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# Enhancing public engagement through NICU storytelling on Facebook and Instagram: a case study from Gaslini Children's Hospital

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**Background:** Social media platforms, particularly Instagram, have become pivotal in disseminating medical information to the public. However, the challenge of presenting neonatal intensive care unit (NICU) stories in a manner that is both engaging and informative remains significant, especially in the context of a reputable pediatric hospital.

**Objective:** This study aimed to explore the effectiveness of Instagram as a storytelling medium for NICU experiences at the Gaslini Children's Hospital, focusing on the impact of various storytelling elements on audience engagement and follower growth.

**Methods:** We analyzed Facebook and Instagram posts of the Gaslini Children's Hospital, examining factors such as emotional appeal, news value, and content quality. Additionally, we considered the adherence of these posts to journalistic and medical guidelines.

**Results:** The research identified key themes in successful posts, including emotional resonance, portrayal of medical excellence, and humanization of patient stories. Posts that effectively combined these elements saw a significant increase in audience engagement, including likes, comments, and shares.

**Conclusion:** Strategic storytelling on Instagram can significantly enhance public engagement with hospital content, fostering a deeper connection between the institution and its audience. This study underscores the significance of narrative elements and adherence to ethical guidelines in crafting compelling medical stories for social media.

## KEYWORDS

neonatal intensive care unit, Instagram, storytelling, public engagement, pediatric hospital, Gaslini Children's Hospital

## 1 Introduction

Social media have transformed into a working tool for journalists (Molyneux, 2019). However, how can these little patients' peripeties be disseminated on these platforms in a deontological and scientifically informative manner from hospital settings? In Italy, a communicative methodology did not exist apart from the Carta di Treviso deontological code on the management and publication of minors-related news in digital and analogical media. This charter considered an ample range of communicative situations (crime news, penal involvement of children as witnesses or victims, above others), and it was approved for the first time by the Italian Journalism Society in 1990 (Ordine dei Giornalisti Italiani, ODG), and Telefono Azzurro Onlus (a national non-profit organization caring for abused minors). For pediatric concerns, the Italian Journalism Society emphasized in this and subsequent versions the following rule: "In the case of ill, injured, disadvantaged or distressed minors, particular attention and sensitivity must be paid to the dissemination of images and events in order to avoid that, in the name of a feeling of pity, sensationalism ends up becoming exploitation of the person" (Ordine dei Giornalisti, 1990; Ordine dei Giornalisti, 2006; Ordine dei Giornalisti, 2016; Ordine dei Giornalisti, 2021a; Ordine dei Giornalisti, 1995). This principle was aligned with the 2021 revisions based on deontological sanctions by the ODG Committee, which stated the "Treviso Charter preserves children and adolescents, and their peaceful character development. A journalist must focus priorly on this principle to preserve their confidentiality" (Ordine dei Giornalisti, 2021b). We always ensure the preservation of this issue by not revealing our patients' identities and obtaining full, signed authorization from their parents. To address these challenges, we wished to select the most influential neonatal intensive care unit (NICU) news based on Christian Salmon's definition of storytelling (Salmon, 2014) derived from information-related symbolic-narrative images (the "frame") conditioning public opinion. Indeed, we aimed to use Salmon's storytelling notion (Salmon, 2014) as a modality to capture audience attention through narrative frames for a good purpose—that is, enhancing clinical expertise dissemination—rather than a propaganda tool as this French writer described in the political sphere (Salmon, 2014). We focused on the Gaslini Children's Hospital. Gaslini Children's Hospital was founded in Genoa, Italy, in 1938 by the Italian entrepreneur Count Gerolamo Gaslini, following the premature death of his daughter Giannina at the age of 11. With 20 pavilions and 29,467 hospital admissions per year, it constitutes to serve as a national and international reference center in all pediatric fields, including intensive care, surgery, and routine care. The hospital is renowned for its global schools of specialization and scientific collaborations, as its healthcare activities have been associated with research activities since its inception. Mr. Gaslini also chose to associate the hospital with the Faculty of Medicine and School of Pediatrics in Genoa, by inviting the most famous Professors of Pediatrics to teach, aiming to provide pioneering care for children and to avoid the sorrow of parents as much as possible.

More specifically, the Gaslini Institute's NICU (neonatal intensive care unit) was created by Gerolamo Gaslini's daughter, Germana, in the 1970s. Currently, it serves as a third-level reference center providing full intensive care for ill neonates from Northern Italy, including regions such as Liguria, Piedmont, Lombardy, Veneto, Friuli, Trentino, and Valle d'Aosta. The unit also regularly admits

patients from Southern and Central Italy, as well as from abroad, owing to its internationally operating emergency transport unit.

Every year, this NICU unit cares for 500 babies and has become one of the most frequented facilities for low-weight, preterm infants (weighing <1,500 g and born before 37 weeks of gestation). This is partly due to its affiliation with the prestigious Vermont Oxford Network and the Italian Network INNSIN since 2011. For our research project, accepted as part of the first author's PhD thesis on "digital innovations in pediatric care," we selected data provided by our social media managers. Accordingly, with these purposes, this present research aimed to identify newsworthy and engaging events related to Gaslini Institute's Neonatal Intensive Care Unit transforming into public opinion. Additionally, we attempted to identify image-inherent news factors, such as emotions, damage, violence/aggression, controversy, celebrities, unexpectedness, execution and technique, and sexuality/eroticism, along with virality, and instantaneity. These are crucial in the selection of newsworthy information (Luchessi and Content, 2018; Rössler et al., 2011). Furthermore, we verified whether social media algorithms could enhance visibility and engagement (Cotter, 2019; Feitosa and Mosconi, 2022).

## 2 Materials and methods

We examined the Gaslini Children's Hospital's Facebook and Instagram posts from 1 January 2020 to 31 December 2023. The period from 2020 to 2022 was associated with the COVID-19 pandemic, while in 2023, the coverage of the hospital's Instagram and Facebook pages surpassed their median reach and mediatic resonance. The Meta Business Suite instrument connected to Gaslini's Facebook and Instagram pages was chosen to extrapolate and analyze these social-media data (Sawchuk and Metcalfe, 2023) on the number of followers, total coverage (number reached accounts), number of likes, comments, and shares across time—similar to Pulsipher et al. (2022). We attempted to identify neonatal events with national or international resonance (national newspapers, national broadcasters, public figures' social media pages, and official websites) and social media engagement linked to the number of impressions (number of times a post/reel is suggested by the algorithm to the users), number of interactions (the sum of the number of likes, comments, shares, and savings), and the number reached accounts (coverage). The selected posts had to get at least one above-average indicator. To ascertain whether the Journal of Pediatrics guidelines (Lonzer et al., 2015 and Table 1) were followed and to verify the association of journalistic newsworthiness and relevance criteria implied in storytelling, we selected the top posts that reached an impressive number of reached accounts (coverage) and reactions (Table 2). To have an assessable proxy of social media algorithm and audience engagement, we calculated the engagement rate of these top posts based on the number of impressions, interactions, and number of reached accounts from the Meta Business Suite. Moreover, we categorized posts based on the main news topic as online journalists do by attributing a tag to an article (Tibély et al., 2016). These main news topics were compared to the posts that appeared on other three prestigious Italian pediatric hospitals' Facebook and Instagram official pages (IRCCS Burlo Garofolo, Trieste; IRCCS Bambino Gesù, Rome; Meyer Institute, Florence) with obvious data-collecting limitations as we focused on the number of followers and foundation date of these pages.

TABLE 1 Journal of pediatrics guidelines (Lonzer et al., 2015).

BRING valuable expertise and experience
BE relevant, accurate and transparent
ADHERE to any social media use guidelines that govern your organization
BE respectful
AVOID endorsing any political party/candidate and reference to religion
DO NOT ESTABLISH unwanted provider-patient relationship
BE careful whom you “friend”

TABLE 2 Main news topics.

Celebrities' visits
Classical and sui generis interviews
Congresses, seminars and meetings at hospital auditorium
Crime news followed by hospital admission
Donations
Good news
Healings and dismissions
International rescues
Institutional communication
News about a staff member (retirement, death)
Official visits (by the Pope, the Archbishop of Genoa, etc.)
Other events organized for patients and their parents
Research findings
Research initiatives
Rewards for research
Scientific dissemination (podcasts, videos, etc.)
World days and festivities

### 3 Results

Social media data concerning Gaslini Children's Hospital pages and top posts are available in Tables 3, 4. The data of comparing hospitals are summarized in Table 5. They will be discussed in detail in the Discussion section.

#### 3.1 Main news topics, newsworthiness criteria, and mediatic resonance

A total of 17 main news topics were classified (see Table 2): good news (volunteer superheroes entertained young patients; healing and discharge; patients' entertainment with other volunteer organizations); donations; international rescues; news about a staff member's death, and retirement; congresses; seminars and meetings at hospital auditorium; scientific dissemination (video, podcast, etc.); rewards for research; research findings; research initiatives; other events organized for patients and their parents; official visits (by the Pope, the Archbishop of Genoa, etc.); celebrity visits (actors, singers, footballers, etc.); classical and sui generis interviews (i.e., a former NICU patient interviewed neonatologist); World Days and festivities; institutional communication; and crime news followed by hospital admission. These main news topics were comparable to those from the other pediatric hospitals considered in the study. The top posts were selected based on mediatic resonance and interactions (comments, likes, etc.). They fulfilled the Journal of

Pediatrics requirements as specified in the journal's guidelines (cfr. Lonzer et al., 2015 and Table 1). Additionally, they vehiculated the Gaslini ethos (“Gaslini as an excellent pediatric care center”) and logos (“Gaslini Hospital has a qualified staff”), which were shared by the general users and the Institute, especially when the pathetic dimension was massive and complemented the other two from a happy-ending critical emergency or news. Particularly, regarding the newsworthiness (i.e., Caple, 2018; Luchessi and Content, 2018) and image-inherent criteria (Rössler et al., 2011), the top posts shared emotional and unexpected events (sudden preterm birth, initial aggravation of child health conditions, love declaration, etc.). They were shared more virally because they referred to positive events (Al-Rawi, 2019).

### 4 Discussion

Evidently, “saving a life” enhances the appeal of news—the lower the child's age, the greater the appeal. Additionally, rescue timing and modalities (itinerary, means of transport used, etc.) and the initial criticalness and severity of the child's condition significantly impact this appeal. This is because a child signifies the future and its fragility evokes an immediate empathetic bonding, as conveyed in the statement: “every patient is like my child” (Granek et al., 2022). Second, it is undeniable that COVID-19 was also an infodemic (information pandemic) even in social media debate and engagement. During that period, we observed a very focused reel on vaccination titled “That's why I vaccinate myself!” featuring many of Gaslini's pediatricians as speakers (publication date: 8 February 2021; 48,797 reached accounts). However, this was later overtaken by a not-COVID-19-related reel on “the neurosurgical treatment of drug-resistant epilepsy caused by a deep brain lesion called hypothalamic hamartoma” presented by the former chief of pediatric neurosurgery unit (99,485 reached accounts) on Facebook. Additionally, the most liked, commented, and shared post from 2020 to 2021 on both social media platforms detailed the discharge of a healed newborn baby, who had been transported from Bozen Hospital to Gaslini Children's Hospital because of a sudden worsening of his clinical conditions, garnering 4,456 total reactions. On Instagram, three of the four concerned posts (love declaration in the NICU, a preterm baby was born on a cruise boat, and a British mum thanks Gaslini Children's Hospital for healing her cardiopathic newborn) had higher-than-average interactions, impressions, and coverage like the COVID-19-related reel “I vaccine myself because...,” while the life-saving flight from Bucharest to Gaslini Institute had higher-than-average interactions, meaning that it produced a higher social media engagement although the number of reached accounts was far minimal. The engagement rate was superb on this channel as it was always above average; post comparison of the news of the preterm baby born on a cruise boat with the saving-life flight from Bucharest highlighted “risk and emergency management.” In the first story, the infant was born prematurely at 4.40 a.m. in a cruise boat hospital room (32 weeks of gestation, birth weight, 1,860 g). Ideally, the delivery should have occurred at a third-level hospital with a NICU; premature birth on a cruise ship increased the newborn's vulnerability. The baby was hypothermic and experienced breathing difficulty. He was put on a ventilator, warmed, and transported via helicopter to the Gaslini Children's Hospital from the Ligurian Sea to receive appropriate intensive care.

TABLE 3 Gaslini Facebook and Instagram Meta Business Suite data (coverage, n. of followers, n. of likes, comments and sharing; n. of published posts).

Platform	Year	Number of followers	Number of reactions	Number of published posts	Number of reached accounts (Coverage)
Instagram	2020	23,953	8.4 (median likes, comments, shares)	154	464,21
	2021	26,919	539 (median likes, comments, shares)	133	46,421
	2022	27,196	440 (median likes, comments, shares)	158	311,565
	2023	42,436	473 (median likes, comments, shares)	412	4,389,807
Facebook	2020	78,302	109 (median likes, comments, shares)	39	4,140
	2021	78,923	407 (median likes, comments, shares)	275	414,072
	2022	84,176	402 (median likes, comments, shares)	299	3,095,397
	2023	99,566	277 (median likes, comments, shares)	335	3,673,630

TABLE 4 Data of top post on Gaslini Children’s Hospital (n. reached accounts, n. interactions, n. impressions, engagement rate based on reached accounts, engagement rate based on n. of impressions on Facebook and Instagram).

Post title	Coverage	Impressions	Interactions	Engagement rate (Coverage)	Engagement rate (Impressions)
Reel - Love declaration in the NICU	3,587,199	3,875,106	192,567	5.37%	4.97%
Reel - British mum thanks Gaslini Children’s Hospital to cure her cardiopathic newborn	220,081	222,265	9,297	4.22%	4.18%
Post- A preterm baby was born on a cruise boat	15,109	19,668	1,865	12.34%	9.48%
Post - Life-saving flight from Bucharest to Gaslini Children’s Hospital	801	901	1,778	221.97%	197.34%
Post The initially critical newborn from Merano is healed and he will come home (Instagram)	624	671	2,109	338.00%	314.31%
Post The initially critical newborn from Merano is healed and he will come home (Facebook)	3,948	4,466	5,068	128.37%	113.48%
Reel - I Vaccine Myself because...	49,211	54,950	2,109	4.29%	3.84%
Reel - A new neurosurgical treatment for epilepsy was introduced at Gaslini Children’s Hospital	99,773	125,983	799	0.80%	0.63%
Reel - C. was healed from a tumoral mass in her mouth thanks to a Gaslini Children’s Hospital equipe	544,994	605,125	9,765	1.79%	1.61%
Post - Now the three homozygous twins are ok they were born a month ago	70,352	74,828	1,434	2.04%	1.92%
Reel - Saving-life multidisciplinary <i>in utero</i> intervention for little At.	16,409	18,573	457	2.79%	2.46%

In the second story, a 4-week-old baby suffering from cerebral hemorrhage was transported to the Gaslini Children’s Hospital from Bucharest for an optimal understanding of the possible treatment. However, this saving-life flight was featured in several local online newspapers, accompanied by statements from the governor of Regione Liguria and the director of the Gaslini Mother–Child Department, as well as on a famous Italian entrepreneur’s official Website. On the contrary, little preterm peripeties had more mediatic visibility as they were reported on the Governor of “Regione Liguria” social media pages, the Italian press agency ANSA, local and national media (newspapers and broadcasters), as well as on blogs and cruiser magazines. Why? Perhaps, coverage, number of likes, comments, and followers differed between 2022 and 2023 (Table 3). Another saving-life transport in April 2016 could have provided a more complete framework of mediatic clinical cases; however, the Instagram page

had not yet been created, and this news was not published on the Gaslini Children’s Hospital Facebook page. In that case, a newborn baby of Italian parents was transported from the Shanghai Children’s Hospital to the Gaslini Children’s Hospital after a non-stop 26-h flight (Bellini et al., 2018) due to the efforts of the Italian Ministry of Foreign Affairs and Italy’s ambassador in China. The news was by press agencies, national and independent newsrooms, and pediatric dissemination websites. A former deputy in the Italian Parliament also shared the version that appeared in the national newspaper Repubblica.

Therefore, the news typology was the same with some shared newsworthiness criteria (emergency; Italy-world, criticalness of the neonate conditions, etc.). The “impossible healing care according to medical staff” in departure nation (Bellini et al., 2018) transforming into “a prodigious event of successful healing” increases the potential

TABLE 5 N. of followers and foundation date of social media pages of Gaslini Children's Hospital and other comparing hospitals (Facebook and Instagram).

Hospital	Platform	N. of followers	Foundation date of the page
Bambino Gesù (Rome)	Facebook	241,688	11th May 2011
	Instagram	83,700	August 2013
Istituto Giannina Gaslini (Genoa)	Facebook	101,327	24th April 2012
	Instagram	43,800	29th December 2016
Meyer Institute (Florence)	Facebook	188,541	2nd October 2008
	Instagram	21,300	December 2012
Burlo Garofolo (Trieste)	Facebook	9,429 (hospital page)	25th August 2011
	Instagram	565 ("fondazione" page)	October 2022



FIGURE 1  
Coverage Instagram vs. Facebook (25th August 2023), after publishing the post about love declaration in NICU.



FIGURE 2  
Total coverage and interaction Instagram vs. Facebook (1st January 2023–24th August 2023).

news appeal, according to significant mediaticity to the clinical fact and Gaslini Children's Hospital's activities, especially when people already know the case. Little A. (second-best post)—an English cardiopathic newborn—was healed via the Ross-Pears intervention. This is an innovative surgical technique performed almost exclusively at the Gaslini Children's Hospital. The news was published in local, national, and international newspapers and became independent from the “mother-news.” A. was the first patient operated on using the Ross-Pears technique, integrating the on-topic debate with interviews, comments, and compliments on newspapers, even from a British newspaper, “The Times.”

Apparently, the emotional dimension is crucial for newsworthiness in addition to clinical achievements. A notable example is a love declaration in the NICU, where the father of a critically ill newborn proposed to the child's mother, with “superheroes” (“Supereroi,” by Italian singer Mr. Rain) music playing in the background. The baby wore a pajama on which the following question was written in Italian: “Mummy, you wanna get married to my Daddy?” That sentence became a mediatic element as it was incorporated into news titles or articles by a press agency,

national magazines, newspapers, and radio stations. Only some international and local newspapers did not include it directly, despite referencing the rescued preterm infant's long and difficult clinical journey. He was an extremely preterm baby (26 + 5 weeks of gestation), weighing 940 g at birth, operated two times, and in the NICU for 4 months. After the second surgical intervention, he was discharged in the second week of August 2023 when his weight met the physiological newborn babies' weight threshold (3.1 kg). However, newspapers structured the article in a “clickbait-like” manner, highlighting the news of the declaration of love, and placing the clinical story of the infant in the background. Thus, people were induced to watch the declaration of love video first and thereafter view the clinical information about the baby. It is interesting that this reel increased Instagram coverage to Facebook page detriment (Figure 1). The Gaslini Children's Hospital Facebook page scored majorly in terms of coverage, likes, and comments until the love declaration in the NICU was published on the hospital's social media platforms (Figure 2).

Despite Instagram appearing to be the most preferred social medium, we wished to further analyze the role of Facebook. In

light of the top Facebook posts results, news appeal and journalistic relevance are clearly interconnected with the allure of mass-mediatic extraordinariness, as well as the triumph of medical expertise on clinical criticalness, rareness, and uncertainty, particularly as the age of the child decreases. However, coverage scores and engagement rates did not always depend on effective national and local newspaper propagation first because journalistic relevance and newsworthiness criteria were subjective. It is the case of the third-ranking best post (see section 3, Results) in which a preterm infant was rescued *in utero* by a multidisciplinary team. Although it reached fewer accounts than the first-ranking best post in terms of coverage (see section 3, Results) and engagement rate, that news was published by the press agency ANSA, local and national newspapers, as well as on national broadcasters such as Tg2, RaiNews, and SkyTG24. The second-ranking post related to the improved conditions of three twins garnered a similar result. Why, then, Little C.'s rescue (Section 3, Results) was disseminated only by some local newspapers? We know that it fulfilled the abovementioned news appeal and journalistic relevance criteria, and achieved the highest coverage. Similar to little At's post, emergency and risk management were highlighted on the Instagram page, with the concerned newborns (C, At, and the three twins) transported by helicopter (baby C and the three twins from Savona, Liguria, and At from Naples). Perhaps, the journalistic dissemination was influenced by the criticalness-related medical issue (laryngeal atresia; an over 4-cm-sized tumoral mass in the mouth), and saving-life intervention timing contributing to the emotional news appeal and mediatic success.

International data seem to be consistent with our research. For instance, in a cross-sectional study concerning US News-ranked, American adult and children's hospitals with Instagram, Twitter, and Facebook pages, "a statistically significant correlation exists between multiple social media metrics (number of followers and number of published posts) and both a hospital's reputation score and total points (i.e., overall rank). This association may indicate that a hospital's reputation may be influenced also by its social media presence or that the reputation or rank of a hospital drives social media followers, prestige and active engagement," as well (Triemstra et al., 2018); in a Twitter-based, mixed-method study, "institutional social media presence is independently associated with USNWR (United States News and World Report) divisional ranking and reputation score (...) with a threshold of 8,000 additional followers as the best predictor of improved or stable ranking" (Chiang et al., 2019). Anyway, our research endeavored to provide an insightful analysis of children's hospital's social media as a very useful tool for health-related education, engagement with communities, and community benefit purposes (Ca et al., 2016).

The present study examined why different kinds of news appeal to Instagram and Facebook groups of followers, to ascertain how social media handles the clinical and non-clinical parts of the stories, thereby influencing the visibility of the hospital. In other words, we should aim for a kind of "academic third mission" for a pediatric teaching hospital, to better inform and educate regarding the economic, social, and cultural impacts of hospital activities in addition to its traditional missions of caring for children, educating new health workers, and promoting medical research.

## 4.1 Limitations

Our analysis focused on only hospital-centered Instagram and Facebook samples. Further research is required to clarify the significance of social media in medical imagery-building and storytelling related to public opinion from a multichannel and multi-facility perspective, with the continuous emergence of new social media platforms (TikTok).

## 5 Conclusion

Effectively combining emotional resonance, medical excellence portrayal, and humanizing patient stories can significantly increase audience interaction, as evidenced by likes, comments, and shares. The study underscores the significance of utilizing strategic storytelling on social media platforms. Strategic storytelling regarding neonatal medicine on Instagram resulted in significantly enhanced public engagement (numbers of likes, shares, impressions, etc.) within all hospital contents as a communicative style to better diffuse knowledge culture on neonatal medicine.

Furthermore, it fosters a deeper connection between the institution and its audience by showing clinical expertise and reliable medical information. Additionally, it indicates the need for future research to clarify the broader implications of social media in medical storytelling and shaping public opinion, considering the continuous emergence of new platforms such as TikTok. The Gaslini Institute shared its social media data with the researchers, indicating a collaborative effort in understanding and leveraging the power of digital narratives in healthcare communication.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

Ethical approval was not required for the study involving human data in accordance with the local legislation and institutional requirements. Written informed consent was not required, for either participation in the study or for the publication of potentially/indirectly identifying information, in accordance with the local legislation and institutional requirements. The social media data was accessed and analyzed in accordance with the platform's terms of use and all relevant institutional/national regulations.

## Author contributions

MEC: Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. MM: Writing – review & editing, Validation, Supervision. LR: Writing – review & editing, Validation, Supervision. PS: Writing – review & editing, Validation, Supervision. LAR: Writing – review & editing, Validation, Supervision.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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