## The Transgender: Legal Path to Surgery

22

Domenico Costantino

## 22.1 The Right to Gender Identity

The phenomenon of transsexualism has aroused a growing interest not only from a medical and sociological point of view, but also from a legal point of view, with particular regard to the human rights of trans and intersex people, also in order to avoid any discrimination based on gender identity and sexual characteristics.

Since medical science has made possible a realignment between the body and psyche of a person "affected" by gender dysphoria, there has been a need to legally regulate this process of "harmonization," providing for its conditions, limits, and effects.

Law no. 164 of 14 April 1982 filled the regulatory gaps in the matter, recognizing a real right to gender identity, as a specific declination, according to the now more consolidated private and public doctrine, of the rights to sexual identity and health, protected by Articles 2 and 32 of the Constitution.

It is not easy to define "gender identity," as the field of sex and gender has given rise to a proliferation of terms, whose meaning varies not only over time, but also within the same discipline and between one discipline and another. Therefore, before proceeding to analyze the right to gender identity, it is appropriate to frame and define transsexualism, in order to fully grasp what have been the problems at the center of jurisprudential and doctrinal debates.

The WHO's International Statistical Classification of Diseases and Related Health Problems (ICD-10)1 had included transsexualism within Gender Identity Disorders as "the desire to live and be accepted as a member of the opposite sex, usually accompanied by a feeling of discomfort or inappropriateness related to one's anatomical sex and a desire to resort to hormonal treatments and surgeries to adapt your body as appropriate as possible to your favorite sex," and states that "the transsexual identity must have been present persistently for at least two years."

<sup>1</sup>Available on https://www.who.int/classifications/icd/ ICD10Volume2\_en\_2010.pdf; for further analysis see F. FONTANAROSSA, Il diritto all'identità di genere nel procedimento di rettificazione dell'attribuzione di sesso: cenni comparatistici, in Europa e Diritto Privato, fasc. 2, 1 June 2018, pag. 709.

D. Costantino (⊠)
Family Law at the Department of Law,
University of Bari, Bari, Italy

e-mail: domenico@studiolegalecostantino.it

D. Costantino

That definition, however, was reviewed in the context of ICD-11,<sup>2</sup> which, considering the evidence that trans-related and gender diverse identities are not conditions of mental ill health, and classifying them as such can cause enormous stigma, has replaced diagnostic categories like ICD-10's "transsexualism" and "gender identity disorder of children" with "gender incongruence of adolescence and adulthood" and "gender incongruence of childhood", respectively.

Similarly, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), following amendments aimed at "reducing phenomena of social stigma," has also qualified transsexualism as gender dysphoria, understood as a "general descriptive term" that "refers to affective/cognitive distress in relation to the assigned gender, but assumes a greater specificity only when it is used as a diagnostic category." In the case of adults and adolescents, it must be possible to find for the purposes of diagnosis "a marked inconsistency between the gender experienced/expressed by an individual and the assigned gender, lasting at least six months".<sup>3</sup>

With regard to the notion of gender, we read in the DSM-5 that "the need to introduce the term gender arose from the observation that for individuals with contrasting or ambiguous sexual biological indicators (e.g. intersex) the role experienced by society and/or identification as male or female cannot be associated or predicted tout court by classical biological indicators and, moreover, some individuals develop an identity as male or female in contrast with their uniform set of traditional biological indicators" and that therefore the term gender is used "to indicate the public role lived (and generally recognized from the legal point of view) (...) but, contrary to some socio-constructionist theories, biological factors are considered a contribution, in interaction with social and psychological factors, to the development of gender".4

That said, the "right to gender identity" starts from the need to recognize, on the part of individuals, a right to self-determination that is considered, in the private and family field, absolute and insusceptible of conditions and limits to its exercise, in the sense that it pertains to that field of freedom that the legal system must protect from aggression, and that it itself cannot attack.

Already in 1985, the Constitutional Court, on the occasion of the judgment on the constitutional legitimacy of Article 1, paragraph 1, of Law no. 164 of 14 April 1982, had affirmed the need to recognize and respect gender identity, that is, the right of transsexual persons to live harmoniously their being in relation to others, also through the modification of personal data, as an expression of the right to personal identity, falling within the framework of the fundamental rights of the person, referred to Article 2 of the Constitution.<sup>5</sup> In fact, according to the Court, "Law 164 of 1982 is therefore part of an evolving juridical civilization, ever more attentive to the values, freedom and dignity of the human person, who seeks and protects even in minority and anomalous situations. It is necessary, according to these incisive indications, that the interpretation of Law 164/82 takes into account the inclusion of the right to the recognition of gender identity in an evolving legal civilization as it is subject to changes in the scientific, cultural and ethical approach to issues inherent, in the present case, to questions of sex change and to the phenomenon of transsexualism and more generally to choices relating to gender and the sphere of sexual identity".6

It is important to understand if the concept of gender identity has been recalled by Italian jurisprudence, *primarily* the constitutional one, exclusively with a view to balancing the individual's interest in not undergoing health treatments (surgical or hormonal), extremely invasive and dangerous for health, <sup>7</sup> on the one hand, and the public

<sup>&</sup>lt;sup>2</sup>The 11th edition of the International Statistical Classification of Diseases and Related Health Problems (ICD-11) is a document that provides standardized data and vocabulary to help diagnose and monitor health problems around the world.

<sup>&</sup>lt;sup>3</sup>American Psychiatry Association, DSM-5, Italian edition, curated by M. BIONDI, Milan, 2014, pp. 527–528.

<sup>&</sup>lt;sup>4</sup>American Psychiatry Association, DSM-5, Italian edition, curated by M. BIONDI, Milan, 2014, pp. 527–528.

<sup>&</sup>lt;sup>5</sup>Constitutional Court, 23 May 1985, n. 161, https://www.giurcost.org/decisioni/1985/0161s-85.html.

<sup>&</sup>lt;sup>6</sup>Constitutional Court, 23 May 1985, n. 161, https://www.giurcost.org/decisioni/1985/0161s-85.html.

<sup>&</sup>lt;sup>7</sup>Article 13 Cost., which protects personal freedom, should also operate with respect to decisions concerning the body in its physical dimension, and therefore with respect to the desire to rectify one's own gender.

interest in the certainty of legal relationships, on the other.

With regard to the interests of the individual, the right to health and the right to personal identity are highlighted, in its component of sexual self-determination and gender identity.

The right to gender identity, often recurrent in Italian jurisprudential rulings without a precise identification of the "content", at international and supranational (community) level instead finds more references, although for the most part they are acts without normative value.<sup>8</sup>

It was with the judgment Christine Goodwin v United Kingdom of 11 July 20029 that the European Court of Human Rights began to look at the issue of transsexualism from the perspective of the protection of sexual identity, starting from the interpretation of Article 8 ECHR. The judges consider that this rule considers "personal freedom" as an important principle, which grants protection to the "personal sphere of each individual" and which includes "the right of each person to determine the particular characteristics of his identity as a human being." About the effects that the recognition of the possibility of rectification may have on civil society, the Court "considers that it can reasonably be required of society that it accept certain inconveniences in order to allow persons to live in dignity and respect, in accordance with the sex-

<sup>8</sup>For example, in 2009 the Commissioner for Human Rights published a thematic document of the European Council titled "Human rights and gender identity", which required member States to officially recognize the gender change of transgender persons, condemning the need for medical treatment to access sex and name change procedures, which were considered too long (T. HAMMABERGH, I diritti umani e l'identità di genere, http://transrespect. org/wp-content/uploads/2015/08/Hberg-Ital.pdf); always at the international level, worthy of mention are the "Princes of Yogyakarta", a set of principles laid down for the protection of the human rights of transgender persons, adopted at the International Congress held at the Gadjah Mada University, Yogyakarta, Indonesia in November 2006; these principles were considered in the document "Human rights and gender identity" whereas the European Council issued in July 2009 (The Yogyakarta Principles on the Application of International Human Rights Law in Relation to Sexual Orientation and Gender Identity, 2006, http://www.yogyakartaprinciples.org/principles-en/)

<sup>9</sup>ECHR, Christine Goodwin y. United Kingdom [GC], 11 July 2002, no. 28957, www.dejure.it

ual identity chosen by them at the price of great suffering."

The scientific and cultural debate has profoundly changed the relationship between the right to gender identity and therefore to sexual self-determination, 10 and the right to health, two fundamental rights that, according to the originalist interpretation, had to be the object of choice by the individual in gender transition. The issue discussed concerned the need for surgery to adapt the primary sexual characteristics for transsexuals who want to obtain rectification.

On this point, the Supreme Court underlined how sexual identity lives on three elements: body (soma), self-perception (psyche), and social role (polis)<sup>11</sup>, reflecting the concept of "health," which in the definition provided by the WHO develops on a trilateral form: "a state of complete physical, mental and social well-being".<sup>12</sup>

We can therefore grasp a strong parallelism between the three elements of sexual identity and the three elements characterizing the concept of health, such that identity and health are not automatically in conflict, but are included, as the complete psycho-physical-social wellbeing can only be achieved if there is no suffering regarding the self-perception of one's gender, one's body, and one's social role. There is no doubt, therefore, that "the interest in sexual identity, in so far as it involves the dignity of the human person, his fundamental right to the free development of the personality, the very right to health, understood, also and above all as mental health, is an essential interest of the person and, as such, destined to prevail over any other interest."13

Therefore, in balancing the interests at stake, it is necessary to refer to a rigid principle of "proportionality," as underlined by the supranational

<sup>&</sup>lt;sup>10</sup>ECHR, Van Kück c. Germany, 12 June 2003, No 35968/97, http://www.crisalide-azionetrans.it/CASE%20 OF%20VAN%20KUCK%20v.%20GERMANY.pdf.

<sup>&</sup>lt;sup>11</sup>WHO, Ottawa Charter for Health Promotion, 1948.

<sup>&</sup>lt;sup>12</sup>Court of Cassation, 20 July 2015, n. 15,138, www. dejure.it.

<sup>&</sup>lt;sup>13</sup>On this point G. CARDACI, Per un "giusto processo" di mutamento di sesso, in Diritto di Famiglia e delle Persone (II), fasc.4, 2015, p. 1459.

D. Costantino

order,<sup>14</sup> also with specific regard to sexual reassignment.<sup>15</sup>

The European Court of Human Rights has clarified that gender identity is included in the non-exhaustive list of protected characteristics set out in Article 14 of the ECHR<sup>16</sup> and that States Parties to the European Convention on Human Rights have an obligation to legally recognize the preferred gender.<sup>17</sup>

## 22.2 The Procedure for Rectification of the Attribution of Sex

Before the entry into force of Law no. 164/1982, published in the Official Gazette no. 106 of 19 April 1982, it was not allowed to perform surgical interventions for the reassignment of sex other than that of birth. In fact, those who wished to access these treatments turned to foreign clinics to perform surgical interventions in the States that admitted this practice, and then returned to Italy and submitted an application for correction of gender data pursuant to articles 165 and 167 of Royal Decree 9 July 1939, n. 1238 (civil status system in force at the time) and art. 454 of the Italian Civil Code.

These provisions, however, were limited to cases of modification of material errors committed at the time of the birth certificate, as in the rare but still possible cases of ambiguity of the

external genitalia or of late natural development of the subject towards the opposite sex to that initially ascertained or even of the simultaneous presence in the same individual of the sexual characteristics of both sexes.

The Constitutional Court itself had been referred to the question of the legality of those provisions precisely because the living law did not consider them applicable to cases of voluntary change in the sexual characteristics of the individual, but the question had been rejected.<sup>18</sup>

<sup>18</sup>Constitutional Court, 26 July 1979 n. 98, www.giurcost. org: "The question of constitutional legitimacy had been raised by the Court of Livorno, where the applicant had submitted an application for rectification of the birth certificate with attribution of the female sex, alleging that, although he was born with male sexual characteristics, he had always identified himself in the female gender, had undergone reconstructive demolition surgery in Casablanca and was socially integrated and accepted in his context of reference as a person of sex female. With a compliant result, the following year was also pronounced by the Court of Cassation, first section, judgment of 3/4/1980 n. 2161: The assessment and documentation of the sex of the person, carried out at the time of birth certificate, pursuant to Articles 67, 70 and 71 of the civil status system (R.D. 9 July 1939 n 1238), with exclusive regard to the external genital organs, are subject to subsequent rectification, pursuant to Articles. 165 et seq. of the aforementioned system, manifestly not in contrast with Articles 2 and 24 of the Constitution (judgment of the Constitutional Court no. 98 of 1979), only as a result of changes in sexual characteristics, for a natural and objective evolution of a situation originally not well defined or only apparently defined, although linked to the psychic orientation of the person himself, or assisted by surgical interventions aimed at highlighting already existing organs, and not also, therefore, for the mere finding of a psychosexuality contrasting with the clear characteristics of the sexual organs, or for manipulative or demolition surgical interventions, aimed at changing the natural anatomical reality" (in terms 1236/75, mass. No. 374696; v 3948/74, mass No 372518). On the European scene, a very similar case was brought to the attention of the Commission of the European Court of Human Rights (decision of 9 May 1978, in the case of Daniel Oosterwijck v Belgian government). She was a Belgian citizen who, after undergoing hormone therapy and various surgeries, had assumed an outward appearance and male gender identity and had requested the correction of the personal data, denied at first instance and on appeal. The European Court of Human Rights (decision of 6 November 1980 in case no. 7654/76) which rejected it for failure to exhaust internal remedies).

<sup>&</sup>lt;sup>14</sup>ECHR, Godelli c. Italy, 25 September 2012, n. 33,783/0, https://www.camera.it/application/xmanager/projects/leg17/attachments/sentenza/testo\_ingleses/000/000/518/Godelli.pdf.

<sup>&</sup>lt;sup>15</sup>Recommendation CM/Rec(2010) of the Committee of Ministers of the Council of Europe to the Member States on measures to combat discrimination based on sexual orientation or gender identity, 31 March 2010, sec. IV, § 20: "The prerequisites, including physical modifications, necessary for the legal recognition of the once the sex change has taken place, they should be regularly reviewed in order to eliminate those that prove to be abusive".

<sup>&</sup>lt;sup>16</sup>ECHR, Identoba and Others c. Georgia, 12 May 2015, no. 73235/2012, https://www.questionegiustizia.it/articolo/cedu\_pillole-di-maggio\_08-09-2015.php.

<sup>&</sup>lt;sup>17</sup>ECHR, Christine Goodwin y. United Kingdom, 11 July 2002, no. 28957, www.dejure.it.

In Italy, it was time to await the entry into force of Law No 164 of 14 April 1982 laying down rules on the rectification of the attribution of sex, for a complete regulation of the procedural aspects of the relevant procedure. However, there were many critical issues encountered.

Article 1 of Law 164/1982 provides that "rectification shall be made by virtue of a judgment of the Court of First Instance which has the force of res judicata attributing to a person sex other than that set out in the birth certificate following changes in his sexual characteristics."

In interpreting the norm, a first problem that has been placed is that relating to the identification of what are the modifications of the "sexual characteristics" that legitimize the rectification of sex. It was taken, then, as a reference the third paragraph of the article 31 d.lgs. 150/2011, according to which "where it is necessary to adapt the sexual characteristics to be carried out by means of medical and surgical treatment, the Court of First Instance authorizes it by a judgment which has the rule of res judicata," although it does not provide a clear definition of "sexual character" nor of "sex." Thus, in the jurisprudential and doctrinal debate, two different orientations have emerged.

The first orientation, linked to the need, of public policy, to preserve a degree of certainty with respect to the boundaries between the two genders, as well as to the idea of a necessary sterility of the transsexual person who obtains the rectification of sex, affirms the need, for the purposes of sex rectification, for a modification of the "primary" sexual characteristics identified in the genital and reproductive organs. <sup>19</sup> Therefore, also in accordance with the conclusions of the Court of Justice no. 161/1985, it was considered indispensable, for the transsexual who wanted to obtain the rectification of sex, the convergence "between soma and psyche" obtained with surgery to adapt the primary sexual characteristics.

Another orientation, now endorsed by the rulings of the Constitutional Court and the Court of Cassation but a minority in the 90s, evaluates as sufficient the modification of the "secondary aesthetic-somatic and hormonal sexual characteristics," considering that a surgical intervention that modifies the genital apparatus becomes necessary only when it ensures "to the transsexual subject a stable psychophysical balance, that is to say when the discrepancy between anatomical sex and psychosexuality cause in the person concerned a conflictual attitude of rejection of his sexual organs"20 or, according to other jurisprudence, "only in the case in which it is necessary to ensure the transsexual subject a stable psychophysical balance". 21 According to this guideline, however, for the purposes of rectification, it seems that hormonal treatment that adapts "the phenotype to mental sex" seems to remain necessary, thus achieving "psychophysical stability and well-being".22

In the face of these different orientations of the jurisprudence of merit, the Court of Cassation, with judgment of 20 July 2015, no. 15138, interpreted Law no. 164/1982, as amended by Legislative Decree 150/2011, following the second orientation, and therefore considering it possible to rectify sex even in the absence of a surgical treatment modifying the primary sexual characteristics, considering, moreover, that the same judgment of the Constitutional Court of 1985<sup>23</sup> had defined the law in question as the result of a "juridical civi-

<sup>&</sup>lt;sup>19</sup>In this sense Court Massa, 11 January 1989, in *Arch. Civ.*, 1989, II, 737; Court Vicenza, 2 August 2000, in *Dir. Fam.*, 2001, I, 220; Court Salerno, 15 June 2010, n. 1387, www.iusexplorer.it; Court Vercelli, 12 December 2014, n. 154, in *Dir. Fam.*, 2015, I, 1379; Court Rimini, 12 December 2014, www.studiolegaleleggiditalia.it.

<sup>&</sup>lt;sup>20</sup>Court Rome, 18 October 1997, in *Dir. Fam.*, 1998, I, 1033, with note of M.C. La Barbera, *Transessualismo e mancata volontaria, seppur giustificata, attuazione dell'intervento chirurgico*; Court Rome, 14 April 2011, n. 5896, in *Fam. and Dir.*, 2012, 183, with note of M. Trimarchi, *L'attribuzione di una nuova identità sessuale in mancanza di intervento chirurgico*.

<sup>&</sup>lt;sup>21</sup>Court Rovereto, 3 May 2013, in *Nuova Giur. Civ.*, 2013, I, 1116, with note of F. BILOTTA, *Identità di genere e diritti fondamentali della persona*.

<sup>&</sup>lt;sup>22</sup>Court Messina, 4 November 2014, in *Nuova Giur. Civ.*, 2015, I, 543, with note of A. VESTO, *Fostering the emergence of sexual identity to protect human dignity in its uniqueness.* 

<sup>&</sup>lt;sup>23</sup>Constitutional Court, 5 February 1985, n. 161, http://www.giurcost.org/decisioni/1985/0161s-85.html.

288 D. Costantino

lization in continuous evolution increasingly attentive to the values of freedom and dignity of the human person, which seeks and protects even in minority and anomalous situations" and as such cannot be subjected to a static reading, historically crystallized.<sup>24</sup> Ultimately, the relevance of the notion of "gender identity" emerges. According to the address expressed by the Supreme Court, the desire to realize "a coincidence between soma and psyche" is "the result of an elaboration (...) of one's gender identity, realized with the support of necessary medical and psychological treatments" and the path of "adaptation" is a "process of self-determination". The construction of the "new gender identity" is conceived as the point of arrival of an individual process but, in any case, remains connected to a physical transformation that adapts the body to the "destination sex" according to objectively appreciated criteria. In fact, we read in the ruling that it remains "unavoidable a rigorous assessment of the definitiveness of the choice based on the criteria deducible from the current landings and shared by medical and psychological science", and it becomes necessary "a subjective path of recognition of this primary profile of personal identity neither short nor devoid of interventions amending the original somatic and hormonal characteristics." The Court Cassation seems to affirm the need for an intervention that modifies the body of the trans person; with regard to the adequacy of the amendments, the Judges of Legitimacy attach great importance to judicial control, which must consist in "a rigorous assessment of the completion of this path," precisely in the face of the need, as anticipated, for a balance between the right to self-determine one's identity and the public interest in clarity in the identification of sexual genders and legal relationships.

The Constitutional Court, prompted by an order for the remission of the substantive juris-

prudence aimed at declaring the unconstitutionality of Article1, paragraph 1, of Law 14 April 1982 no. 164,<sup>25</sup> with judgment of 5 November 2015, no. 221, followed the interpretation of the Court of Cassation, and therefore excluded the need for surgical intervention for the purpose of rectification, as "corollary of an approach that—in coherence with supreme constitutional values—it refers to the individual the choice of the methods through which to realize, with the assistance of the doctor and other specialists, his own transition path, which must in any case concern the psychological, behavioral and physical aspects that contribute to composing the gender identity." The profound merit of this judgment is to understand that the right to identity and the right to health are never in opposition if the protection of the self-determination of the subject is put at the center and the protection of public interests is limited only to temperaments punctually enunciated, ensuring that the soma-psyche reunification is desirable only if it corresponds to the personal needs of the subject, but never as an exclusive safeguard of public interests (which are well protected through the irreversibility of the choice and the modification of secondary sexual characteristics). In this way, the doors of a complete transition are opened even to subjects who have not considered it appropriate to modify their primary characters, making the legal boundaries between transsexuals and transgenders fluid from now on.26

This approach was recently reconfirmed in two judgments concerning the constitutionality of Article 1 of Law no. 164/1982. In the proceedings in question, the Consulta had the opportunity to return to the subject of transsexualism, confirming the centrality, in the context of the sex change process, of the judicial verification phase and excluding, at the same time, that the pure and simple will be expressed by the subject who intends to change sex is sufficient to "overcome" the essential evaluation step

<sup>&</sup>lt;sup>24</sup>On the need for an evolutionary interpretation when it comes to the rights of the person cf. in accordance with ECHR, Stafford v. United Kingdom [GC], 28 May 2002, no 46295/99, 2002, § 68; ECHR, Y.Y.c. Turkey, 10 March 2015, no. 14793/08, § 103.

<sup>&</sup>lt;sup>25</sup>Court Trento, ord. 20 August 2014, no. 228, www. dejure.it.

<sup>&</sup>lt;sup>26</sup>Constitutional Court, 5 November 2015, no. 221, www. dejure.it.

regarding the need for surgical intervention, the latter of exclusive judicial jurisdiction.<sup>27</sup>

<sup>27</sup>Constitutional Court, 13 July 2017, no. 185 and Constitutional Court, 13 July 2017, no. 180, www.dejure. it. The Constitutional Court no. 180/2017 clearly states that: "in the light of the principles affirmed in Judgment no. 221 of 2015, it must be reiterated that the constitutionally adequate interpretation of the Law no. 164 of 1982 allows you to exclude the requirement of normoconformation surgery. And yet this does not exclude at all, but rather supports, the need for a rigorous assessment not only of the seriousness and univocality of the intent, but also of the objective transition of gender identity, which emerged in the path followed by the person concerned; path that corroborates and reinforces the intent thus manifested. Therefore, in line with the principles referred to in the judgment, it must be excluded that the only voluntarist element can be of priority or exclusive importance for the purpose of ascertaining the transition. In line with what was stated in the judgment referred to, it should once again be noted that the individual's aspiration to the correspondence of the sex attributed to him in the population registers, at the time of birth, with that subjectively perceived and lived undoubtedly constitutes an expression of the right to recognition of gender identity. In the system of Law No 164 of 1982, this is achieved through a judicial procedure that guarantees, at the same time, both the right of the individual and those requirements of certainty of legal relationships, on which the survey of the population registers is based. The reasonable balance between the multiple instances of guarantee was, in fact, identified by entrusting to the judge, in the assessment of the irrepressible peculiarities of each individual, the task of ascertaining the nature and extent of the changes in sexual characteristics, which contribute to determining personal and gender identity".

Constitutional jurisprudence has therefore shown an "openness" towards the recognition of gender identity, with the consequent positions taken to simplify the individual's access to the sex change process.

In any case, it will be essential to appeal to the ordinary civil Court, and still following the ritual forms of the ordinary judgment of cognition, if the interested party intends to obtain the rectification of the civil status documents in the part relating to the indication of sex and forename, with an action, called, in fact, "rectification of sex attribution."

The Italian jurisprudence, first of all the constitutional one, intervened in the matter of rectification of the attribution of sex, has repeatedly reiterated that the aspiration of the individual to the correspondence of the sex resulting in the population registers with that subjectively perceived and lived constitutes an expression of the right to gender identity.

If it is true that public awareness is improving, it is equally true that people suffering from gender dysphoria continue to suffer from strong pressures social and the need for greater legal protection, through the adoption of necessary measures to guarantee the equality and non-discrimination based on gender identity, gender expression, and sexual characteristics, can no longer be overlooked.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

