

Women Reproductive Health in an Ageing Society and Private-Public Intervention*.

by Sara Landini, Simona Viciani, Daniele Vignoli, Maria Elisabetta Coccia, Marco Cozzani, Emilia Giusti and Niccolò Pellini**

Abstract EN: The essay examines women's reproductive health in the context of an ageing society. It explores the concept of reproductive health rights and how the postponement of parenthood and biological constraints have led to a structural reliance on Assisted Reproductive Technology (ART), which now accounts for a significant proportion of births among older mothers. The authors highlight the need for comprehensive reproductive education and the potential of Public-Private Partnerships (PPPs) and insurance schemes to fill the gaps in state support. Finally, the paper focuses on the challenges posed by excessive medicalisation and emphasises the crucial role of new developments in digital health (telemedicine and e-health), including in ensuring equitable access and secure data management.

Keywords: reproductive health; ageing society; medically assisted reproduction (MAR); public-private partnership (PPP); telemedicine; health data.

Abstract IT: Il saggio esamina la salute riproduttiva delle donne nel contesto della c.d. *ageing society*. Gli autori esplorano il concetto di diritto alla salute riproduttiva e il ruolo ricoperto oggi giorno dalle tecniche di riproduzione assistita. Gli autori sottolineano, poi, la necessità di un'educazione riproduttiva, il potenziale del partenariato pubblico-privato (PPP) e delle soluzioni assicurative per colmare le lacune nel sostegno statale e del SSN. Infine, il documento si concentra sulle sfide poste dall'eccessiva "medicalizzazione" e pone in evidenza occasioni e criticità poste dalla sanità digitale, anche sotto il profilo di un accesso equo al sistema sanitario e della gestione sicura dei dati.

Contents: 1. Premise. – 2. Reproductive health rights. – 3. Education to improve reproductive health. – 4. PPP to enhance reproductive health. – 5. MAR and new technologies. – 6. Conclusions.

1. Premise.

Public and private support systems (including insurance) increasingly prioritize the prevention of reproductive health conditions and access to assisted reproductive technologies¹. Reproductive health signifies a total state of physical, mental, and social wellness rather than simply the lack of illness or debility, concerning all aspects linked to the reproductive system and its respective functions and operations.

A recent study from the Policlinico of Milan has shown that, in addition to known factors like uterine cancer, breast cancer, and infectious diseases such as HIV, there are other elements that negatively affect reproductive health. Lifestyle choices have a major impact on fertility, influenced by their effect on our overall health. Aspects such as nutrition, physical activity, stress levels, and sleep habits are vital to reproductive health, making it necessary to safeguard and maintain it. Moreover, when the desire to conceive becomes a source of psychological stress, it can negatively affect both the well-being of the couple and their reproductive outcomes.

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¹ See Spoke 1 - Policy Briefing Age-It Project: G. DE SANTIS, E. BARBI, V. BOFFO, L. BURRONI, C. COMOLLI, L. FROVA, E. TRAPPOLIN *Longevità, salute, vita attiva*, in https://ageit.eu/wp/wp-content/uploads/2025/11/AGE-IT-policy-paper_Spoke1WP1-compresso.pdf; D. VIGNOLI, R. GUETTO, E. BRINI, *La bassa fecondità in italia tra politiche pro-nataliste e interventi strutturali Istituto Superiore di Sanità*, in <https://ageit.eu/wp/wp-content/uploads/2025/11/AGE-IT-policy-paper-WP1.pdf> but also “National Fertility Study” Project: the results of the five surveys. Edited by PIZZI, SPINELLI, ANDREOZZI, BATTILOMO, 2020, 129, Rapporti ISTISAN 20/35 (in Italian). See also, WORLD HEALTH ORGANIZATION (WHO), HUMAN REPRODUCTION PROGRAMME (HRP), *Guideline for the prevention, diagnosis and treatment of infertility*, in <https://www.who.int/publications/i/item/9789240115774>

Taken together, these elements point to the multifaceted nature of reproductive health. In particular, disruptions to the natural circadian rhythm—leading to irregular sleep patterns and chronic sleep deprivation—can impair hormonal balance, especially hormones involved in reproduction. Many studies have indicated that sleep disorders can interfere with the reproductive capabilities of both males and females. Additionally, a new study has linked irregular sleep patterns to cellular changes associated with aging, thus relating them to “biological age”, which does not always match chronological age. At the same time, contemporary social and economic conditions have encouraged the postponement of childbearing compared to previous decades². Yet, despite these shifts, biological constraints remain unchanged, and age continues to be a key determinant of fertility for both women and men³.

The aim of this paper is to examine women’s reproductive health in an ageing society, focusing on the role of public and private interventions in prevention, access to care, and informed reproductive choices. Drawing on the Italian experience, it explores how demographic change, delayed childbearing, and biological constraints interact with health systems and insurance-based solutions.

2. Reproductive health rights.

The global dialogue on sexual and reproductive health and rights was formally launched at the 1994 International Conference on Population and Development in Cairo and has continued to evolve, most recently reaffirmed at the Nairobi Summit in 2019. The report of the High-Level Commission takes stock of the commitments made over the past decades and looks ahead to a global future in which sexual and reproductive health is recognised as a central pillar of population well-being and social development. Within this framework, maternal health has traditionally been assessed through maternal mortality indicators, which in Italy—as in most high-income countries—are exceptionally low, reflecting substantial advances in obstetric care and health system performance⁴. Nonetheless, over the course of the nine months of pregnancy, a range of complications may arise, requiring enhanced medical care and targeted support to safeguard the health of both the woman and the fetus.

² D. VIGNOLI, R. GUETTO, E. BRINI, *Politiche sociali e fecondità in Italia: una revisione della letteratura tra approcci pro-natalisti e interventi strutturali*, in *Stato e Mercato*, 2025, 2, 145-178.

³A. BURGIO, C. CASTAGNARO, D. VIGNOLI, A. VITALI, *The Contribution of Medically Assisted Reproduction to Total, Age- and Parity-Specific Fertility in Italy* in *Human Reproduction*, 2025, 40(10), 1972-1979.

⁴ AA.VV., *Maternal mortality in Italy estimated by the Italian Obstetric Surveillance System*, in *Sci Rep*, 2024, 14, 31640.

Over the past two decades, medically assisted reproduction (MAR) has moved from a marginal medical option to a structurally relevant component of fertility in Italy. This shift is closely intertwined with the progressive postponement of parenthood, which has led Italy to record one of the highest maternal ages at childbirth in Europe. As natural fecundity declines sharply with age—particularly after 35 and even more so after 40—MAR increasingly compensates for age-related infertility and subfertility.

Recent estimates⁵ indicate that, in 2023, nearly 4% of all births in Italy were conceived through MAR techniques. While this share may appear modest at first glance, its demographic relevance becomes clear when examined by birth order and maternal age. Among first births, the contribution of MAR rises to over 6%, reflecting the growing reliance on assisted reproduction among individuals entering parenthood late. Age gradients are even more striking: for women aged 40 and over, more than one in six births is attributable to MAR, and among first-time mothers in this age group the share exceeds 30%. At very advanced ages (45–49), MAR accounts for more than half of total fertility, underscoring its pivotal role in extending reproductive trajectories beyond natural biological limits.

The temporal evolution of these figures points to a rapid and sustained increase. Between 2013 and 2023, the contribution of MAR to total fertility almost doubled, signalling not a temporary fluctuation but a structural transformation in reproductive pathways. This trend mirrors patterns already observed in countries such as Denmark, the United States, and Australia, although Italy entered this trajectory later due to historically restrictive legislation.

Women accessing MAR are, on average, substantially older than those conceiving naturally. For first births, the age gap exceeds six years, reflecting the fact that assisted reproduction is typically sought after prolonged attempts at natural conception. MAR thus operates less as an alternative choice and more as a last resort within increasingly delayed life courses shaped by extended education, employment instability, partnership uncertainty, and difficulties in work–family reconciliation.

Crucially, the growing quantitative relevance of MAR should not obscure its intrinsic limits. Success rates decline rapidly with age, and assisted reproduction cannot fully offset the biological constraints associated with

⁵ A. BURGIO, C. CASTAGNARO, D. VIGNOLI, A. VITALI, *The Contribution of Medically Assisted Reproduction to Total, Age-and Parity-Specific Fertility in Italy*, cit. and A. BURGIO, C. CASTAGNARO, D. VIGNOLI, A. VITALI, *Medically assisted reproduction in Italy* in D. VIGNOLI-G. DE SANTIS (Eds.), *Age-It and the promise of positive demography: Rethinking ageing with sustainable policies*, 22–28 and A. BURGIO, C. CASTAGNARO, D. VIGNOLI, A. VITALI, G. DE SANTIS, *The Future of Births via Medically Assisted Reproduction in Italy: Scenarios to 2050*, in *DISIA Working Paper* 11, 2025.

postponed childbearing. From a demographic standpoint, MAR currently mitigates—but does not reverse—the effects of very low fertility. Its expansion therefore highlights a fundamental tension in contemporary Italy: while medical innovation extends reproductive possibilities, sustainable fertility outcomes ultimately depend on social, economic, and institutional conditions that allow individuals to realise their childbearing intentions earlier in the life course.

3. Education to improve reproductive health.

In most European countries, sex and relationship education is a compulsory subject in schools⁶. Italy, Bulgaria, Cyprus, Lithuania, Poland, Romania and Hungary are excluded from this list.

In Sweden, for example, sex education has been compulsory in schools since 1955, in Germany since 1968, in Denmark, Finland and Austria since 1970, in France since 1998, and in Ireland since 2003. In the Netherlands, children have access to sex education at school from the age of 4, i.e. in nursery school⁷.

Sexual and affective education encompasses knowledge and skills related to sexuality, interpersonal relationships, gender identity, sexual rights, and reproductive health. It is a learning journey that combines biological, psychological, emotional, relational, social, and ethical aspects of human sexuality, aiming to foster personal well-being, mutual respect, gender equality, and the prevention of risky behaviours⁸. Sexual and affective education is regarded as a human right and is acknowledged as such by various international organizations⁹, including the

⁶ See the last Italian DDL n. N. 2423-2271-2278-A about this issue, https://www.camera.it/leg19/995?sezione=documenti&tipoDoc=lavori_testo_pdl&idLegislatura=19&codice=leg.19.pdl.camera.2423_A.19PDL0168580&back_to= with which the Italian Parliament seems intent on introducing the possibility of sex and emotional education in secondary schools, subject to parental consent. On this topic, AA.VV. *Sex Education in Italy: An Overview of 15 Years of Projects in Primary and Secondary Schools*, in *Arch. Sex Behav.* 52, 2023, 1653-1663.

⁷ See <https://sapere.virgilio.it/scuola/mondo-scuola/educazione-sessuale-e-affettiva-a-scuola-come-funziona-in-europa>, 21 ottobre 2025; <https://fissonline.it/pdf/STANDARDOMS.pdf>, 14, “In Europa l’educazione sessuale come materia scolastica curricolare ha una storia di oltre mezzo secolo, la più lunga rispetto a tutte le altre parti del mondo. E’ nata ufficialmente in Svezia, dove divenne obbligatoria in tutte le scuole nel 1955. Concretamente, poi, ci vollero molti anni per integrare questa materia nei programmi curricolari, perché la realizzazione di linee guida, manuali e altro materiale educativo, come pure la formazione degli insegnanti, hanno richiesto molto tempo”. See also for labour law issues, A. Bordin, *Le differenze di sesso e genere nella valutazione dei rischi*, in *Igiene & Sicurezza del Lavoro*, 11, 2024, 5.

⁸ <https://fissonline.it/pdf/DICHIARAZIONEDEIDIRITTISESSUALI2014.pdf>

⁹ CHR, *Comprehensive Sexuality Education (CSE)* <https://www.coe.int/en/web/commissioner/-/comprehensive-sexuality-education-protects-children-and-helps-build-a-safer-inclusive-society> “A process based on a teaching and learning curriculum that integrates the cognitive, emotional,

United Nations and the World Health Organization (WHO). For instance, the UN Convention on the Rights of the Child stipulates that children and teenagers have the right to access safe and appropriate information about sexuality¹⁰.

Understanding fertility—its potential, biological limits, social significance, and the ways in which it can be preserved—clearly falls within the scope of comprehensive health education. Such knowledge is essential to enable individuals to make informed choices and to reduce the risk of diminished fertility resulting from preventable health conditions or lifestyle behaviours with long-term negative consequences.

Sexual and reproductive health constitutes a fundamental dimension of human growth and development, particularly during adolescence, when behaviours and habits with lasting implications are formed. Lifestyle factors such as smoking, alcohol consumption, drug use, obesity or extreme thinness, physical inactivity, as well as excessive or inappropriate levels of physical exercise, represent major risk factors that can adversely affect sexual and reproductive health across the life course.¹¹

physical and social aspects of sexuality. It aims to provide children and young people with the knowledge, skills, attitudes and values that will enable them to: realise their health, well-being and dignity; develop respectful social and sexual relationships; consider how their choices affect their own well-being and that of others; understand and ensure the protection of their rights throughout their lives” cited by *Educazione all'affettività e alla sessualità: perchè è importante introdurre la Comprehensive Sexuality Education nelle scuole italiane – WeWorld*. The official version is in UNESCO, UN Women, UNICEF, UNFPA, Joint United Nations Programme on HIV/AIDS, WHO . International technical guidance on sexuality education: an evidence-informed approach UNESCO; (2018) Available at: https://cdn.who.int/media/docs/default-source/reproductive-health/sexual-health/international-technical-guidance-on-sexuality-education.pdf?sfvrsn=10113efc_29&download=true

¹⁰ <https://www.fissonline.it/pdf/UfficioReguinale2019.pdf>, in particular, 11 “*l’educazione sessuale dovrebbe fondarsi sui diritti umani ratificati a livello internazionale, in particolare sul diritto all’accesso a informazioni adeguate relative alla salute. Questo diritto è compreso nella Convenzione Internazionale sui Diritti dell’Infanzia (United Nations Committee on the Rights of the Child, 2003, comma 26) e anche nel Patto Internazionale sui diritti economici, sociali e culturali (United Nations Committee on Economic Social and Cultural Rights, 2000, comma 11). Inoltre, il diritto all’educazione sessuale è stato evidenziato nella relazione sul diritto all’istruzione del Relatore Speciale dell’ONU nell’Assemblea Generale dedicata esclusivamente a questo tema nel 2010 (United Nations, 2010) nonché dalla Corte Europea dei Diritti dell’Uomo nel 2011 (European Court of Human Rights, 2011)*”. See also artt. 28-29 of the Convention <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child>

¹¹ See on this point, Ministero della Salute-CCM-ISS, *Principali risultati del Progetto Studio Nazionale Fertilità* https://www.salute.gov.it/new/sites/default/files/imported/C_17_pubblicazioni_2823_allegato.pdf

Caring for it from early childhood is vital to prevent diseases or harmful behaviours that could jeopardize future fertility. Sexual health¹², defined as a state of physical, emotional, mental, and social well-being, extends beyond merely being free from sexual diseases: the import of knowledge about the reproductive ageing process. Sexual education is more than just a transfer of medical and health-related information; it is closely linked to education about emotions and relationships, the respect for human rights, and gender equality¹³.

For this reason, such information must be communicated and managed responsibly, so that it does not become a source of misunderstanding or social division. Education on emotions, relationships, and sexuality should be age-appropriate and grounded in a holistic perspective that recognises affectivity and sexuality as core dimensions of human development and potential. This approach enables children and adolescents to gradually acquire the knowledge, skills, and autonomy needed to navigate their sexuality and interpersonal relationships across different stages of the life course. Comprehensive sexuality education should also address lifestyle choices that have a substantial impact on sexual and reproductive health, highlighting how everyday behaviours can shape well-being, fertility, and relationship quality over time.

Today, there is a growing and urgent need for accurate knowledge about reproductive health. This need is particularly evident in a context in which many women, in order to preserve their chances of becoming mothers, may turn to private clinics to freeze their biological material, with the intention of using it later when personal, relational, and economic conditions are more favourable for starting a family.

Access to timely and reliable information on reproductive health can help prevent or mitigate future infertility risks and inform individuals about the medical, economic, and financial options available to protect their reproductive potential, where such options exist. In this regard, health insurance may represent one possible instrument, provided that individuals are given the opportunity to choose coverage that includes medically assisted reproduction.

¹² [Sesso e genere poco considerati nella ricerca. Le raccomandazioni Iss per una maggiore equità - Quotidiano Sanità, 4 settembre 2024; https://www.assoziazionemediciendocrinologi.it/images/allegati/salutesessuale.pdf.](https://www.assoziazionemediciendocrinologi.it/images/allegati/salutesessuale.pdf)

¹³ M. COLAMUSSI, *Carceri: alcuni problemi e le più recenti politiche legislative - Per una detenzione a misura di persona, di donna e di madre in Giurisprudenza Italiana*, 5, 2025, 1210. In particular "Il diritto alla genitorialità e, in particolare, il diritto alla maternità in divenire, quale bisogno naturale della donna, anche detenuta, vanno implementati con una regolamentazione ad hoc sull'accesso alla procreazione medicalmente assistita e sulle tecniche di crioconservazione degli ovuli delle giovani donne che devono scontare un lungo periodo di detenzione, affinché quest'ultimo non si trasformi in una pena capitale, pregiudicando definitivamente l'aspettativa di maternità".

More broadly, understanding one's reproductive life course—its biological limits, technological possibilities, and inherent uncertainties—has become almost indispensable in an increasingly fast-paced society, where advances in reproductive technologies offer new and significant opportunities, but also require informed and responsible decision-making.

4. PPP to enhance reproductive health.

PPP, or public-private partnership, serves as a potential approach to enhance reproductive health. Basic state support funds the expenses associated with artificial insemination and several fertility therapies, yet this assistance typically concludes after six unsuccessful attempts at treatment. This is where the supplementary

insurance becomes relevant.

Medical costs generally covered by insurance policies include:

- care provided in accredited medical facilities;
- specialized packages for preventive screenings. This package encompasses, for instance: a gynecological consultation and a pap smear, transvaginal ultrasound of the reproductive system, and breast assessments.

Furthermore, insurance should not promote the medicalization of pregnancy, but insurers have the potential to support health education and preventive measures. For example, Pitacco describes health risk as "*Situations of need that arise due to changes in an individual's normal health condition*"¹⁴. In personal insurance, the insured interest concerns the well-being of the individual in various contexts of loss, such as accidents and diseases. In this case, due to the nature of the harm and its uncertainty in real terms, the compensation amount is determined by pre-established criteria categorized by the type and severity of personal injury¹⁵. It is essential to clearly distinguish health insurance from other forms of insurance that may cover similar events but are more appropriately classified as property or indemnity insurance. This distinction is particularly important in the case of insurance policies for medical expenses, which play a central role in discussions concerning the coverage of costs associated with access to medically assisted reproduction.

¹⁴ E. PITACCO, *Health and social security insurance products in the new demographic landscape. Actuarial profiles, Report to the congress of science and techniques in insurance, 2004*, in www.ecostat.unical.it.

¹⁵ A. DONATI, G. VOLPE PUTZOLU, S. LANDINI, *Manuale di diritto delle assicurazioni*, 2025, 173-174, and S. LANDINI, *Polizze sanitarie nelle dinamiche contemporanee della longevità*, in *Riv. it. med. leg.*, 2019, 511 ff.

In Italy, in addition to insurance companies and insurance contracts, mutual funds can also provide coverage for these costs. The mutuality present in the supplementary healthcare sector focuses on providing subsidies to those facing specific hardship situations. Members serve as the core of mutual organizations, around which activities are structured. The relationship with the members is one of utmost good faith, based on trust as a prerequisite for a lasting association. Even when the mutual entity, which is separate from the mutual insurance company, provides insurance services, such as in the case of mutual aid societies in supplementary healthcare, it signs collective agreements for its members under a model that continues to distinguish the overall insurance operation from that conducted through a premium insurance policy¹⁶.

The limited resources available for delivering health services have prompted a broad discussion about the need to structure the demand for health and social services through a multi-pillar system (public and private). In the private sector, this includes insurance companies offering coverage for health-related risks, which vary (mutual aid societies, pension funds, independent funds, and company funds) but share common principles: no profit motives, non-discrimination against the insured individuals, an open-door policy allowing anyone to join regardless of their health condition, and a waiver of withdrawal, meaning that the entity providing the guarantee cannot exclude any of its “members,” while also emphasizing the mutual principle understood as sharing resource for common goals¹⁷.

A risk associated with the insurance coverage for enhancing reproductive health is that it may encourage unnecessary medical interventions. Excessive medicalization refers to an overreliance on medical practices, which can significantly impact health insurance plans. Policies might cover unneeded treatments, leading to increased costs, but they also provide reimbursements for specialized care and diagnostics. This excessive medicalization can take various forms, such as a high number of diagnostic tests even during normal pregnancies, and it is evident in how health insurance policies are managed. Pregnancy and childbirth offer a clear example of contexts in which the effects of excessive medicalisation are particularly evident in clinical practice. Indeed, data from ISTAT show that in Italy the number of ultrasound examinations performed during pregnancy frequently exceeds the levels recommended by clinical guidelines. As early as 2013, more than 80% of pregnant women underwent more than three ultrasound scans, and the proportion of women receiving seven or more examinations rose markedly—from 23.8% in 2000 to

¹⁶ S. LANDINI, *Assicurazione e salute*, in *Sanità, Finanza, Etica*, F. CAPRIGLIONE a cura di, Milano, 2025, 209 ff.

¹⁷ EAD., *Assicurazione e salute*, cit., 209.

37.6% in 2013—highlighting a persistent trend towards overuse of diagnostic interventions.¹⁸

This pattern highlights the broader issue of excessive medicalisation in pregnancy and childbirth. Recent evidence confirms that the frequency of ultrasound examinations during pregnancy in Italy continues to exceed clinical guideline recommendations. The World Health Organization generally advises two routine ultrasound scans—one between 11 and 14 weeks of gestation and another between 18 and 20 weeks. Nevertheless, a substantial proportion of Italian women undergo ultrasound examinations more frequently, even beyond situations of clearly defined clinical need. Data from 2022 indicate that many women still receive more than three ultrasound scans during pregnancy, well above the recommended threshold. While closer monitoring is warranted in high-risk pregnancies or in the presence of specific medical conditions, the overall pattern suggests a persistent tendency towards overuse. Compared with other European countries, Italy stands out for the higher intensity of ultrasound use, reflecting a continuing trend towards excessive medicalisation of pregnancy and birth. Another case is cesarean rates. In Italy, the rate of cesarean deliveries remains high compared to the European average, despite advice aimed at reducing unnecessary procedures. This highlights another aspect of the excessive medicalization of childbirth¹⁹.

Lastly, the medical interventions. Pregnancy is the leading cause of hospital admissions, and even in typical cases, it frequently involves numerous medical interventions that are not always justified. However, excessive medicalization can result in stress and negatively affect reproductive health²⁰.

5. MAR and new technologies.

The use of telemedicine could significantly enhance the accessibility of MAR by allowing services to be delivered remotely through fixed, wireless, and mobile connections²¹. Telemedicine can substantially reduce the need for in-person interactions—such as those occurring in waiting rooms—while ensuring that the transmission of sensitive health information is conducted in compliance with robust privacy and data protection standards. Within this

¹⁸ ISTAT, *Gravidanza, parto e allattamento al seno*, available here <https://www.istat.it/it/files/2014/12/gravidanza.pdf>

¹⁹ Id., *Rapporto sull'evento nascita in Italia (CeDAP) - anno 2024*, 6.

²⁰ G. DOMENIGHETTI, *How health marketing harms*, La Voce, 18.9.2009.

²¹ On this theme see, AA.VV., *The impacts of telemedicine on assisted reproduction: a systematic review and meta-analysis*. In *Reprod Biomed Online*, 2024; AA.VV. *Telemedicine in Obstetrics: Building Bridges in Reproductive Healthcare-A Literature Review*, in *Reproductive Medicine*, 2024, 30.

broader framework, the concept of e-health is commonly used to describe the integration of digital technologies into healthcare delivery.

The expansion of telemedicine and the still-emerging e-health ecosystem creates significant opportunities for the exchange and sharing of information among healthcare professionals, institutions, and patients, fostering continuity of care and more efficient service provision. However, a critical challenge remains technological literacy. This issue is particularly salient among older individuals and their caregivers and is especially relevant in a country such as Italy, where the average age of the population is approximately 47 years. Addressing digital skills gaps is therefore essential to ensure that the benefits of telemedicine are equitably distributed and do not exacerbate existing social and generational inequalities²².

As argued by scholars, in the Italian context, for example, a first solution that could be adopted would be to make the figure of a subject legally relevant, similar to that identified in the law on informed consent and advance treatment provisions (DAT) (so-called “*fiduciario*” pursuant to Article 4 of Law 219 of 2017)²³. This aspect has become crucial today, given that with Legislative Decree No. 29 of 15 March 2024, 15 March 2014, the Italian legal system has decided to promote the use of preventive healthcare and telemedicine tools in the provision of care services in order to enable elderly people to maintain the best possible living conditions in their own homes, with priority given to elderly people suffering from at least one chronic condition²⁴. For these reasons, telemedicine must therefore face up to growing challenges (related to data protection, guaranteed access for underserved communities, the elderly and the chronically ill) while at the same time improving the type of services provided through this method.

Furthermore, it is essential to underline the security risks associated with digital health services. In the absence of adequate regulation, weaknesses in information systems may emerge, making it imperative for both public and private actors to place greater emphasis on data protection and cybersecurity. Compliance with established guidelines and data protection norms should be regarded not merely as a legal obligation, but as a core indicator of the quality and trustworthiness of healthcare services.

The increasing circulation of health information also calls for shared standards in the collection, storage, and processing of personal data. While modern technologies are transforming social interactions and expanding access to knowledge, they simultaneously amplify vulnerabilities related to data misuse. The digitalisation of public services offers substantial

²² See ISTAT, *Censimento e dinamica della popolazione - Anno 2024* <https://www.istat.it/wp-content/uploads/2025/12/Censimento-e-dinamica-della-popolazione-Anno-2024.pdf>

²³ T. GALLELLI, G. MALVI, S. RASPANTI, A. REGGIANI, *Il miglioramento delle competenze digitali degli anziani per rafforzare la loro inclusione sociale*, in *Sanità Pubblica e Privata*, 2024, 2, 23 -30.

opportunities for efficiency and inclusion, but it also introduces new risks, including the potential misuse of public authority and erosion of individual privacy, which must be addressed through robust governance and oversight mechanisms.

In this new landscape, it is vital to find a balance between the right to privacy and other constitutional rights, such as equality and participation in democracy. The European Commission has introduced a Regulation regarding the European Health Data Space (EHDS) to promote the accessibility and exchange of health data across borders. This was approved by the Council and the European Parliament in 2024 and published in the European Official Journal on March 5, 2025, along with the Ministry of Health's Decree from December 31, 2024, which establishes the Health Data Ecosystem (EDS). This system is set to be fully functional by March 31, 2026, according to the deadlines outlined in NRP Mission 6 Health.

With regard to this Regulation, it is important to emphasise that a high level of security - despite some concerns regarding the security of health data²⁵ - is adequately addressed by Regulation (EU) No 2024/2847 (Cyber Resilience Act), which provides for uniform technical documentation for health software in relation to the safety of digital health products²⁶.

The goal is to enhance citizens' access to and control over their electronic health data, as well as to promote the reuse of that data for research and innovation. The real challenge will be to offer citizens a way to give their informed consent to the reuse of health data, which truly involves them in the management and use of their own data²⁷.

For the implementation of the aforementioned Regulation, EU Member States are required to establish a national digital health authority (Article 19 of the European Health Data Space Regulation) responsible for ensuring compliance with and execution of its provisions. The Regulation promotes a broader and more integrated approach to health data, encouraging it to be viewed not solely as an object of protection, but also as a strategic resource for generating knowledge and public value, while fully safeguarding individual privacy. The legal and regulatory frameworks outlined above define the conditions under which health data may be collected, accessed, and processed with the aim of fostering innovation, research, and evidence-based

²⁵ See F. CASAROSA, *European Health Data Space – Is the Proposed Certification System Effective against Cyber Threats?* in *European Journal of Risk Regulation*, 2024.

²⁶ Coordination already evident in the amendments made to the Cyber Resilience Act with the EHDS, Article 108.

²⁷ On the consent for the reuse and the individual autonomy through an effective consent see A. ROSSI, *One Form to Rule Them All: Towards a Personalized, But Standardized, European Data Altruism Consent Form*, in F. CASAROSA, F. GENNARI, A. ROSSI, (eds) *Enabling and Safeguarding Personalized Medicine. Data Science, Machine Intelligence, and Law*, 7, Cham, 2025.

policymaking. Achieving these objectives is inherently ambitious and will necessitate a profound cultural shift in the governance and use of health data – one that is likely to be particularly challenging, yet crucial, in the Italian context.

6. Conclusions.

Reproductive health represents a critical dimension of women's well-being across the life course and acquires renewed relevance in the context of population ageing, delayed childbearing, and persistent gender inequalities. The Italian experience discussed in this paper illustrates how demographic change, lifestyle factors, and biological constraints interact with health systems, welfare arrangements, and emerging technological solutions, shaping both risks and opportunities for reproductive health.

The analysis highlights the importance of shifting from a predominantly curative approach toward a preventive, integrated, and rights-based framework that combines public responsibility with well-regulated private initiatives. Public–private partnerships, including supplementary insurance schemes, can play a supportive role in expanding access to preventive services and medically assisted reproduction, provided that they avoid excessive medicalization and uphold principles of equity, informed consent, and data protection.

At the same time, education, health literacy, and awareness of reproductive ageing emerge as essential tools for enabling informed choices and reducing avoidable fertility impairments. In an ageing society, policies aimed at promoting reproductive health must therefore adopt a life-course perspective, addressing early prevention, timely access to care, and the social conditions that influence reproductive decisions. Strengthening coordination between public institutions, private actors, and regulatory frameworks will be crucial to ensuring that reproductive health policies contribute to both individual well-being and the long-term sustainability of welfare systems.

