Dependency Index) scoring system

	Score 1 High Dependency	Score 2 High-Medium Dependency	Score 3 Medium-Low Dependency	Score 4 Low Dependency
Nutrition-Hydration	TPN or TEN severe dysphagia	Must be spoon-fed	Needs assistance while eating	Independent
Bladder and Bowel Control	Permanent urinary and fecal incontinence, stoma's management	Sporadic urinary incontinence, necessity of enema	Permanent urinary catheter, bowel movement monitoring	Independent
Hygiene-Comfort	Needs bed baths and lacks collaboration	Needs assistance with personal hygiene, but collaborates with caregivers	Assistance with genital hygiene, regardless of toilet use	Independent
Mobilization	Bedridden	bilization	Walks with the assistance of one or more people	Independent
Diagnostic Procedures	Continuous vitals monitoring	Monitoring at intervals of <1h, weight daily	Monitoring at intervals of <1h, diuresis check	Routine check-up
Therapeutic Procedures	Continuous CVC or Port infusion, stage 4 or multiple bedsores	Non-continuous CVC or PVC infusion, stage 3 bedsores	IV, IM, SC, PO drug administration, stage 2 bedsores	PO drug administration or no therapy, no medication
Sensory Perception	In a soporific state, coma	Continuous spatial and time disorientation, use of sedatives	Sporadic spatial and time disorientation	Alert and oriented

Notes: TPN=Total Parenteral Nutrition; TEN=Total Enteral Nutrition; CVC=Central Venous Catheter; PVC=Peripheral Venous Catheter; IV=Intravenous; IM=Intramuscular; SC=Subcutaneous; PO=Per Os.

The need for assistance is classified into three levels (16):

- Low dependency: IDA total score 20-28;
- Medium dependency: IDA total score 12-19;
- High dependency: IDA total score 7-11.

Combining the levels of the NEWS and IDA score creates the modified-TriCo tool, as shown in Table 4, which is used in this study to measure the patients' need for care intensity.

Data analysis

Categorical variables were summarized as absolute and relative frequencies. Continuous variables were summarized as mean and standard deviation (SD). The Student's t test was used to evaluate differences in means of continuous variables, while the Pearson's chi-square test was used to assess differences in the distribution of categorical variables between groups. The statistical significance level was set at $p<0.05$.

Ethical implications

This research adheres to the principles outlined in the Declaration of Helsinki. The General Data Protection Regulation (EU Regulation 2016/679) states that anonymized data can be utilized for healthcare management, quality assessment, and enhancement purposes without explicit written consent, provided patient privacy is maintained. As the data used in this study are derived from an internal optimization initiative within the LHA, approval from the institutional review board was deemed unnecessary.

Table 4 - Modified-TriCo tool scoring system.

Modified-TriCo	Care Complexity		
Clinical Intensity	IDA 28-20	IDA 19-12	IDA 11-7
NEWS 0-4	Low Level	Medium Level	High Level
NEWS 5-6	Medium Level	Medium Level	High Level
NEWS ≥7	High Level	High Level	High Level

Notes: NEWS=National Early Warning Score; IDA=Indice di Dipendenza Assistenziale- Assistance Dependency Index.

Results

Descriptive Analysis

During the first measurement, 342 patients were hospitalized in Internal Medicine Units. Of these, 151 were admitted to the Hub hospital and 191 to the Spoke hospitals. The Hub's patients have a mean age of 76.5±12.9 years, while Spokes's patients have a mean age of 77.9±12.7 years. Emergency Room (ER) patients are fewer in Maggiore Hospital than in Spokes (65.6% vs. 91.6%, p<0.001). As shown in Table 5, during this first measurement, patients exhibited more comparable scores for the NEWS measurement between Hub and Spokes (p=0.832), as well as in IDA scores (p=0.323).

In the second measurement, 319 patients were admitted to Internal Medicine Units. Of these, 147 were hospitalized at the Hub, while 172 were admitted to Spokes. The mean age of patients admitted to the Hub was 77.3±12.4 years, and those admitted to Spokes hospitals had a mean age of 78.0±12.5 years. During the second measurement, similar to the first, patients coming from the ER were fewer at Maggiore Hospital compared to the Spoke hospitals (70.7% versus 92.4%, p<0.001). During the second measurement, as shown in Table 6, the patients in this study appeared to have comparable NEWS scores between Hub and Spoke hospitals (p=0.679), while there were significant differences with regard to the IDA scores (p=0.006).

In both data sets, it becomes clear that almost all patients admitted to the Internal Medicine Units of Spoke hospitals came from the Emergency Department (91.6% for the first recording and 92.4% for the subsequent one). In contrast, the percentage was significantly lower in the Hub (65.6% in the first recording and 70.7% in the second). Clinically stable patients (NEWS 0-4) constituted the majority in both the Hub (71.5% in the first measurement and 68.0% in the second) and in the Spoke (68.6% in the first measurement and 69.8% in the second), with no statistically significant difference in clinical stability between Hub and Spoke. In terms of need for assistance, however, while most patients in the Hub (53.6% in the first measurement and 51.7% in the second) had an intermediate level (IDA 19-12), in the Spoke there were also many patients with a low IDA (IDA 28-20): while in the first measurement, 46.1% had a low IDA and 48.2% an intermediate IDA but no significant difference emerged between Hub and Spoke (p=0.323), in the second measurement, 50.6% had a low IDA and 44.8% an intermediate level, with a significant difference in IDA score categories between the two types of hospital (p=0.006).

Table 7 and Figure 1 report the scores of the modified version of the TriCo, following the indications of Table 4, by combining the data reported in Tables 5 and 6.

Table 5 - Characteristics of Internal Medicine Units patients in Hub and Spoke hospitals during the first measurement.

First Measurement	Total Hub	Total Spoke	p*
Number of Internal Medicine Units (N)	6 Units	6 Units	
Patients present at 8:00 am (N)	151	191	
Patients Gender (N, %)	M: 75 (49.7%); F: 76 (50.3%)	M: 85 (44.5%); F: 106 (55.5%)	0.341
Patients Age (Mean, SD)	76.6 (12.9)	77.9 (12.7)	0.351
Patients coming from the ER (N, %)	99 (65.6%)	175 (91.6%)	--
Patients coming from another setting (N, %)	52 (34.4%)	16 (8.4%)	<0.001
Patients with News 0-4 (N, %)	108 (71.5%)	131 (68.6%)	--
Patients with News 5-6 (N, %)	25 (16.6%)	34 (17.8%)	--
Patients with News ≥7 (N, %)	18 (11.9%)	26 (13.6%)	0.832
Patients with IDA Score 28-20 (N, %)	58 (38.4%)	88 (46.1%)	--
Patients with IDA Score 19-12 (N, %)	81 (53.6%)	92 (48.2%)	--
Patients with IDA Score 11-7 (N, %)	12 (7.9%)	11 (5.8%)	0.323

Notes: N=Number; %=percentage; SD=Standard Deviation; ER= Emergency Room; News= National Early Warning Score; IDA=Indice di Dipendenza Assistenziale (Assistance Dependency Index); M=Male; F=Female. * p-values obtained using the chi-squared test to compare the distribution of categorical variables and the Student's t-test to compare mean values.

Table 6 - Characteristics of Internal Medicine Units patients in Hub and Spoke hospitals during the second measurement.

Second Measurement	Total Hub	Total Spoke	p*
Number of Internal Medicine Units (N)	6 Units	6 Units	
Patients present at 8:00 am (N)	147	172	
Patients Gender (N, %)	M: 73 (49.7%); F: 74 (50.3%)	M: 83 (48.3%); F: 89 (51.7%)	0.802
Patients Age (Mean, SD)	77.3 (12.4)	78.0 (12.5)	0.617
Patients coming from the ER (N, %)	104 (70.7%)	159 (92.4%)	--
Patients coming from another setting (N, %)	43 (29.3%)	13 (7.6%)	<0.001
Patients with News 0-4 (N, %)	100 (68.0%)	120 (69.8%)	--
Patients with News 5-6 (N, %)	27 (18.4%)	34 (19.8%)	--
Patients with News ≥7 (N, %)	20 (13.6%)	18 (10.5%)	0.679
Patients with IDA Score 28-20 (N, %)	53 (36.1%)	87 (50.6%)	--
Patients with IDA Score 19-12 (N, %)	76 (51.7%)	77 (44.8%)	--
Patients with IDA Score 11-7 (N, %)	18 (12.2%)	8 (4.7%)	0.006

Notes: N=Number; %=percentage; SD=Standard Deviation; E.R.= Emergency Room; News= National Early Warning Score; IDA=Indice di Dipendenza Assistenziale (Assistance Dependency Index); M=Male; F=Female. * p-values obtained using the chi-squared test to compare the distribution of categorical variables and the Student's t-test to compare mean values.

Table 7 - Scores from the modified version of the TriCo tool in the Hub and Spoke hospitals from the Bologna Local Health Authority.

	First Measurement				Second Measurement			
Modified-TriCo	Low Level	Medium Level	High Level	p*	Low Level	Medium Level	High Level	p*
Hub hospital	50 (33.1%)	75 (49.7%)	26 (17.2%)	--	43 (29.3%)	70 (47.6%)	34 (23.1%)	--
Spoke hospitals	71 (37.2%)	88 (46.1%)	32 (16.8%)	0.729	67 (39.0%)	81 (47.1%)	24 (14.0%)	0.054

*Notes: * p-values obtained using the chi-squared test.*

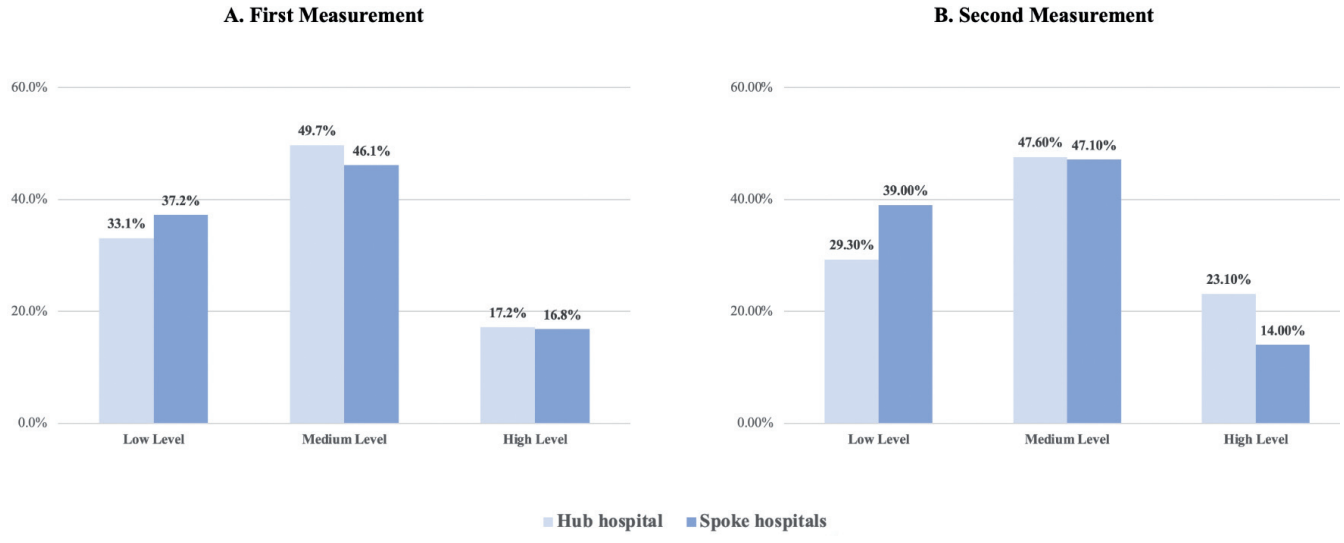

Figure 1 - Bar chart of the scores from the modified version of the TriCo tool in the Hub and Spoke hospitals from the Bologna Local Health Authority at the first (A) and second (B) measurements.

In the Hub hospital, the modified version of TriCo levels is low in 33.1% of patients during the first measurement and 29.3% during the second measurement, while the proportion of patients with low modified-TriCo levels in the Spoke hospitals is 37.2% during the first measurement compared to 39.0% during the second. The medium level of the modified TriCo comprises the highest number of patients: 49.7% in the Hub hospital during the first measurement and 47.6% during the second. In the Spoke hospitals, this figure is 46.1% during the first measurement and 47.1% during the second. Conversely, the highest level of this tool corresponds to the lowest percentage of patients, with 17.2% having a high level in the Hub Hospital during the first measurement and 23.1% during the second. In the Spoke hospitals, these percentages are 16.8% during the first measurement and 14.0% during the second. No statistically significant differences emerged between the two types of hospitals (Table 7).

Discussion

The Italian National Health Service is currently undergoing major restructuring to improve care continuity, especially for patients with chronic and complex needs (18). In this context, understanding the actual care needs of hospitalized patients plays a key role in guiding the appropriate allocation of resources and care environments. (19,20). To address these issues and avoid hospital overload, there is a need to reorganize the territorial care system to better manage chronic and non-urgent conditions that are currently improperly treated in acute hospitals. At the same time, the hospital system is under increasing pressure to respond to workforce shortages and shifting patient profiles. As a result, mapping patient needs has emerged as a key component of this transformation.

This prevalence study was designed and conducted to address these issues, involving seven hospitals (one Hub and six Spokes) and 12 Internal Medicine Units. Two measurements were performed for each Unit, and 661 patients were collected and included in all measurements. Six Units were urban, belonging to the Maggiore Hospital of Bologna (Hub hospital), and six were located throughout the province (now Metropolitan Area) of Bologna (Spoke hospitals).

In both measurements, the number of patients admitted to the Spokes was higher than that of the Hub, with similar mean age and gender distribution. The first finding that stands out and warrants attention is that, in the Spoke hospitals, the rate of access to the Internal Medicine Units via the Emergency Room was significantly higher (91.6% and 92.4% in the first and second measurements, respectively) compared to the Hub hospital (65.6% and 70.7%). This data could indicate that in more rural contexts like the Spokes, access to healthcare services is almost exclusively delegated to the Emergency Room, whereas urban contexts may have different access patterns. However, this data could also be attributed to the greater complexity of the Hub hospital and the types of cases typically treated there. The larger number of specialties and Units with different focuses in the Hub hospital may explain the higher number of transfers from other settings observed by the Internal Medicine Units.

The primary objective of this study was to measure the clinical complexity of hospitalized patients using the NEWS scale (15), to measure the index of patient care seeking using the IDA (16), and then to combine these two instruments to create a single score through a modification of the TriCo (16).

As previously stated, the NEWS score evaluates patients' clinical complexity. It is interesting to note that, for this score, as shown in Table 5 and Table 6, there are no significant differences, both in the first and second measurements, between the Hub and Spoke hospitals. In relation to our survey, clinical complexity is a reasonably stable parameter, indicating no significant differences between the clinical cases admitted to Internal Medicine Units in the Bologna Area. Unlike the NEWS, assistance dependency, measured through the IDA score, shows more significant differences. In fact, during the second measurement, a difference in IDA score categories emerged, with a higher percentage of patients with low scores observed in the Spokes compared to the Hub (50.6% vs. 36.1%). During both measurements, the Hub hospital had more patients with a medium-high assistance dependency than the Spokes, revealing a greater assistance dependency required in the Hub than the Spokes. Combining the two parameters in a modified version of the TriCo, no statistically significant differences emerge between the first and second measurements and between Hub and Spokes.

The fact that about half of the patients (49.7% and 47.6% for the Hub, and 46.1% and 47.7% in the Spoke hospitals) admitted and treated in the Internal Medicine Units fall within the medium level of TriCo is essential for evaluating the composition of these units. This indicates the most common case types that

professionals will treat, enabling the organization of resource allocation, both in terms of personnel and equipment, to ensure care at an intermediate level of complexity.

These results are significant in the context of the reorganization of territorial assistance as outlined in the Ministerial Decree No. 77 of 2022 (6). OSCOs, as described in this Decree, perform an intermediate function between home care and hospitalization to avoid inappropriate hospital admissions and promote protected discharges to settings more suitable for the predominant care needs, clinical stabilization, functional recovery, and regaining of autonomy, all closer to the home environment (6). They are territorial healthcare facilities designed for patients who require low-intensity clinical interventions that could potentially be provided at home but need continuous healthcare assistance, including overnight care, which cannot be provided at home or when the home environment itself is unsuitable (structurally and/or familiarly) (6). According to the evaluation criteria we analyzed for clinical complexity and care dependency, patients with low NEWS/IDA scores and, consequently, low scores of modified TriCo would potentially be eligible for admission to OSCOs. A detailed analysis of the characteristics of patients with low TriCo scores is necessary to assess the appropriateness of this type of setting. These new facilities are in the experimental development phase in the Emilia-Romagna Region. Therefore, it would be beneficial to analyze the patients who could benefit from this type of care intensity directly upon access or, in any case, after a shorter passage in the Internal Medicine Units. Considering our results, the percentage of patients with a low modified IDA score may be higher in the Spoke hospitals, a factor that could be considered when making decisions about the allocation of OSCOs.

Among the strengths of this study is the involvement of all the Internal Medicine Units of the LHA of Bologna active at the time of the study. Each department was included to guarantee a broader mapping. Furthermore, the Units were well distributed at a territorial level, with six belonging to an urban context and six belonging to a more rural context. Among the study's limitations, however, we certainly include the choice to use a modified version of the TriCo as a tool to evaluate the cases of hospitalized patients. This score is used primarily at an Italian level, and for company needs, we used an ad hoc variant to replace the MEWS scale with the NEWS scale. This means that the scale needs to be validated at an international level. Future surveys should be carried out using already validated international tools.

Conclusions

With this study, we have observed, even in a preliminary form, how a substantial proportion of patients admitted to the Internal Medicine Units of both major hospitals and peripheral facilities of the LHA of Bologna present a clinical and care complexity that could potentially be managed in non-acute settings, such as Community Hospitals (OSCOs). The collected data reveal that most patients have intermediate levels of assistance (IDA 19-12) across urban and rural contexts. There is an increasing need for resources to manage patients with low IDA, particularly in the peripheral facilities. These findings suggest that reorganizing the hospital network could benefit from greater utilization of intermediate care models, reducing pressure on acute hospitals and optimizing available resources. The methodology applied, although simple, is highly replicable in other local health systems seeking to assess patient complexity and reorient hospital admissions accordingly. Future research should further explore the effectiveness of OSCOs and other solutions for territorial care and support the integration of practical assessment tools for evaluating patient complexity in the organization of care pathways. Ensuring that each patient receives care in the most appropriate setting is a key challenge for modern healthcare systems, especially considering growing sustainability concerns.

This study presents an example that even simple tools, when applied systematically, can provide valuable insights to guide clinical decisions and support strategic resource allocation. The approach described here may be a helpful starting point for other health authorities aiming to realign hospital admissions and strengthen territorial care services.

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Competing interests: there are no conflicts of interest to declare.

Ethics approval: this research adheres to the principles of the Declaration of Helsinki. The General Data Protection Regulation (EU Regulation 2016/679) states that anonymized data can be utilized for healthcare management, quality assessment, and enhancement purposes without explicit written consent, provided patient privacy is maintained. As the data used in this study are derived from an internal optimization initiative within the LHA, approval from the institutional review board was deemed unnecessary.

Riassunto

Progettare i servizi ospedalieri: risultati da uno studio di prevalenza sulla complessità clinica e assistenziale nelle Unità Operative di Medicina Interna dell'Azienda USL di Bologna

Introduzione. I servizi ospedalieri si trovano a dover affrontare sfide significative: rispondere a esigenze di cura e di assistenza, sempre più complesse, richieste dai pazienti e inoltre cercare di ottimizzare le scarse risorse disponibili. In questo contesto, il seguente studio si propone di mappare e analizzare la complessità clinica e di cura richiesta dai pazienti ricoverati presso le Unità Operative di Medicina Interna dell'Azienda Unità Sanitaria Locale (AUSL) di Bologna attraverso una variante dello strumento Triage in Corridor.

Disegno dello Studio. Studio di Prevalenza.

Metodi. Sono state effettuate due rilevazioni presso sei Unità Operative di Medicina Interna dell'Ospedale Maggiore (ospedale Hub) e sei Unità Operative di Medicina Interna di sei ospedali Spoke dell'Azienda Unità Sanitaria Locale di Bologna. Sono stati misurati i punteggi del National Early Warning Score e dell'Indice di Dipendenza Assistenziale e poi combinati insieme in una variante dello strumento Triage in Corridor, per valutare l'intensità di cura richiesto dai pazienti.

Risultati. Sono stati rilevati i dati di 342 pazienti durante la prima misurazione e di 319 durante la seconda. Nell'ospedale Hub, il 33,1% dei pazienti presentava livelli bassi di Triage in Corridor modificato alla prima misurazione e il 29,3% alla seconda, mentre negli ospedali Spoke erano rispettivamente il 37,2% e il 39,0%. I livelli medi includevano la maggior parte dei pazienti: nell'ospedale Hub il 49,7% alla prima misurazione e il 47,6% alla seconda, mentre negli Spoke erano rispettivamente il 46,1% e il 47,1%. I livelli elevati interessavano il 17,2% dei pazienti alla prima misurazione nell'ospedale Hub e il 23,1% alla seconda, rispetto al 16,8% e al 14,0% negli ospedali Spoke.

Conclusioni. I risultati di questo studio indicano che, quasi la metà dei pazienti ricoverati nei reparti di Medicina Interna inclusi nello studio avevano un livello medio di Triage in Corridor modificato per quanto riguarda l'intensità di cura richiesta. I pazienti con un livello basso rappresentavano circa un terzo del totale, aprendo le porte a scenari alternativi al classico ospedale per acuti dove poter assistere questa tipologia di pazienti.

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Corresponding author: Dr. Matteo Ricci, resident in Hygiene and Preventive Medicine at ALMA MATER STUDIORUM-University of Bologna, Via San Giacomo 12, 40126 Bologna, Italy
e-mail: matteo.ricci18@studio.unibo.it