

Visual and spatial design for proximity healthcare: the meta-design book of “Case e Ospedali di Comunità” of Regione Lombardia

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The Covid experience has prompted public institutions to develop and try new strategies better to address healthcare facilities to the citizens and their community: the so-called proximity healthcare. Differently from the huge public hospitals, proximity healthcare aims to treat the user as a guest, conveying a feeling of home and hospitality. Like landmarks, these structures could be considered territorial references, inclusive and enabling support to patients and the local community. In addition, the act of caring and responsibility towards others and the community is fostered through the inclusion and welcoming of the individual within the community itself. Regione Lombardia received funds from the National Recovery and Resilience Plan to build and implement a service, bring it closer to its citizens, and create a network of accessible facilities. The projects used the competencies of different departments of Politecnico di Milano to give shape to these new services developing their organization as well as their visual and spatial identity. The paper is organised in two parts, a first part on the project and process and a second part on the type of output and its contents, as well as conclusions it focuses on the intervention of the Design Department of the Politecnico di Milano, which created a meta-project (with a meta-design book) with spatial and visual guidelines to support the local administrators in giving birth to these new structures and, more in general, to raise awareness in healthcare facilities post-Covid, capable of expressing the identity of these new places (Case and Ospedali di Comunità), implementing the sense of belonging and well-being within the structures. The Meta-design book served as a tool for the horizontal application of a concept in the heterogeneous spatial contexts offered by emerging healthcare facilities. The process allowed researchers to apply tools to support public stakeholders with different degrees of competence and involvement in the design process.

Keywords: *spatial design; visual design; healthcare; design tools; public institutions*



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1 Introduction

The Covid experience has revealed some fragilities of the Italian National Public system in adopting new rules and standards. It also highlighted the weakness of the Public Welfare system in addressing the problems associated with fragility, diversity and loneliness related to the growth of inequalities, the barriers dictated by cultural clustering, and the gap between the resources available (Longo & Barsanti, 2021). A reflection on these issues in the post-emergency condition has prompted the Regione Lombardia to allocate a share of the funds for the recovery plan to define new health infrastructure called “Case e Ospedali di Comunità” - community houses and hospitals (CdCs and OdCs) - to provide citizens with more efficient health protection services.

The recovery plan that is supporting the European Union in reducing the economic and social damage inflicted by the coronavirus health emergency has been agreed upon by the European Commission, the European Parliament, and the leaders of the EU in May 2021. This plan aims to support and establish the underpinnings to make European societies and economies more sustainable, resilient, and equipped to take the opportunities and challenges of the ecological and digital transition¹. Digitalization and innovation, ecological transition, sustainable mobility, education and research, social inclusion, and health are the six missions² on which the Italian government has built the “National Recovery and Resilience Plan” (PNRR) to join Next Generation Eu programme³.

Pursuing the sixth mission health objective, a new model of health structures conceived by Regione Lombardia tried to innovate public policies and encourage collective processes by promoting the active participation of actors of a different nature (Longo & Barsanti, 2021). This new direction has been called proximity healthcare (Longo & Barsanti, 2021). CdCs and OdCs should work with a citizen-centred based approach, through which the public services can proactively intercept, sustain and holistically support the most fragile individuals, considering the single pathologies within the broader clinical and psychological picture of the individual and the general social and health situation of its family environment, mutual understanding and capacity of prompt, capillary and integrated intervention. In doing so, a top-down social innovation methodology (Manzini, 2014) was applied, which recognizes a real problem and the social resources that might be able to solve it, proposing organizational and economic structures that activate these resources; and building (and also communicate through visual tools) an overall vision to connect different local contexts and to orient them coherently.

1.1 The case study: Research project Case e Ospedali di Comunità

The collaboration agreement between the Health Protection Agency of the Metropolitan City of Milan and Politecnico di Milano concerned the project of CdCs and OdCs in the City of Milan, to provide the organizational and spatial concept, the meta-design, and the narration of the regional structures, which would have to embody a permanent point of reference to the population. Indeed, the element distinguishing CdCs from the previous healthcare facilities is the degree of accessibility, acceptance and assumption of responsibility towards the patient. Therefore, the patient should be welcomed into

¹ https://www.agenziacoesione.gov.it/dossier_tematici/nextgenerationeu-e-pnrr/

² <https://italiadomani.gov.it>

³ https://ec.europa.eu/info/strategy/recovery-plan-europe_en

the health facility as a guest and the operator, like a host, welcomes him as a landlord, through a concrete act of acceptance and welcome, guiding his guest inside his home, services, and identity. Considering the user as a guest, establishes a form of reciprocal relationship, a relationship made up of rights and duties (Cavicchi, 2018).

The agreement required several activities to be performed by three different Departments of Politecnico di Milano to manage and design services and visual and spatial guidelines through a multidisciplinary approach:

- the Department of “Management Engineering” has implemented the organizational model for territorial assistance and services;
- the Department of “Architecture, Construction Engineering and Built Environment” contributed to defining the functional meta-design, indicating the architectural-functional design criteria, the structural and technological features;
- the Department of “Design” has elaborated the user experience, the identity project of the internal common spaces, together with the visual identity and the signage, both coordinated and integrated, aimed to conveying the sense of proximity, to foster the sense of community and the territorial assistance through the elaboration of a meta-design book.

1.2 The role of visual and spatial design for navigating the patients and the community

Visual elements have developed from their original objective of raising organizational visibility to a position where they are considered to play a role in conveying organizational strategy (van Riel & Balmer, 1997). Research has highlighted that joint visual and spatial element enhancement strategies can strongly contribute to the comfort and well-being of patients, visitors, and staff members in healthcare settings (Kalantari et al., 2022). Communication design for welfare means focusing on issues concerning the relationship between communication design and society. The role of communication design is to accompany change and provide tools to support relations with citizens (Bucchetti, 2017). Conscious use of visual-structural communication in healthcare structures can become a valuable tool for creative dialogue between various positions, cultural matrices and value systems in decision-making processes involving communication with a high impact on end users (Pensieri, 2009).

Furthermore, for the spatial design, it was required to identify specific aspects of interior space design that align with the concept of quality care to improve both existing and future healthcare facilities. Accordingly to the World Health Organization (2018) “quality care is the degree to which health services for individuals and population increase the likelihood of the desired health outcomes”: it should be affective, safe and most importantly people-centered. In this sense, the meta-design book sought to have the centrality of the person as its “compass”. The research project aimed to establish guidelines for healthcare facility design, consolidate key space design characteristics that support the quality care concept for outpatient facilities, and share the new identity with different stakeholders (political-management-healthcare), focusing on the common spaces, specifically the welcoming and waiting area. The starting point of this new identity was the need to overcome those associations with negative experiences of disorientation, of inaccessibility, of considering the citizens as fragments of issues and not in an integrated way, of considering them detached from a socio-healthcare environment and family context (Kalantari et al., 2022).

The physical environment of healthcare facilities plays an integral role in the patient's overall experience (Stern, 2003; Samah et al., 2013). According to Schweitzer et al. (2004), the hospital environment affects the actions and interactions of patients, their families, and staff members who provide care. Indeed, many studies have shown how ambient environment and interior space arrangements can impact the behaviour and well-being of healthcare users. They can feel more comfortable, relaxed, and secure (Indraprastha & Shinozaki, 2011). Furthermore, the hospital environment has the potential to create a healing atmosphere that could reduce negative psychological impacts such as stress, depression, and anxiety (Ulrich, 1991; Dijkstra, 2006).

2 The Design process

While the Department of "Management Engineering" and the Department of "Architecture, Construction Engineering and Built Environment" contributed to the project by dealing with layouts, services and managerial tasks, the Department of Design research activity, the focus of this paper, has been articulated through four phases:

1. Phase 1: Primary research through literature review and desk research to define the brand identity's main spatial characters and visual elements, selecting homogeneous case studies by function or bringing innovative, high-quality features to the structures covered by this agreement. This phase helped to identify the design elements and best practices to develop the guidelines for the reception and common spaces of the CdC and the related brand identity and signage. This phase has been implemented by field research dedicated to inspecting health facilities with high-quality reception and solid territorial presence. Additionally, expert interviews were conducted to understand and frame the challenge of determining spatial and visual quality necessary to determine the guidelines.
2. Phase 2: Definition of the first draft of the meta-design book to be tested with the first stakeholders. The draft has been tested involving Via Rugabella CdC in Milan (Italy), the first one realized, presenting the communication and the spatial design guidelines through a meta-design book and some dedicated meetings with the RUP - *Responsabile Unico del Procedimento* (the sole responsible for the procedure in the Italian public administration) and some qualified employees.

A preliminary collection of qualitative information on applying the guidelines was performed by distributing a questionnaire, which helped to prepare an interactive workshop with the RUP to improve the meta-design book.

3. Phase 3: Workshop with the stakeholders involved to broaden and improve the experience. The questionnaire's results were shared through an online workshop. The aims of the workshop were the implementation of designerly skills to the technical staff and the improvement of the clarity of the meta-design book. The stakeholders involved in this educational experience had different skills and backgrounds, which positively broadened and improved the experience. Everyone brought a different point of view, allowing a complete vision. Exploring the experiences of different stakeholders in the same project enriched the understanding of the project and developed a more precise assessment of the strengths and weaknesses (Bowen et al., 2013). Unfortunately, the lack of coherence and collaboration between stakeholders, each focusing on different areas, has made the project development process more complex.

Thanks to the workshop, however, it was possible to create a relationship between the different realities who have had the opportunity to confront each other. The workshops gave a further opportunity to iterate findings, discussing contradictory evidence with all stakeholders to determine where priority should be given.

The workshop was articulated with the twofold objective of sharing and deepening the critical issues collected through:

- the in-depth study of the applied guidelines on visual identity and quality of space;
- the implementation and field verification of the meta-project guidelines drawn up.

4. Phase 4: Definition of the final meta-design book.

The illustrative report for the meta-design project guidelines included the analysis of critical issues and viable solutions. From the preliminary collection through the questionnaire and during the workshop, several critical issues common to several facilities emerged. The “application solutions” section in the meta-design document is intended to support all the CdC and OdC during the implementation phase; the main questions, divided into categories, that emerged from the experimentation were included.

2.1 Meta-design book as a design tool

In healthcare, corporate branding promotes specific topics and brings awareness to their reputation, identity, and core values. (Esposito, 2017). The corporate brand is crucial for establishing ties with various stakeholder groups and bolstering corporate communication strategies. A hospital's corporate brand connects with viewers; it communicates to patients and other stakeholders what they may expect from the institution regarding its dedication to meeting their specific requirements. The tool typically used by companies is the corporate image manual, which aims to help them maintain a cohesive image, unifying all its outward communications and information in a solid and consistent graphic system and helping to achieve specific objectives (Meggs & Pelvis, 2006). This kind of manual does not seem to be a sufficient tool when spatial variables referring to varied and complex uses of spaces come into play, mainly when the locations being planned differ in terms of the type of services offered, size and skills of the personnel who will have to apply the rules of use. The designer must develop a fully integrated customer experience within the different locations of the spatial boundaries (Morone, 2016). Morone (2016), for instance, introduces the "concept book" that, unlike a typical technical/corporate/identity manual, outlines the rationale behind design decisions and the overall formalization of the design, pointing to a design solution that expresses the brand through a relational strategy (Morone, 2016). Thus, it is primarily a descriptive instrument. A local architect can interpret following a precisely articulated design concept via the concept book. Furthermore, Morone (2016) argues that concept books are a resource widely distributed by companies and institutions to construct a network of spatial touchpoints that adhere to a shared design concept. Their approaches must account for a model of flexibility between two opposite actions: creating a space for identical and repeatable models and the requirement for variety to emphasize the uniqueness of the products.

Considering the project's complexity and the stakeholders' heterogeneity, a meta-design approach was necessary to assure in different physical and organizational contexts a similar quality of user experience. Complex design challenges need a level of expertise beyond the capacity of any individual, as the information pertinent to the problem is typically dispersed among various stakeholders

possessing diverse perspectives and backgrounds. This collective arrangement forms the basis for a meta-design approach (Fischer, 2003).

Meta-design tackles three requirements for socio-technical environments (Fischer & Scharff, 2000):

- they must be adaptable and develop since they cannot be entirely created before application;
- they must, to some part, evolve in the hands of the users;
- they must be designed to evolve.

Making systems flexible and evolvable by users does not entail handing over responsibility for effective system design to the user. Nevertheless, if the designer's tool does not meet the demands or preferences of the user, then he/she should be able to change the system without always having the developer's aid (Fischer & Giaccardi, 2006).

Considering the need to implement a complex yet evolvable system of directions, the research team identified the "meta-design book" as the design output. Its purpose goes beyond the simple exemplification of graphic elements of institutional identity; it involves a particular methodological translation that indicates a complex system of places, services, signals, visuals and rules. The meta-design book, then, becomes a knowledge artefact that facilitates interactions between project partners. It acts as an operational and integrated communication and spatial system, inducing complex actions that cannot be simplified or reduced to a flat visual book. Through a meta-design tool, users can dynamically and open-ended interact, creating their proposals and even evolving the same contexts and processes (Franzato, 2014).

2.2 Meta-design book: guidelines

The guidelines were developed within two areas of intervention:

- Part 1: Identification and graphics representation of visual identity, the system of signs and wayfinding rules.
- Part 2: Spatial identity - spatial layouts and their integration and interaction with visual signs through meta-design indications

The two parts share the same objectives and characteristic elements to define a unified visual identity of the place, considering the user at the centre of the design process.

User-centred innovation processes provide advantages over manufacturer/product/service-centric innovation processes. Users who innovate and shape the design concept according to their needs can develop exactly what they want (von Hippel, 2005) rather than relying on rigid design solutions that do not fit appropriately into their context.

The project defines the features of the visual identity system and common spaces, which aim is to implement the perception of CdCs and OdCs as places of proximity territorial care that recognise, accompany and support the communities of reference. Therefore, the guidelines in the meta-design book are constructed to transmit the value of hospitality as a strong and recognisable character of identity in different local contexts, favouring attendance by the local population. Increasing accessibility to the social-health services offered by the facility means adopting an inclusive viewpoint for a broad section of the population, which envisages a majority of users consisting of mothers with

children, the elderly, sick and disabled, considering the fragile population not only as a user to be supported but as an active population, enabled to use the facility as autonomously as possible.

The guidelines are articulated through different categories of intervention, which concern:

- functionality and quality in the communication of the identity of the place
- the characters of the interior's common spaces increase the value of the person's experience.

These categories involve different efforts and timeframes for implementation; therefore, they have been (and will be) applied independently in realising the structures, which contemplate different degrees of intervention. Priority was given to visual identity interventions and signposting in cases of "adaptive" conversion of existing structures that are still active, whereas, for the conversion of use of disused structures or the construction of new structures, the guidelines may be adopted in their entirety, including the parts concerning the provision of furnishings and qualification of interior spaces.

'Hospitality' and 'accessibility' are the shared values inspiring the identity and space design guidelines, generating a shared and unified approach from a performance point of view.

These values come from a perspective of intervention that places the user at the centre of his or her fragility and diversity, in the inclusive perspective of 'universal design', centred on patient care.

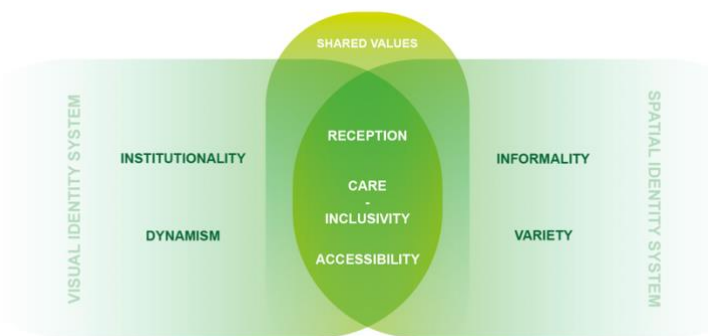


Figure 1. Diagram of shared values with visual and spatial key points

2.3 Meta-design book: visual identity

The system of visual elements wants to communicate a dynamic attitude that supports the structure's ability to respond to the population's current needs, in change and emergency, offering constantly updated services.

The project of the new visual identity for the CdSs and OdCs of the Regione Lombardia innovative centres of care, prevention and health promotion close to the citizen aims at the definition of a coordinated system of visual elements (graphic, chromatic, pictographic and typographic) of simple codification and fruition by the user.

This assumption oriented the design towards non-complex forms, characterised by recurring elements that would dialogue with space and the user in a synchronic manner—all to minimise any sense of discomfort and disorientation potentially perceptible in such contexts.

The healthcare sector is a peculiar sector with ethical issues of great importance linked to emotionality; hence the awareness of having to construct a visual identity that communicates mainly personal experiences and exemplifies the delivery of priority services. Empathy thus becomes the central fulcrum at the basis of a correct and organic construction of a long-term brand reputation per the five key values on which the visual and interior design is based: accessibility, welcome, care, institutionalism and dynamism.

Each choice stemmed from an organic and flexible overall vision that considered the numerous inhomogeneities present in the various infrastructural realities distributed throughout the territory but that was also capable of tracing a common, unifying and compatible principle with the Regione's current institutional communication in both the analogue and digital spheres, anticipating future implementations and evolutions.

The research team considered five key values when designing the identity system. The key values emerged from the preliminary documents of the CdC and OdC project carried out by the Regione Lombardia; the meetings and discussions with managers and offices of the Regione Lombardia ATS Milano and ASST Milano; and the inspection of the CdC via Rugabella (project pilot) in Milan and discussion with staff. The key values are:

- accessibility: identifying a place that is "open", close to the citizen, and strongly connected to the territory where it operates and communicates.
- welcoming: offering citizens the possibility of feeling at ease, identifying the environment as welcoming and familiar, thanks also to adopting a simple and direct "tone of voice", capable of guiding them consciously through the services offered.
- care: understanding the activity of "care" in its positive meaning (care) of deep attention to the multiple social-health aspects required by the citizen such as care, prevention and health promotion.
- institutionality: to declare membership in a virtuous health system such as the regional one (heritage), instilling security and certainty in using services.
- dynamism: to connote different communication supports (touch points), adapting to the various formats and enhancing both editorial-paper and digital-interactive aspects—the ability to adapt over time.

The project started from the research of virtuous case studies relating to visual identity in the health sector both nationally and internationally. Then, the study made it possible to synthesise several visual choices and draw useful guidelines for developing the project, always taking the five previously defined key values as an analytical tool for understanding. This exploration allowed a comparison of the results and a qualitative evaluation of the entities analysed.

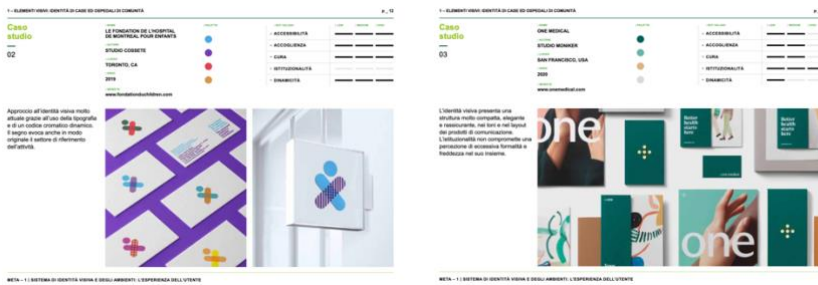


Figure 2. Examples of case studies evaluation using the five values

The mapping of the case studies led to sampling the main colours used for the visual coding of identity systems in the health sector. It is helpful to note, defining the chromatic and material elements to delineate a chromatic code, that cold but reassuring colours are predominant, mainly in the shades of greens and blues (with different saturation and contrast) that create harmony and continuity with the dominant and green shades belonging to the Regione Lombardia's identity.

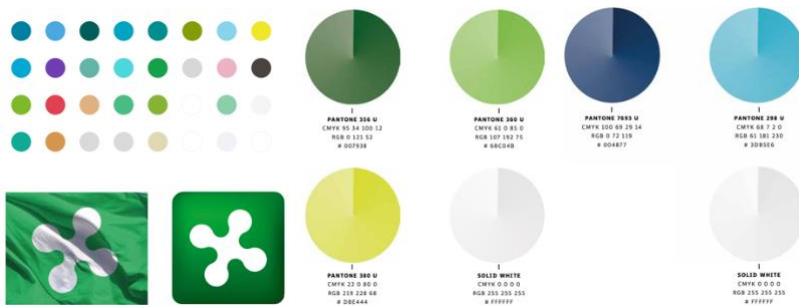


Figure 3. The definition of the chromatic elements for CdCs (green) and OdCs (blue)

The choice of the typeface considered accessibility as a primary value. A typeface that meets the requirement of high readability, especially in cases of low vision and learning disabilities, was therefore identified.

The biancoenero© typeface is designed by Riccardo Lorusso and Umberto Mischi for Biancoenero Edizioni, respecting visual devices that facilitate reading for everyone, especially dyslexic readers.



Figure 4. Specimen of Biancoenero typeface

The definition of the initial elements and the synthesis of the values into a graphic sign led to the graphic realisation of the logos of the CdCs and OdCs. In the designers' intentions, the two logos express openness towards the citizen, security of care, the dynamism of the structures and propensity towards the digital contexts of future services.



Figure 5. Logo of CdCs and logo of OdCs

The two logos then served as a graphic guideline for developing the more structured communication elements linked to the spaces' signage. Thus, a system of pictograms (which take up the graphic stylistic features of the brands, such as the softness of the lines and the use of colours), working in synergy with the typographic elements, gave life to a set of directional and signalling elements capable of merging with the space and with the elements of spatial identity. Particular emphasis has been given to all those elements connecting service personnel and citizens, such as reception counters, counters, and external signage, creating a visual design that in its intentions aims to minimise visual barriers and invite users to take an active role in communication (both requested and provided).

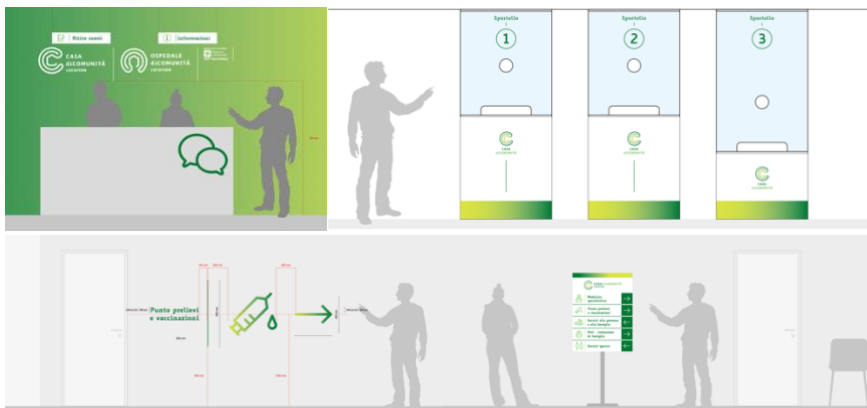


Figure 6. Wayfinding and visual graphics applications

2.4 Meta-design book: spatial identity

The identity project for the interior design of the common spaces - integrated and coordinated with the visual identity project - is oriented towards conveying an idea that the CdCs and OdCs are understood as places of local assistance, landmarks within which the local community recognizes itself and is strengthened. The experience built around the citizen aims to stimulate autonomous use by the user, increasing knowledge of the services offered by the structure and gradually bringing him/her closer to a smart approach.

The spatial identity is characterized by an approach that aims to bring the services offered closer to the patient, making him feel like a guest in a domestic and informal setting; creating welcoming environments that reduce the gap between operators and users by eliminating unnecessary barriers is essential.

The settings presented within the meta-design book shared the same common key values of the visual identity acquired through the case studies analysis:

- accessibility: promoting independent access and full use of spaces and equipment in conditions of safety and self-sufficiency to allow citizens to recognize and access the services offered.
- welcoming: generating a reference place for care and health, in which the environments communicate the intention to meet the citizen to receive him as a guest.
- inclusivity: building a support and assistance system that responds to 'real users' needs, reducing physical, mental and cultural barriers, and placing the patient at the centre.
- richness: offering the citizen a rich experience in his relationship with space, arranging different types of welcoming micro-environments - easily replicable in all structures - defined by heterogeneous furnishings in terms of usability and aesthetics, communicating an identity.
- informality: reducing distances and getting closer to the citizen, making him feel at home so that he can recognize familiar spaces, furnishings and behaviours.

The project's next step required the construction of a quality experience in the user/patient relationship with the physical space of the structure and with the operators to allow the visitor to acquire information and relate to the services effectively and satisfactorily.

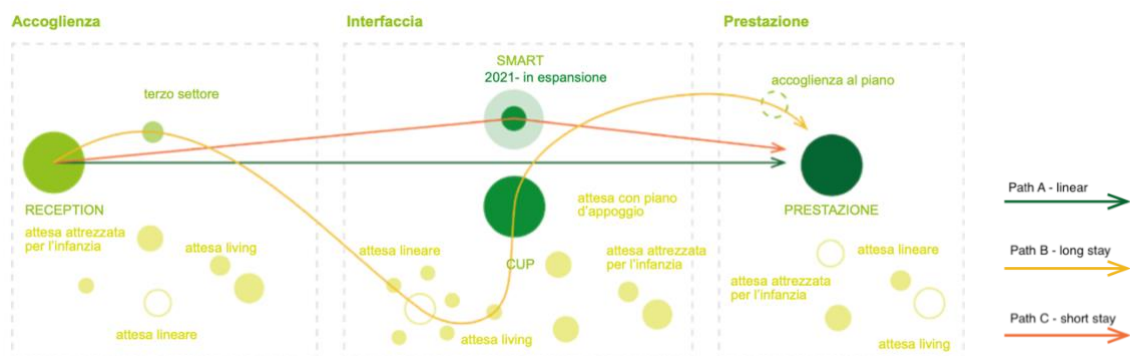


Figure 7. The diagram shows the study of possible user journeys, identifying the key spaces of the project

The guidelines for leading the quality experience provide three levels of indications at different scales of intervention:

- general information about the chromo-material finishing of the interior of the building;
- definition and positioning of micro-environments defined as settings;
- furnishing characteristics.



Figure 8. Renders of the welcoming area

The design of the spaces focuses on the common parts and, in particular, on the welcoming area, interface and waiting area (CUP area), as described below:

2.4.1 Welcoming area

The welcoming area is composed of several settings. The first is the Reception, located near the main entrance and on each floor. It provides a modular counter of two different heights; the lower modules allow people with disabilities and strollers to approach them and are preferably positioned at the ends. The counter may be accessible on both sides to allow the operator to approach the user in case of need.

The second is the Area Smart setting, where it is possible to find the IT totems for booking and collecting reports. The area also consists of tables and seats of different heights, allowing users to carry out various activities, such as completing documents. In this area, it is also possible to insert a variety of furnishings for waiting areas that suggest a welcoming and familiar interior.

Finally, there is the Third Sector setting. This promotional area has a reception counter with a single small workstation that can also be an exhibitor and is free in space. Also, in this case, the counter has double height to accommodate different types of users.



Figure 9. Renders of the CUP area

2.4.2 CUP Area (Centro Unico Prenotazioni - central reservations center)

The CUP setting is composed of the information desk and the waiting area. The information desk is a modular metal structure with different heights on which different elements are arranged, including a side sound-absorbing panel to ensure greater privacy and comfort for users. Low counters are preferred to allow a direct relationship between the operator and the user.

Close to the information desk are several waiting settings that satisfy the users' needs, such as tables with power supply systems, informal seats and privacy spaces.

In waiting areas, formal and dynamic settings allow the user to customize the space according to their needs, increasing the sense of belonging to the place itself. The choice of furnishings, materials, and colours is more similar to that of a domestic rather than a formal institutional setting to amplify the user's sense of belonging and allow them to perceive the community house as a place of belonging to their community.

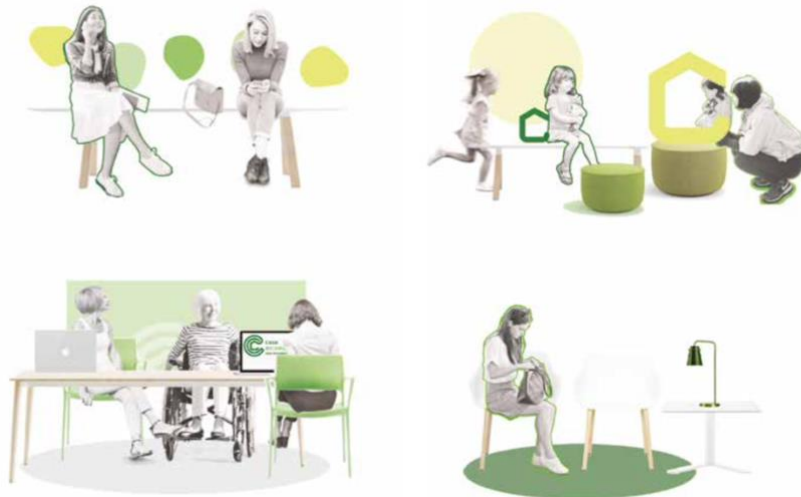


Figure 10. Renders of the different waiting settings: linear, kids, workstation, living

Several settings were designed for the waiting areas to allow the different structures to understand better the possible spatial solutions based on the users' needs. All settings refer to a more informal, homey and comfortable space. The settings designed are four: Waiting-Linear is designed for quick use; the setting Waiting-Kids, as suggested by the name, is designed for kids, it includes padded and small-sized furnishing components suitable for children. The Waiting-Workstation allows prolonged waiting with the possibility of individual activities. Finally, Waiting-Living, for those who will stop for a long time, consists of comfortable and enveloping seats, also of different models (maintaining a harmonious whole), a low table and any accessories that can evoke a sense of domesticity, strengthened by choice of wooden materials and light colours.

3 Results

The realization of the meta-design book allowed structures that had to open in a tight timeframe to have a tool capable of applying the first visual and spatial identity elements on a horizontal scale. The flexibility of the interventions governed by the guidelines in the book will also allow, where necessary, an application on a vertical scale, thus deepening even the most detailed aspects.

The first interventions concerned settings and touchpoints that favour and provide for more significant contact with the public, thus attempting to promote the project's desired community building. In the facilities that have applied the guidelines, we find, in fact, transformations in proxemics,

in the use of the visual elements of the environments and in the use of furnishings, such as to favour a more "human" exchange between operators and users.

As visible from the representations in the previous paragraph, the first realizations of the CdCs built respected the indications of layout and communication, favouring openness towards the citizen, increasing physical and visual contact points, and meeting the principles of welcome and care.



Figure 11. Cup's initial situation of an existing CdC. Source: [to be inserted]

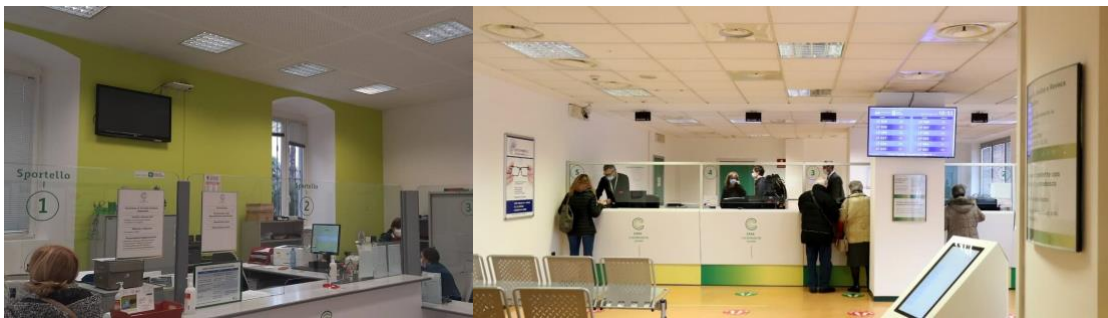


Figure 12. Result of CUP's interventions in two different CdCs. Source: Google images

Primary visual elements and colour are one of the most easily applied factors in the spaces of the facilities. This is undoubtedly due to the simplicity of the application methods indicated in the guidelines. Added to this is a general need for renewal of spaces, such that it is immediately recognizable to the user that they are in a space conceptually different from their previous one. Some of the facilities replaced by the CdCs were also health facilities but with different or incomplete vocation and services.

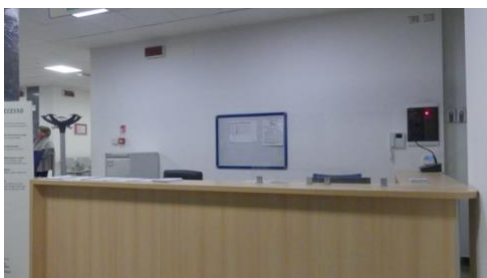


Figure 13. Initial situation of entrance of an existing CdC. Source: [to be inserted]



Figure 14. Result of entrance and waiting area. Source: Google images

In all the spaces realized by the CdCs' technicians, there needs to be more implementation of the furniture indicated in the guidelines of the meta-design book; unfortunately, due to the timing of supplies, they reused existing material. However, it was verified that, where possible, an attempt was made to use existing furniture that met the colour and type guidelines (e.g. movable seating vs. constrained seating).

Finally, due to the tight deadlines, it was impossible to involve citizens in verifying the effective achievement of the set objectives, how they perceive the space and if the new setting helped in overcoming the negative experiences of disorientation and inaccessibility typical of the previous experiences, a key element of the entire project.

4 Conclusion

The paper illustrates the creation and the use of a design tool. A meta-design book that can enable non-designers to realise healthcare facilities by promoting community building through visual and spatial identity elements. The research team would like to highlight here, and thus underline the qualifying elements of innovation, how these types of this and similar tools are normally:

- focused, in a separate way, on visual elements or spaces, while the cases in which they are combined in an integrated approach are rare;
- used in private sectors such as retail, hotels, offices where the quality of the user experience and customer satisfaction plays a very important role and rarely in public administration, at least in the Italian context.

Using design as a lever of horizontal transformation allowed for speed in realising the first structures. The meta-design book and its guidelines thus enabled technicians and operators to realise structures that, despite their heterogeneity, conveyed a general sense of renewal and openness towards the citizen. This approach highlights the idea of the patient as a citizen and of a caring community as a concept conveyed, especially in the spatial and visual identity design.

Through the application of the guidelines and the visual and spatial renovation of the facilities, the transition from a proactive patient (with a one-way relationship to the facilities) to a guest welcomed and "protected" by a network of familiar facilities, homogeneous in terms of their formal characteristics and fostering an exchange of information between patient and healthcare facility.

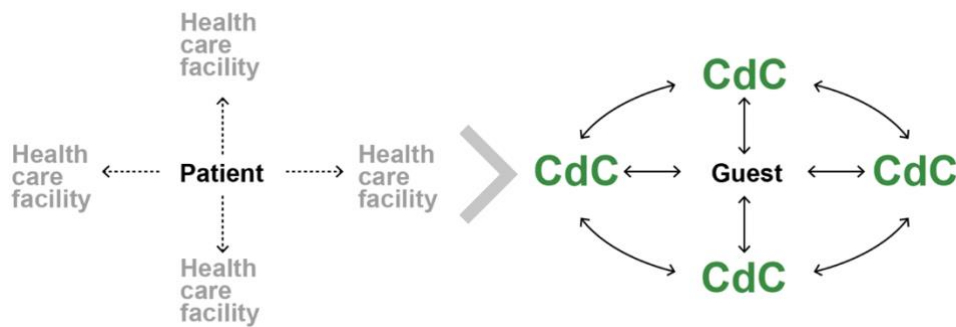


Figure 13. Changing the paradigm between patient and structure

The objective is to create places where there is a new perception of patient care, openness to dialogue and support of timely and widespread service provision. All this is also transversal to the territory where we can find multiple CdCs.

The Public Administration aims to open 216 CdCs (90 open in January 2023) and 71 CdCs (21 open in January 2023) by 2024. Monitoring developments and facility openings is in the interest of the research team. It is advisable to develop the research further to provide a comprehensive strategy for improving the designed touchpoints and to collect data to verify the effectiveness of the design research project.

References

- Bucchetti, V. (2017) Il Design della comunicazione per il welfare in Bucchetti, V. Un'interfaccia per il welfare. Le funzioni sociali del design della comunicazione. Milano, Italy, Francoangeli.
- Cavicchi, I. (2018). Riformare la deontologia medica: proposte per un nuovo codice deontologico. Edizioni Dedalo.
- Collina, L. (2005), Design e Metaprogetto. Teorie, strumenti, pratiche. Edizioni Poli. Design.
- Dijkstra, K. (2006) Physical environmental stimuli that turn healthcare facilities into healing environments through psychologically mediated effects: systematic review. *Journal of Advanced Nursing*. 56(2)166-181.
- Esposito, A. (2017). Hospital branding in Italy: A pilot study based on the case method. *Health Marketing Quarterly*, 34(1), 35–47. <https://doi.org/10.1080/07359683.2016.1275211>
- Fischer, G. (2003, June). Meta-design: Beyond user-centered and participatory design. In *Proceedings of HCI international*(Vol. 4, pp. 88-92).
- Fischer, G., & Giaccardi, E. (2006). Meta-design: A Framework for the Future of End-User Development. In Lieberman, H., Paternò, F. & Wulf, V. *End User Development*. Springer.
- Fischer, G. and Scharff, E. (2000). Meta-design—design for designers. In: *3rd International Conference on Designing Interactive Systems (DIS 2000)*, New York, pp. 396–405.
- Franzato, C. (2014). Metadesign. Letting the future design. *5th International Forum of Design as a Process - The shapes of the future as the front end of design driven innovation*
- Giraldi, L., Maini, M., & Meloni, D. (2018). Way-Finding and Communication Design as Strategic Systems to Improve the Well-Being of Children in Paediatric Hospitals. *Advances in Intelligent Systems and Computing*, 799–810. https://doi.org/10.1007/978-3-319-96065-4_83
- Indraprastha, A.. and Shinozaki, M. (2012) Computational models for measuring spatial quality of interior design in virtual environment. *Building and Environment*, Elsevier. 49 (2012) 67 85.
- Kalantari, S., Tripathi, V., Kan, J., Rounds, J. D., Mostafavi, A., Snell, R., & Cruz-Garza, J. G. (2022). Evaluating the impacts of color, graphics, and architectural features on wayfinding in healthcare settings using EEG data and virtual response testing. *Journal of Environmental Psychology*, 79, 101744.
- Longo, F., & Barsanti, S. (2021). Community building: logiche e strumenti di management: comunità, reti sociali e salute. *Community building*, 1-203.
- Manzini, E. (2014). Making Things Happen: Social Innovation and Design. *Design Issues*, 30, 57-66.

- Meggs, P. B., & Purvis, A. W. (2016). *Meggs' History of Graphic Design*. John Wiley & Sons.
- Morone, A. (2016). The Concept Book: A New Methodological Approach to the Interdisciplinarity in Retail Design Process. *The International Journal of Design Management and Professional Practice*, 10(1), 25–37. <https://doi.org/10.18848/2325-162x/cgp/v10i01/25-37>
- Pensieri, C. (2009). Processi comunicativi in area Sanitaria, comunicazione e bioetica. [Communication processes in healthcare: Communication and bioethics]. *Medical Education*, 17(1–3), 60–69.
- Pizzocaro, S., “Design e complessità,” in *Design Multiverso*, Edizioni P., P. Bertola and E. Manzini, Eds. Milano, 2006, pp. 71–88.
- Samah, Z. A., Ibrahim, N., & Amir, J. S. (2013). Translating quality care factors to quality space: design criteria for outpatient facility. *Procedia-Social and Behavioral Sciences*, 105, 265-272.
- Sanders, E. B. N. (2002). From user-centered to participatory design approaches. In *Design and the social sciences* (pp. 18-25). CRC Press.
- Schweitzer, M., Giplin, L., and Frampton, S. (2004) Healing spaces: Elements of environmental design that make an impact on health. *The Journal of Alternative and Complementary Medicine*. 10: S-71-S-83.
- Stern, L.A, Mac Rae, S., Gertis M., Harrison, T., Fowler, E., Edgman-Levitan, S., Walker, J., and Ruga, W. (2003) Understanding the Consumer Perspective to Improve Design Quality, *Journal of Architectural and Planning Research*.
- Ulrich, R. (1991) Effects of Interior Design on Wellness: Theory and Recent Scientific Research, *Journal of Healthcare Interior Design*. 97-109.
- Van Riel, C. B. M., & Balmer, J. M. (1997). Corporate identity: the concept, its measurement and management. *European Journal of Marketing*, 31(5/6), 340–355. <https://doi.org/10.1108/eb060635>
- Von Hippel, E (2005). *Democratizing Innovation*. MIT Press, Cambridge.
- World Health Organization. (2018). *Delivering quality health services: A global imperative*. OECD Publishing.

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