

# Waiting time for outpatient specialist care in Lombardy Region: evaluating accessibility and quality of information on websites of public health agencies and healthcare structures

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## Abstract

**Background.** Waiting time for outpatient specialist care is an ever-present problem for all Countries with a universal healthcare system. In Italy, information about waiting times must be available on all websites belonging to public health agencies and healthcare structures. The aim of the present descriptive study is to evaluate the accessibility and quality of such information on websites of all public health agencies and healthcare structures in Lombardy Region.

**Methods.** All websites belonging to 8 health agencies (ATS), 27 public hospitals (ASST), 4 research and teaching hospitals (IRCCS) were analyzed using a newly designed 30-item checklist. The items were scored 0/1 and grouped in five categories: Accessibility, Architecture, Content, Interactivity, Utility.

**Results.** In all, 76.3% of websites reported their waiting times directly, but three did not update data at least monthly as required by current legislation. Less than half of websites provided information aimed at raising awareness and tackling no-shows, and only 10.5% explained the role of private practice in public structures when maximum waiting times are exceeded.

**Conclusions.** The lack of exposition of waiting times on some websites belonging to ATS, ASST and IRCCS appears to be a relevant issue. There is also little empowering information that may help tackle waiting times themselves. These results warrant further efforts to improve accessibility, quality and transparency of information for all citizens.

## Introduction

Waiting time for an outpatient specialist service is defined as the time elapsed between the booking of an appointment and the actual carrying out of the specialist visit or examination (1). Long waiting lists and high waiting times are an ever-present

problem for all Countries with a universal healthcare system granting advanced levels of care, and Italy makes no exception (2-4). The Italian Ministry of Health describes waiting lists as “one of the most critical issues of modern healthcare systems, as it compromises accessibility and availability of healthcare services” (5).

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Many regulatory measures have been undertaken over the past twenty years. In particular, the 2010-2012 National Plan for Government of Waiting Lists (*Piano Nazionale di Governo delle Liste di Attesa*, PNGLA) bears three major implications (6). *First*, it defines a list of 43 outpatient services (29 diagnostic tests and procedures, 14 specialist first appointments) for which a maximum waiting time limit ought to be respected in at least 90% of cases. Different thresholds are defined depending on priority classes. *Secondly*, it encourages the purchase of private practice performances in public health structures (*intramoenia*) as a tool for list government. More importantly, it states that if waiting times for public healthcare services should exceed maximum limits for the desired public provider and for all public providers over the whole area of the health agency, citizens may receive such services from the provider they first addressed under a pay-for-performance regime. The provider will be charged of all additional costs other than the ticket. *Thirdly*, it highlights the need to systematically monitor the presence of information about waiting lists and waiting times on all websites belonging to public health agencies and healthcare structures, in order to guarantee transparency and availability to citizens. The Plan establishes that such information “should be given in dedicated website sections and be easily accessible”. This was once again stressed in the latest update of the PNGLA (2019-2021), which also raises the number of monitored outpatient services to 69 and lays the foundation for a National Observatory on Waiting Lists (7).

With over 200 private and public accredited hospitals in Lombardy Region, the Lombardy Health Service (LHS) is a national point of reference and provides high-quality healthcare services to about 10 million residents. With a recent reform in 2015, the LHS adopted a peculiar model based on a clear separation between purchasers and providers. Local health agencies

and hospital agencies were reorganized into eight Health Protection Agencies (*Agenzie di Tutela della Salute*, ATS) dedicated to programming, negotiating, purchasing and coordinating health and social care services, and 27 Health and Social Care Area Units (*Aziende Socio-Sanitarie Territoriali*, ASST) delivering both hospital care and community-based services. Besides public hospitals, healthcare services are provided by four public research and teaching hospitals (*Istituti di Ricovero e Cura a Carattere Scientifico*, IRCCS) (8). Private providers also play a major role, with the expenditure for accredited private assistance being 27.8% of the whole LHS expenditure (9).

Lombardy Region implemented the national PNGLA with its own Regional Plan for Government of Waiting Lists (*Piano Regionale per il Governo delle Liste di Attesa*, PRGLA) (10-12). Briefly, it accepted all indications set by the PNGLA, with some distinctive features: a) a higher goal was set so that maximum waiting time limits ought to be guaranteed for at least 95% of appointments, as compared to 90% set by the PNGLA; b) a project called *Ambulatori Aperti* (literally, “Open Clinics”) was launched in 2014 (13). The project aims at granting variable extra opening times for outpatient specialist care in accredited public and private structures (late in the evening, at weekends and on public holidays); c) a regional information flow called MOSA (*Monitoraggio Offerta Sanitaria Ambulatoriale*, “monitoring of outpatient healthcare service provision”), gathering data from schedules of all public and accredited private providers, became operational in 2015 (14). Thanks to the creation of this flow, a regional booking website was launched in 2017. This website provides homogeneous information about waiting time for healthcare services in the whole Region, which is to be updated daily when operating at full capacity. The first five available empty slots for each outpatient

care service in all regional public and accredited private structures are displayed, and users may proceed with booking if they have a medical prescription; d) with regard to website monitoring, the latest regulation (2018) promotes transparent and appropriate publication of data and reaffirms the need to “provide information about the topic of waiting lists, the whole organization of healthcare service supply, its accessibility, regulatory and organizational innovations and characteristics and conditions of service provision” (12). Indeed, transparent and easily accessible information on websites represents a preliminary tool to empower citizens and allow them to make conscious choices when addressing the LHS for their health needs.

Although the importance of this aspect has been stressed on multiple occasions, studies assessing the quality of website sections dedicated to waiting times are lacking to date. The present descriptive study aims at evaluating the presence, accessibility and quality of information about waiting times for the 43 monitored outpatient specialist services on websites of all public health agencies and healthcare structures through Lombardy Region.

## Methods

In the present descriptive study, the assessment of website sections dedicated to waiting times for outpatient specialist care was made by means of a newly designed checklist. The checklist was arranged by the authors using major literature references with regard to evaluation of quality of websites, both in healthcare and commercial settings (15-18).

The checklist consists of five clusters of six items each: a) accessibility; b) website architecture; c) contents, evaluated in terms of presence, thoroughness, frequency of updating and quality of information; d)

interactivity, user-friendliness and website functionality; e) utility and additional features for citizens. All items are scored 0 (negative/absent) or 1 (positive/present) for a maximum overall score of 30. Items assessing accessibility and availability of websites were scored assuming that the average user has minimal technical requirements and navigation skills. The full checklist with thorough explanation of item definitions and scoring criteria can be found in Table 1.

The analysis of websites belonging to all 8 ATS and public hospitals (27 ASST, 4 IRCCS) was systematically performed in June 2018. In an attempt to reduce subjectivity, the evaluation was made independently by five trained researchers and definitive scores for each item were assigned by reaching consensus.

## Results

The analysis yielded results for 38 out of 39 websites. One ASST born from the fusion of two former hospital agencies was excluded because of a serious lack of identity that hampered the present evaluation. At the time of our analysis, the website had a formal homepage whose sole function was to redirect to the independent websites of its two different structures.

With the application of our checklist, scores obtained by ATS, ASST and IRCCS websites ranged between 9 and 23 (Figure 1). The median score was 16, with an IQR of 3.75.

### *Accessibility*

When analyzing subcategories, accessibility from an external search engine was considered positively for almost all websites (94.7%). Most websites (55.3%) were not optimized for use on mobile devices. Internal search features were found to be less functional, as they were absent or inefficient in 14

Table 1 - Full checklist with item explanation and scoring criteria.

| Category         | Item                        | Explanation  |
|------------------|-----------------------------|--|
| 1. Accessibility | 1.1 External search engine  | The section dedicated to waiting times is readily available in its most updated version via research with the most commonly used web search engine (Google). If a search is performed with the query “[ATS/ASST/IRCCS name] AND (attesa OR liste attesa OR tempi attesa)”, an appropriate result will appear among the first five results.   |
|                  | 1.2 Mobile devices          | Either a mobile version of the website is available or the website is optimized for visualization on mobile devices.   |
|                  | 1.3 Homepage                | The section dedicated to waiting times is clearly identifiable and accessible from the website homepage via banner or link with adequate visibility and font size.   |
|                  | 1.4 Internal search feature | The website provides a search feature, and the search feature is functional. If a search is performed with the query “attesa OR liste attesa OR tempi attesa”, a link to the section dedicated to waiting times in its most updated version will appear among the first five results.  |
|                  | 1.5 Language                | The section dedicated to waiting times is translated in at least one foreign language (e.g. English).  |
|                  | 1.6 Additional aids         | Audio and/or visual additional aids for the user are provided (e.g. possibility to change font size or color contrast).  |
| 2. Architecture  | 2.1 Page layout             | The page layout is clean and functional. Informative structures are placed with a visual hierarchy that organizes content in an easy-to-read fashion and helps users complete their task.  |
|                  | 2.2 Color scheme            | The color choice is appropriate. Content is not hard to read because of poor contrast, unclear format, either too dark or too saturated colors.  |
|                  | 2.3 Page rendering          | The page renders properly and content is consistently readable. Text is neither overlapped nor cut.  |
|                  | 2.4 Headings and titles     | Section headings and titles are named appropriately and are representative of section content.   |
|                  | 2.5 Key contents            | Key contents are clearly visible and recognizable as compared to normal text.  |
|                  | 2.6 Brand identity          | The section dedicated to waiting times must be univocally identifiable as belonging to the agency. If a search is performed with the query “[ATS/ASST/IRCCS name] AND (attesa OR liste attesa OR tempi attesa)” on the most commonly used web search engine (Google), at least one of the first five result titles will have the correct and updated name of the agency or structure.  |
| 3. Content       | 3.1 Basic information       | The section provides basic information about waiting times, waiting lists, demand governance, meaning and implications of priority classes.  |
|                  | 3.2 Linguistic register     | Content is explained with clear words and a reader-friendly style, jargon is avoided whenever possible, abbreviations and technical terms are explained.   |
|                  | 3.3 Waiting times           | Data about waiting times for all monitored outpatient specialist services in the whole territorial area over the last six months are displayed. Any kind of reported data (minimum times, average times) and any kind of monitoring modality ( <i>ex ante</i> , i.e. prospective evaluation of the next available empty slot / <i>ex post</i> , i.e. retrospective collection of the real “appointment delay”) are accepted. |

|                              |  |
|------------------------------|--|
| 3.4 Data quality             | The section provides appropriate and easy-to-read information without overwhelming the user with excessive or overly verbose content.  |
| 3.5 Monthly data update      | Reported data about waiting times are updated at least monthly.  |
| 3.6 Weekly data update       | Reported data about waiting times are updated at least weekly.   |
| 4. Interactivity             | The section provides interactive elements, and the sequence of interaction is logical and user-friendly (e.g. a logical tab order between interactive elements is followed, labels/instructions/icons on interactive elements are clear).  |
| 4.1 User-friendliness        | It is possible to set search criteria that filter results by service type and provider, thus modifying the level of data aggregation.  |
| 4.2 Filter                   | The section includes a contact form or a customer satisfaction survey tool.  |
| 4.3 Feedback                 | Elements which are interactive and clickable (e.g. links, banners) are immediately distinguishable and recognizable.   |
| 4.4 Interactive elements     | All available links are working and updated.   |
| 4.5 Link maintenance         | Whenever a link redirects to a different website or starts download of a document or file (e.g. XLS / PDF extensions), this is clearly indicated in advance.   |
| 4.6 External sources         |  |
| 5. Utility                   | Either the section provides thorough information about booking channels and modalities (at least: via unified booking center - CUP telephone number, booking offices, online) or a banner/link to a dedicated section is always evident.   |
| 5.1 Booking                  | The section provides contacts and/or additional information and details about the providers (at least addresses and phone numbers and/or links to their respective websites).  |
| 5.2 Providers                |  |
| 5.3 Regional website         | The section provides a link to the Lombardy Region Healthcare website section dedicated to the MOSA flow ( <a href="https://www.prenotalute.regione.lombardia.it/sito">https://www.prenotalute.regione.lombardia.it/sito</a> or alternatively <a href="https://www.crs.regione.lombardia.it/sanita">https://www.crs.regione.lombardia.it/sanita</a> ). |
| 5.4 <i>Intramoenia</i>       | The section informs users that if waiting times for public healthcare services exceed maximum limits over the whole ATS territory, they may receive the services from the public provider they first addressed under a pay-for-performance regime, the provider being charged of all additional costs.   |
| 5.5 <i>Ambulatori Aperti</i> | Either the section provides information about the “Ambulatori Aperti” project initiated by Lombardy Region (adherent providers, timetables, booking methods), or a banner/link to a dedicated section is always evident.   |
| 5.6 Empowerment              | The section provides information aimed at educating and empowering users in order to raise awareness about the issue of waiting times, govern demand and tackle no-shows.  |

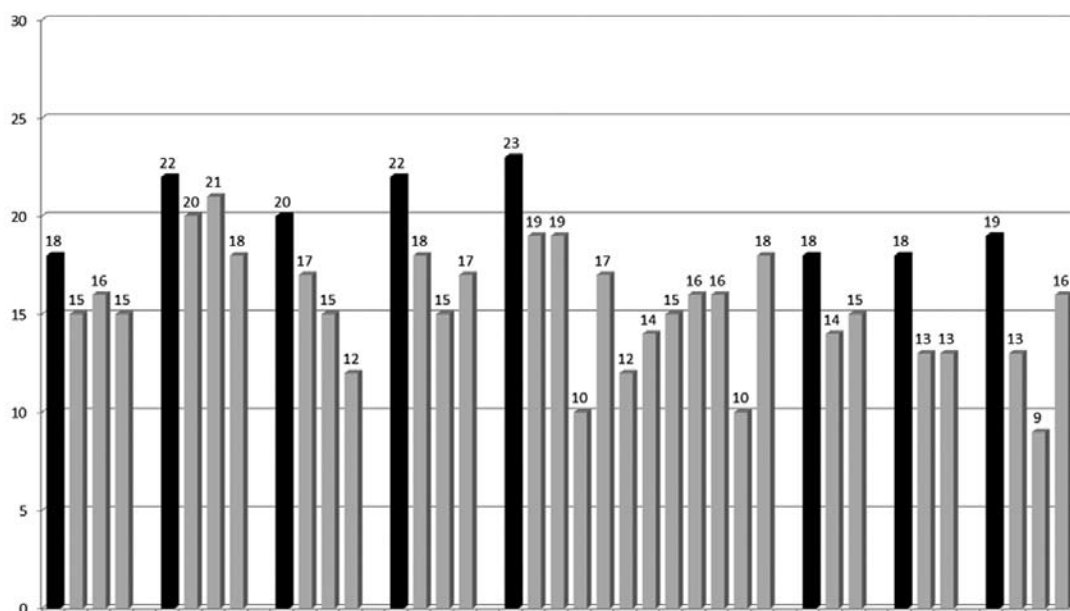


Figure 1 - Bar chart reporting the total score for every website (ATS: black bars; ASST/IRCCS: grey bars).

out of 38 websites. Only 36.9% of websites had the waiting time section clearly visible and accessible from their homepages. None of the websites offered a dedicated section in English, thus limiting access to the non-Italian speaking users. Additional aids (mostly size and color contrast change) were provided by 17 websites (44.7%).

### Architecture

Webpage architecture was found to be satisfactory overall. Although 14 out of 38 websites were judged to have poorly designed and confusing page layout, the other parameters (color scheme, page rendering, headings and titles) were considered appropriate for most websites. Nonetheless, key contents were poorly outlined in more than half of cases. More importantly, not all websites showed a clearly defined brand identity, which was missing in 4 cases (10.5%).

### Content

Most websites provided at least basic information about waiting times and

government of waiting lists (76.3%). However, only 20 out of 29 used a linguistic register that was judged to be easily understandable. In all, 29 out of 38 websites (76.3%) reported their waiting times directly, but three of them did not update data at least monthly as required by current legislation. Two websites, on the other hand (5.3%), were most successful and updated their data at least weekly. Any kind of reported data (minimum time, average time) and any kind of monitoring modality (*ex ante*, *ex post*) were considered acceptable. What mostly lacked was data quality, as most websites (84.2%) provided waiting times as downloadable tables that could not be filtered and might be hard to read.

### Interactivity

Interactivity was found to be rather weak. Only six out of 38 websites offered a filter functionality when displaying waiting times

Table 2 - Subtotal and total scores (median, Q1-Q3) obtained by all websites and by groups.

|               | ALL,<br>median (Q1-Q3) | ATS,<br>median (Q1-Q3) | ASST / IRCCS,<br>median (Q1-Q3) |
|---------------|------------------------|------------------------|---------------------------------|
| Accessibility | 3 (2 - 4)              | 4 (3.75 - 4.25)        | 2 (2 - 3)                       |
| Architecture  | 5 (4 - 6)              | 6 (5.75 - 6)           | 4.5 (4 - 5)                     |
| Content       | 3 (2 - 4)              | 5 (4.25 - 5)           | 3 (2 - 3.75)                    |
| Interactivity | 3 (3 - 4)              | 4 (4 - 5)              | 3 (2 - 3)                       |
| Utility       | 3 (2 - 4)              | 2 (1.75 - 2.25)        | 3 (2 - 4)                       |
| <b>TOTAL</b>  | <b>16 (14.25 - 18)</b> | <b>19.5 (18 - 22)</b>  | <b>15 (13.25 - 17)</b>          |

and adopted a user-friendly approach to interactivity. It should be emphasized that 8 out of 38 websites offered a feedback functionality, thus allowing the user to ask for questions or judge the webpage. Links were evident and working in most cases, with only 15.8% of websites containing expired or non-functioning links. Seven websites did not warn the user about elements that started unintended download of documents when clicked on.

### Utility

Not all websites gave information about booking or a direct link to their booking section, which lack in 39.5% of cases. Further information about providers was also lacking on 23.7% of websites. Only 18 out of 38 websites provided a link to the regional booking website. Similarly, only 18 websites gave information about demand government and explained the importance of avoiding no-shows by cancelling previously booked appointments when appropriate. Information about the *Ambulatori Aperti* project was missing in 71.1% of cases, and only four out of 38 (10.5%) explained the role of private practice in public structures when maximum waiting times are exceeded.

### Differences between ATS and ASST/IRCCS

When comparing results between “purchasers” (ATS) and “providers” (ASST/IRCCS) of healthcare services, ATS websites obtained a higher median total score than ASST/IRCCS (19.5, IQR 4 vs 15, IQR

3.75). In each of the eight territories, the ATS website scored better than its related ASST/IRCCS (Figure 1). When considering single categories, the median subtotal scores of ATS websites were still generally higher than those of ASST/IRCCS. The only exception was Utility, where ASST/IRCCS obtained a higher median score than ATS (Table 2, Figure 2). The proportion of websites scoring positively was higher among ATS than ASST/IRCCS for most items (Table 3). This was especially true for “accessibility from homepage” (8/8 vs 6/30), “key contents” (8/8 vs 10/30), “page layout” (8/8 vs 16/30), “linguistic register (7/8 vs 13/30), “data quality”, “user-friendliness” and “filter” (all 6/8 vs 0/30).

### Discussion

Long waiting lists and high waiting times for healthcare services are a relevant public health issue in Italy. Exceeding maximum waiting times for outpatient specialist care has a negative impact on citizens’ satisfaction and their perception of the quality and good functioning of the Italian National Health Service (19-23). Many successful strategies for the government of waiting lists rely on effective and transparent communication to citizens and patients. Websites should grant ready access to complete information about waiting times for outpatient specialist care and booking modalities. Nowadays, information technology is a widespread tool

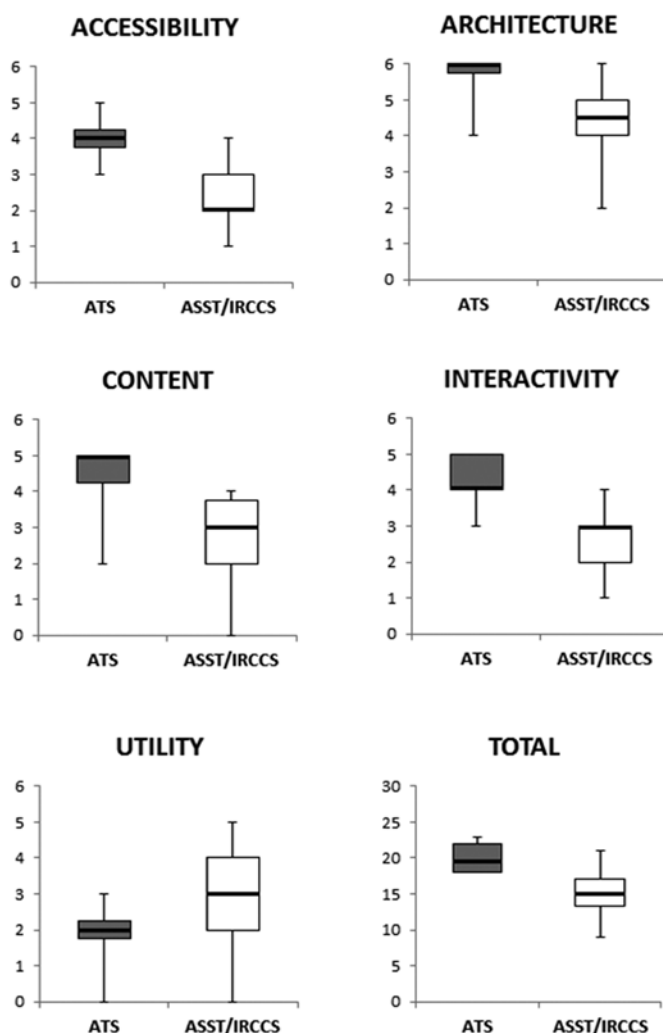


Figure 2 - Box-and-whisker plots illustrating the distribution of sub-total and total scores for ATS and ASST/IRCCS websites.

across people of all ages. Approximately 50% of people aged 50 years and over look for health information online and change their behaviors based on their findings (24). The use of e-health is also a criterion for the international comparative analysis of healthcare systems (25) and for the evaluation of implementation of the European Charter of Patients' Rights (26, 27). Therefore, a well-structured website with an accessible and interactive interface may become an instrument for health institutions to spread a

large amount of information and effectively gain patients' confidence (28). Indeed, our study performed on the websites of all public health agencies and healthcare structures in Lombardy Region shows that a large investment has been made on this kind of technology.

#### *Accessibility and webpage design*

Our analysis shows that the section dedicated to waiting times is quite easily accessible on most of the websites (via home



Table 3 - Raw number and proportion of ATS and ASST/IRCCS websites fulfilling the score for every item.

|               |                          | ALL, n (%) | ATS, n (%) | ASST / IRCCS, n (%) |
|---------------|--------------------------|------------|------------|---------------------|
| Accessibility | External search engine   | 36 (94.7)  | 8 (100.0)  | 28 (93.3)           |
|               | Mobile devices           | 17 (44.7)  | 6 (75.0)   | 11 (36.7)           |
|               | Homepage                 | 14 (36.9)  | 8 (100.0)  | 6 (20.0)            |
|               | Internal search feature  | 24 (63.2)  | 6 (75.0)   | 18 (60.0)           |
|               | Language                 | 0          | 0          | 0                   |
|               | Additional aids          | 17 (44.7)  | 4 (50.0)   | 13 (43.3)           |
| Architecture  | Page layout              | 24 (63.2)  | 8 (100.0)  | 16 (53.3)           |
|               | Color scheme             | 35 (92.1)  | 8 (100.0)  | 27 (90.0)           |
|               | Page rendering           | 34 (89.5)  | 6 (75.0)   | 28 (93.3)           |
|               | Headings and titles      | 32 (84.2)  | 7 (87.5)   | 25 (83.3)           |
|               | Key contents             | 18 (47.4)  | 8 (100.0)  | 10 (33.3)           |
|               | Brand identity           | 34 (89.5)  | 8 (100.0)  | 26 (86.7)           |
| Content       | Basic information        | 29 (76.3)  | 8 (100.0)  | 21 (70.0)           |
|               | Linguistic register      | 20 (52.6)  | 7 (87.5)   | 13 (43.3)           |
|               | Waiting times            | 29 (76.3)  | 6 (75.0)   | 23 (76.7)           |
|               | Data quality             | 6 (15.8)   | 6 (75.0)   | 0                   |
|               | Monthly update           | 26 (68.4)  | 6 (75.0)   | 20 (66.7)           |
|               | Weekly update            | 2 (5.3)    | 1 (12.5)   | 1 (3.3)             |
| Interactivity | User-friendliness        | 6 (15.8)   | 6 (75.0)   | 0                   |
|               | Filter                   | 6 (15.8)   | 6 (75.0)   | 0                   |
|               | Feedback                 | 8 (21.1)   | 1 (12.5)   | 7 (23.3)            |
|               | Interactive elements     | 35 (92.1)  | 7 (87.5)   | 28 (93.3)           |
|               | Link maintenance         | 32 (84.2)  | 6 (75.0)   | 26 (86.7)           |
|               | External sources         | 31 (81.6)  | 8 (100.0)  | 23 (76.7)           |
| Utility       | Booking                  | 23 (60.5)  | 2 (25.0)   | 21 (70.0)           |
|               | Providers                | 29 (76.3)  | 5 (62.5)   | 24 (80.0)           |
|               | Regional website         | 18 (47.4)  | 4 (50.0)   | 14 (46.7)           |
|               | <i>Intramoenia</i>       | 4 (10.5)   | 1 (12.5)   | 3 (10.0)            |
|               | <i>Ambulatori Aperti</i> | 11 (28.9)  | 1 (12.5)   | 10 (33.3)           |
|               | Empowerment              | 18 (47.4)  | 2 (25.0)   | 16 (53.3)           |

page, internal search function or external search engine). In all ATS websites, the section is clearly identifiable and accessible from the homepage via a banner or link with adequate visibility and font size. As for ASST/IRCCS, in 80% of their websites the section dedicated to waiting times cannot be accessed directly from the homepage and is only reachable within two or three clicks via related sections, i.e. “Booking” or “Transparent Administration”. This may be explained by the primary role of these structures as providers of healthcare

services. Accessibility from mobile devices remains suboptimal at present. Less than half of websites have a mobile version or are optimized for visualization on mobile devices. This aspect warrants special attention and rapid improvements, considering that mobile phones are now more frequently used by the elderly than PCs or laptops (29, 30).

#### *Content and user-friendliness*

In a 2010 report by the Italian National Agency for Regional Healthcare Services (AGENAS), it was estimated that 63.3% of

the Italian population lived in a territory that granted online information about waiting times (31). The latest nationwide inquiry assessing the presence of information about waiting times on public healthcare websites was also made by the Italian Ministry of Health in 2010. At that time, only 95 out of 166 investigated local health agencies (57%) and 40 out of 85 investigated public hospitals (47%) published waiting times for healthcare services on their websites. In particular, 75% of websites in Lombardy Region presented information about waiting times, with a great discrepancy between local health agencies and public hospitals (100% vs 62%) (32). Compared to those findings, all websites of public health agencies and healthcare structures in Lombardy now have a dedicated section and provide information about waiting times either directly or indirectly via link to hierarchically superior websites. However, only 29/38 websites report their waiting times directly. Six ATS publish data about their own waiting times for outpatient specialist care, whereas the other two only redirect to the regional booking website where information from all structures is gathered via the MOSA flow. From a certain perspective, this may represent the best choice in the long term and was considered positively by scoring the appropriate item in the Utility section. Nonetheless, at the time of the present analysis, the MOSA flow and the regional booking website are not fully operative because of missing information, unpublished schedules and lack of real-time updates. Considering that current legislation requires illustration of waiting times on all websites, indirect connection via link to the MOSA flow cannot be considered sufficient and was scored as 0. The same considerations apply to ASST/IRCCS, for which redirecting to the website of their own ATS instead of displaying information about their respective territories cannot be strictly considered as a shortcoming, but was still scored as 0.

Among websites directly exposing waiting times for outpatient specialist care, three do not update their data at least monthly, as required by current legislation. On the other hand, two websites were rewarded for updating their data weekly. Of course, these update rates are not enough to keep up with the rapid changes and fast dynamics of booking for outpatient specialist services. Therefore, they can only be considered positively so long as we are waiting for real-time updates, which will only be achieved by optimizing the MOSA flow.

Eight websites have decided to implement a contact form or a customer satisfaction survey tool. Although these functions are frequently used in English-speaking countries, they have only recently made their appearance on the websites of Italian public administrations, which is to be valued as a plus.

#### *Utility and additional features*

In 60.5% of website sections dedicated to waiting times, either thorough information about booking modalities is given directly or a link to the "Booking" section is evident. This values the role of the website as a two-way communication channel and appears to be extremely useful for the user by following an information-to-action logical flow. Information aimed at raising awareness and tackling no-shows and details about the role of private practice in public structures lacked in half of cases. This remarks the need of further efforts to guarantee complete, transparent and empowering information to all citizens.

#### *Limitations of the study*

Several considerations may be made about the validity of the present study. We used a newly designed checklist that has yet to be validated. Our analysis was performed to evaluate only sections dedicated to waiting times and not the whole websites. To our knowledge, no dedicated tool for this

kind of analysis has been proposed in the literature. Nonetheless, we adapted previously published models for evaluation of websites to the aims of the present study. The heuristic model proposed by Molich & Nielsen is perhaps the best known and used to date (33, 34). This tool has undergone several revisions over the years up to the recent 2012 evidence-based heuristics by Petrie & Power. It was developed for evaluation of websites with a high level of interactivity but has recently been taken into consideration for the evaluation of healthcare websites, proving to be equally valid (35).

We acknowledge that the choice of quantity and nature of items is purely subjective. We value the fact that the chosen items could reflect the citizens' perspective by giving a realistic snapshot of the main difficulties that an average user may have to face. It should be outlined that these are mostly suggestions and by no means an obligation for health agencies and healthcare structures. Therefore, our intent is not to criticize but just to offer a chance for improvement to maximize benefit for the citizens.

## Conclusions

Online communication of waiting times for outpatient specialist care is a priority for public health agencies and healthcare structures, which has been underlined by several national and regional regulations published over the past decades in Italy. Although many improvements have been made, the present analysis highlights that more attention should be paid to modalities and timing of publication of waiting times on websites of public health agencies and healthcare structures in Lombardy Region. Until full functionality of the regional booking website is achieved, the lack of exhibition of waiting times on some websites belonging to ATS, ASST and IRCCS appears to be a relevant issue. There is also little empowering

information that may help govern waiting lists themselves. These results warrant further efforts to improve the quality of websites and the transparency of information for all citizens, thus increasing their confidence in the National Health Service.

## Riassunto

*Tempi di attesa per le prestazioni specialistiche ambulatoriali in Regione Lombardia: analisi dell'accessibilità e della qualità delle informazioni reperibili sui siti web delle aziende sanitarie pubbliche lombarde*

**Premessa.** I tempi di attesa per le prestazioni specialistiche ambulatoriali costituiscono una problematica ubiquitaria in tutti i Paesi basati su un sistema sanitario a carattere universalistico. In Italia, le informazioni relative ai tempi di attesa devono essere pubblicate su tutti i siti web delle aziende sanitarie. Lo scopo del presente studio descrittivo è di valutare l'accessibilità e la qualità di tali informazioni sui siti web delle aziende sanitarie pubbliche della Regione Lombardia.

**Materiali e metodi.** Una griglia composta da 30 elementi di valutazione è stata designata *ad hoc* per l'analisi dei siti web delle 8 agenzie di tutela della salute (ATS), delle 27 aziende socio-sanitarie territoriali (ASST) e dei 4 istituti di ricovero e cura a carattere scientifico (IRCCS) che insistono sul territorio lombardo. Le dimensioni di analisi, a ciascuna delle quali viene attribuito un punteggio di 0 o 1, sono distribuite in cinque categorie: Accessibilità, Architettura, Contenuti, Interattività, Utilità e funzioni aggiuntive.

**Risultati.** Il 76,3% dei siti web presentava direttamente i propri dati relativi ai tempi di attesa; tuttavia, in tre casi tali dati non risultavano essere aggiornati su base mensile come richiesto dalla vigente normativa. Meno della metà dei siti forniva informazioni allo scopo di generare maggior consapevolezza nell'utenza e limitare il fenomeno del "no-show". Solo il 10,5% chiariva il ruolo dell'*intramoenia* nelle strutture sanitarie pubbliche in caso di mancato rispetto dei tempi massimi di attesa previsti.

**Conclusioni.** Le mancanze emerse riguardo alla pubblicazione dei tempi di attesa per prestazioni ambulatoriali sui siti web di ATS, ASST e IRCCS pubblici lombardi costituiscono una problematica degna di nota. Appare inoltre carente il livello di informazioni volte a sensibilizzare l'utenza ed arginare il problema stesso dei lunghi tempi di attesa. Questi risultati indicano la necessità di maggiori sforzi futuri per migliorare l'ac-

cessibilità, la qualità e la trasparenza delle informazioni rivolte ai cittadini.

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