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Legal aspects of sexually transmitted diseases: abuse, partner notification and prosecution

A. ARGO, S. ZERBO, V. TRIOLO, L. AVERNA, T. D'ANNA, A. NICOSIA, P. PROCACCIANTI

Section of Legal Medicine, Department of Biopathology Biotechnology and Forensic Medicine University of Palermo, Palermo, Italy

Sexually transmitted diseases (STDs), with special emphasis to HIV infection, involve legal and ethical issues regarding informed consent to submit to a diagnostic, observance of professional secrecy in regard to partner(s) and community; legal troubles of particular difficulties are related to STD involving minors; lastly, physicians must be able to recognize the state of so called medical necessity. Knowledge and awareness of these related obligations are crucial to STD in medical practice; it is also important to allow for proper protection of victims of suspected sexual abuse under observation of healthcare. With regard to this aspect should be emphasized that violence against women and minors is a worldwide problem that has not yet been sufficiently acknowledged. Italian legislation (Law n. 96/1996) against rapes finally gave significant relevance to sex crimes. When sexual abusers have to be evaluated some obstacles may arise for lack of appropriate interdisciplinary approach, with insurance of the collection of biological samples, also related to STD diagnosis and alerts of legal authorities. Personal preconceptions may interfere with investigation if the biological evidences in children are few. In this regard, rules of document "Carta di Noto" drafted in 1996 and reviewed in July 2002 include some specific indications aiming to grant the reliability of the results of technical investigations and authenticity of the statements of the alleged victims.

KEY WORDS: Child - Sexual abuse - Forensic medicine - Legal issues - Sexually transmitted diseases.

We will first discuss abuse and the role of adequate training of health professionals in this field of forensic application.

In the last decades, because of the greater attention and awareness of inviolable rights of individuals, the phenomenon of sexual violence and any other form of violence against women and minors aroused, even in our Country, increasing interest and attention of political, health, and social organizations. In our culture, family is generally considered a safe place where people seek love, safety and shelter. However, the family is sometimes also a life threatening setting, where violence is perpetrated more and more frequently, usually by men who have, or had, a relationship based on trust, intimacy or power with the women involved (fathers, boyfriends, former partners, brothers, sons). According to recent international epidemiological studies,[1-5] the phenomenon of violence against women and minors develops above all within family relations, involving victims of every cultural level, even if in different forms and degrees, causing physical damages and severe consequences with regard to mental health. Gender violence is generally a combination of physical, sexual, psychological and financial violence, with recurrent episodes in time that tend to become increasingly more violent. According to the World Health Organization (WHO),[6] "To speak of gender violence in relation to the widespread violence against women and minors means to shed light on the 'sexed' dimension of the phenomenon as manifestation of a historically unequal relationship between men and

Corresponding author: A. Argo, Section of Legal Medicine, Departmen of Biopathology Biotechnology and Forensic Medicine, University of Palermo, Via del Vespro 129, 90127 Palermo, Italy.
E-mail: antonella.argo@unipa.it

women, which has lead men to abuse and discriminate women" and therefore as "one of the crucial social mechanisms that force women into a subordinate position to men". In recent report by WHO,[7] "Gender violence is the greatest public health issue and violation of human rights in the world; it is a violation of a person's physical and mental integrity and it unfolds in various forms: physical maltreatment (lacerations, fractures),[8] genital mutilation, unwanted pregnancies, gynecological disorders, sexual dysfunctions, sexually transmitted diseases, abortions [9-12] self-destructive behaviors, depression, eating disorders, obsessive-impulsive disorders, post-traumatic stress disorders, headaches.[13-18] Similarly, legal provisions approved regarding violence against women and minors and their interpretation also reflect the social and cultural processes serving a setting of this phenomenon. In Italy, marital authority, or rather the lawfulness of husbands to adopt measures to "correct" and discipline their wives, was abolished only in 1975 with the approval of the new family law. Moreover, crimes as "honor killings" and "shotgun weddings" were deleted from our code only in 1981. The first enabled husbands to receive sensibly minor sentences if they killed their wives owing to infidelity; the second enabled rapists to extinguish their offence if they married their victims. At the end of the 19th century, the crime of sexual assault was provided for the Zanardelli Penal Code (1889) and classified among the "crimes against public decency and family regulations", envisaging for the first time ever two different criminal charges as opposed to previous legislations: the crime of rape and the crime of indecent assault, for it takes into account that the offence against physical inviolability may present with different degrees of severity and thus sanctioned accordingly. The Zanardelli Penal Code, in compliance with the needs of a society evolving ever so slowly, considered rape an injury to physical inviolability and expression of a social and public matter of interest that must be safeguarded by the State. Subsequently, with the introduction of the Rocco Penal Code, the crime of rape was classified among the "crimes against public morality and decency"; while maintaining the differentiation between crimes of rape and indecent assault, this Penal code deems the degree of violence and menace of the perpetrator crucial among the constituent elements of the crime, and considers insufficient the mere dissent of the injured party. The new approach of Italian legislation in force offers widest support to the victims. Nowadays, the law n. 96/1996 provides for norms against rape finally giving a significant relevance to sex crimes, that were removed from the group of "crimes against morality and public decency" and classified among "crimes against the person and against personal freedom", thus also against sexual freedom intended as the free choice of engaging in sexual acts (Table I). The most important novelty standardization consists in unification of the crimes of rape and of indecent assault under a more generic category of sexual assault crimes, introduction of the notion of sexual acts, or rather any act aiming at the satisfaction of sexual desire.[19, 20] As per art. 609b of law n. 66/96, "anyone who, with violence or threat, or through an abuse of authority, forces others to perform or suffer sexual acts will be sentenced to five to ten years' imprisonment". The same sentence applies to anyone who leads others to perform or suffer sexual acts by: 1) abusing of physical or mental inferiority conditions of the injured party at the time of the fact; 2) deceiving the injured party by the per-

TABLE I.—*Italian law 66/1996 on sexual abuse.*

Art "609-bis"
Sexual abuse is committed by "*Anybody who, by means of violence or threat or because of abuse of authority, obliges somebody to do or be subject to sexual acts*".
The crime of "severe sexual abuse" occurs in the case sexual abuse is committed: a) abusing the conditions of physical or mental inferiority of the person offended when the violence is done; b) deceiving the person offended for having replaced the guilty to another person.
Art "609-ter"
The article envisages aggravating circumstances in case of acts perpetrated: a) against minors under 14 years; b) against minors under 16 years if the guilty is the ascendant, the adoptive parent or the guardian; c) by a person who is or simulate the quality of public official or responsible for public service; d) with the use of weapons or alcoholic substances or narcotic drugs or other substances or seriously damaging the health of the person offended; e) against person, however, subjected to limitations of personal freedom.

petrator posing as someone else. Art. 609 c of law n. 66/1996 provides for aggravated sentencing (imprisonment from 6 to 12 years) if the sexual assault is committed: 1) against any person under the age of 14; 2) with the aid of a weapon or of alcoholic, drug, or narcotic substances, or other means or substances severely prejudicial to the health of the injured party; 3) in any case against persons subjected to personal freedom limitations; 4) against any person under the age of 16 whom the perpetrator is related to, or is a natural or adoptive parent of, or legal guardian. Further innovative aspects consist in measures adopted against the independent crime of violence by people in group, in the acknowledgement of the sexual freedom of minors and of the mentally ill, and in the aggravation of sentences. Sexual assault can be prosecuted by the victim within six months from the fact. The legal notice cannot be withdrawn. Consequently, physicians aware of this sexual crime must notice legal authorities. Sexual assault or suspicious of sexual assault is officially indictable (with same duties on legal notice by physicians): 1) when related to an indictable offence, kidnapping, attempted murder, grievous injury, etc.; 2) in the event of group sexual assault; 3) if the fact is committed by a public official or public service officer in the pursuance of his/her duty; 4) if the sexual assault occurs against a person who, at the time of the fact, is under the age of 14; 5) if the fact is committed by a parent, even if adoptive, or respective cohabitant, by the legal guardian, or person responsible for the minor for health, education, training, surveillance or custody purposes; 6) if the sexual acts are committed with a person under the age of 10.

Medico-legal procedures related to rape/sexual assault

The identification, diagnosis, management and treatment of the victims who have suffered sexual abuse are complex issues involving medical, psychological, social, and juridical aspects. This makes crucial to involve different professional profiles and adopt a common and shareable language and method of intervention. The diagnosis of sexual assault/abuse is indeed a complex one requiring a multidisciplinary approach. It is well-known that it is rarely possible to make a diagnosis only on medical features: international literature reports that 50-90% of women and minors victims of ascertained sexual abuse show non-specific, or even normal, genital and/or anal evidence.[21, 22] Hence, the outcome of many cases of alleged sexual assault requires not only specialized and thorough anatomical-clinical knowledge,[23-25] but also specific forensic medicine skills so to acquire any evidence of committed crime.[26] The complexity of sexual assault cases requires the consequential collection of medical documentation in order to collect information on case history, on description of clothes and any traumatic lesion in genital and anal areas, supplied with iconographical reproductions in order to collect biological "evidence", which is crucial in the subsequent judicial procedure as proof of the violence suffered. The collection of medical documentation must be supplied with laboratory tests and specific information (analyses of possible traces detected and reported on clothes and genital-anal area, collection of biological secretions from the natural cavities and of biological samples in order to evidence the transmission of sexual diseases, if any), and a broad investigation involving both the physical examination of the victim, as well as a careful and detailed examination of places, facts and evidence, if any. For the matter of our interest we have to emphasize that relation between Sexual abuse of children and STDs is well known in specialized and forensic literature. The presence of a sexually transmitted infection (STI) is often used to support allegations, or, in some cases, may prompt investigation of possible abuse; any child or adolescent with a STI should be evaluated for sexual abuse, because in accord to Adam's Classification (Table II) it implies possibly sexual intercourse. However, testing for STIs in children presents a number of problems for the practitioner that are not usually faced when testing adults for the same infections. The identification of a STI in a child can have, in addition to medical implications, serious legal implications,[27] also concerning notice obligation to legal authority.[20] Review of recent data on the epidemiology of child sexual abuse including the epidemiology of major STIs (*Neisseria gonorrhoeae*, *Chlamydia trachomatis*, syphilis, herpes simplex virus, *Trichomonas vaginalis*, and human papillomavirus) summarized the current recommendations for diagnostic testing in this population. Specific infections in prepubertal children, such as *Neisseria gonorrhoeae* or *Chlamydia trachomatis*, are due to abusive contact and should be reported to Child Protective and/or Legal specialized Services.

TABLE II.—*Evidence of penetrating trauma or sexual contact in accord with Adam's classification.*

Diagnostic of sexual contact	Positive urine pregnancy test
Probable sexual contact	Positive for infection or vaginal culture
High specificity for abuse	Hymenal transection or hymenal laceration
Moderate specificity for abuse	Acute abrasion, laceration of fossa navicularis and perihymenal tissue
Indeterminarte finding	Deep posterior notch Diminished posterior hymen Diminished posterior hymen and prominent anal fold *vs*. scar. Anal scar and dilatation, without stool in ampulla

As the modes of transmission of anogenital infections with HPV and HSV are unclear, an evaluation for sexual abuse should be done,[28, 29] with prudential approach.

Strong impact of interdisciplinary approach to sexual abuse and gender violence (against children and women) on victims' surveillance

The importance of adequate recording and filing of all findings of forensic interest is further supported by the fact the physical examination of sexual assault victims often provides very little, if nothing at all. Unfortunately, victims of sexual assault often refer late to health professionals, thus it becomes impossible to document recent traumatic lesions, if any (lacerations, ecchymoses in the genital area and/or signs of physical violence perpetrated by the aggressor), or collect crucial evidence for additional investigations. Sometimes, negative or non-specific physical examination findings are ascribable to the lack of experience of health operators (traumatic lesions erroneously classified as inflammatory lesions, anatomical anomalies).[24, 30] Sometimes, on the opposite way, misinterpretations lead to inevitable judicial repercussions.[31] The medical investigation carried out to substantiate violence suffered is further complicated when physical examination results are totally negative; in those cases, the testimony of minor plays a significant role, as it is the only evidence of the existence of crime. The definition of abuse is quite broad and not necessarily associated with measurable, documentable "violence", which explains why the investigation shifts its focus on the psychological-behavioral aspects. Although the testimony of the minor may constitute a useful source for chronological recounting of facts, it certainly cannot represent the only element supporting medical investigation or the outcome of legal proceedings; through cross examinations and investigations, facts need to be substantiated by other evidence or findings. There are many obstacles in the evaluation of an allegation of sexual abuse against a minor. Emotions and personal preconceptions may affect the investigation when evidence and unbiased elements are few. Possible evaluation (misinterpretation) errors or false interpretations can depend on factors related to alleged victim (age, nature of the relationship with the parents),[26] evaluation of the testimony's reliability and credibility;[32] on the ambiguous nature of psycho-behavioral indicators and on experts' mistakes during the interview process that might contaminate the minor's freedom and spontaneous recounting,[33, 34] or the subsequent interpretation of the available data (erroneous discrimination between truth, lies and false beliefs.[35]

The importance of professional assessment of the minor and of his/her statements is supported by all main international and national scientific associations of this field, and it implies methodological accuracy and scientific validity, not only to assure greater adequacy and effectiveness of interventions in alleged or actual abuse cases (scientific evidence-based methodology), but also because of the need to prevent many errors potentially capable of heavily affecting lives of various subjects involved in such legal proceedings despite of the "evidence", although the certainty or not of the abuse itself.[36-38] This is a old dilemma faced by those responsible for evaluating testimony of a minor. In this regard, in Italy in 1996 was drafted the Noto Charter Document providing for the "guidelines to examine a minor in the event of sexual abuse" by an authoritative group of psychologists, criminologists, and jurists. The Noto Charter was reviewed in July 2002;[20] it includes specific indications aiming at granting the reliability of the results of technical investigations and the authenticity of statements of alleged victims, through the intervention of professionals adequately

and specifically trained (use of methodologies and criteria acknowledged as reliable by the scientific community); it specifies the models to be adopted to allow for critical evaluation of results, granting the minor the best psychological support in compliance with the constitutional principles of a fair trial.[39] The most relevant point of this document worth mentioning is that "the psychological assessment cannot focus on the ascertainment of the facts at the core of the proceedings". This means that the information collected through the statements of the minor must help the Judge understand if the minor is suitable or not to stand trial, but the expert's responsibility is not to ascertain the reliability of the minor's statements, which falls exclusively in the competence of the Judge and cannot be delegated to the expert (this aspect was recently underlined by the Judgment of the Italian Supreme Court n. 9811/2007). The Noto Charter also provides for a series of measures enforced to safeguard the minor; above all, if the Judge rules in favor of a deposition, it provides for it to take place in the most suitable settings so as to put the minor at ease and safeguard his/her emotional susceptibility. In detail, according to the Noto Charter, an interview with a minor requires: 1) interviewing with the minor at a time, moment and place so as to safeguard, as much as possible, his/her serenity; 2) informing the minor of his/her rights and role with regard to the ongoing procedure; 3) allowing the minor to express his/her opinions, needs and concerns; 4) avoiding questions and behaviors prejudicial to the spontaneity, honesty and authenticity of answers, without ascribing responsibilities to the minor in relation to any procedural development. If possible, video or at least sound recording is recommended with regard to the acquisition of the minor's statements and behaviors; in order to be used in a trial, this material must be made available to the parties involved and to the judge. Always in the safeguard of the rights and best interest of the minor, item 11 of the Document provides for the minor's psychological assistance to be entrusted to "a specialized operator who will maintain the assignment at every condition or degree of the prosecution. Such person must be someone other than the expert, and cannot interfere with investigation activities and evidence collection". In conclusion, management of alleged sexual assault victims is a complex issue that requires contribution of interdisciplinary skills and interactions among various specialized perspectives (gynecology, pediatrics, etc.), in order to deal psychological impact secondary to trauma, and strictly physical consequences of the violence itself, so as to reach, in initial and crucial phase of evidence acquisition, a final exclusion or admission of the suffered violence.[40] Given the drama of the phenomenon of sexual assault/abuse against women [41] and minors,[42] and in order to assure social safeguard and support of "victims", in 2004 the European Commission for Justice, Internal Affairs and Social Politics promoted the Daphne II program "Preventing and fighting violence against children, youth and women, and safeguarding the victims and groups at risk", whose general objective was indeed to provide citizens with a high level of protection from gender violence, and most of all to prevent and fight all forms of violence through the constitution of multidisciplinary networks for the management of the victims of violence. The "V.eR.S.O.: Network integration" project was incorporated in such context: activated since October 2005 at the Policlinico University Hospital of Palermo, it is a specialized service for the management of victims of sexual assault/abuse.[43] Considered the immigration of people from north Africa and of the Middle Orient in Sicily, the workgroup has developed specific guidelines in different languages (Italian, French, English and Arabic) for management of victims, an informed consent model for women and adolescents, and an integrated medical record. The adoption of standardized procedures, shared by the various health professionals involved (gynecologists, psychiatrists, psychologists, surgeons, forensic doctors) has definitely simplified and standardized the management of abuse victims in our experience (Table III), accordingly with similar care experiences reported by specialized forensic literature. Our preliminary reports seem to encourage these efforts and point to further interdisciplinary integrated approach

TABLE III.—*The sequence of procedures and medical care in legal cases of sexual abuse.*

Reception and stabilization of all life-threatening conditions
Accurate case history
Careful physical examination, general and local
Running multiple sampling (vaginal, anal, oral, BLOOD)
Repertoire of clothing
Determination of sexually transmitted diseases
Certification and/or reporting to judicial authorities
Decision of admission or discharge
Schedule follow-up and notification to legal/health authorities

in favour of victims [44] also for the public debate inherent how politicians and leaders of multidisciplinary public centres should prioritise endeavours.

Partner notification and prosecution

Screening and detecting sexually transmitted infections (STIs) is a form of secondary prevention that interrupts further transmission as well as progression of the infection and its *sequelae*. Unfortunately, primary prevention, by means of education and safe sex practices, has not been enough to significantly curb the prevalence and high cost of STIs. People at high risk of contracting STIs are young adults between the ages of 18 and 28. It is also important to bear in mind that STIs rank among the top five risks of international travelers, along with diarrhea, hepatitis, and motor vehicle accidents.[45]

The brunt of the STI burden, both in risk and consequence, falls on women. When exposed to STIs, women are more likely to become infected and are much more likely to be asymptomatic. STIs can cause pelvic inflammatory disease, with subsequent risks of chronic pain syndromes, ectopic pregnancy, and infertility. Unfortunately there is very little evidence that treatment will reverse the *sequelae*.

It is estimated that more than 19 million new cases of STIs are reported each year and more than 65 million people are infected with incurable viral STIs.[46, 47] Approximately two thirds of cases occur in adolescents and young adults. The most common STIs are HPV and HSV infections. Of the top 10 nationally notifiable infectious diseases in the United States in 2008, 4 were STIs.[48] This does not include HPV and HSV infections because they are not reportable diseases. This background agree with legal duties for physicians in accord with law in force in Italy, because are not obligations to notify these types of infections.[49]

The prevalence of infection with HPV in the United States is approximately 20 million, and the incidence is 6.2 million.[50, 51] At least 50% of sexually active men and women acquire genital HPV infection at some point in their lives. By age 50, at least 80% of women will have acquired genital HPV infection.[52] In 2009, only 28 cases of chancroid were reported, down from 67 cases in 2002.[53] Interestingly, 71% were reported from the three states of Tennessee, Wisconsin, and Texas. Overall, the rate of reported cases has declined 99% since 1987. *Haemophilus ducreyi* is difficult to culture, and therefore the infection could be underdiagnosed. Improved diagnostic testing by means of polymerase chain reaction (PCR) testing is now commercially available and may increase diagnostic capability. The incidence of infection with chlamydia has continued to rise since it became a notifiable disease in 1995. In 2009, over 1.2 million cases were reported to the CDC.[54] The reported number of cases of chlamydial infection was about four times greater than the reported cases of gonorrhea. It is probable that this incidence is at least in part secondary to improved diagnostic ability and growth and implementation of routine screening programs in women. Now that highly sensitive nucleic acid amplification tests (NAATs) for urine are available, the diagnosis of chlamydial infection is increasing in both symptomatic and asymptomatic men. From 2005 to 2009, the rate of chlamydial infection among men increased 37.6% compared with 20.3% among women. The rate of gonorrhea was fairly stable from 1996-2006 at approximately 115 cases per 100,000 population, and then decreased from 2006-2009 to a rate of approximately 99.1 per 100,000 population in 2009.[55] The incidence rate is highest in persons aged 15 to 24 and is particularly high for non-Hispanic blacks (20 times higher than for non-Hispanic whites). Rates are particularly higher for non-Hispanic blacks (which is 20 times the rate for non-Hispanic whites) and for men who have sex with men.[53, 56] The rate of syphilis increased yearly during 2001-2009, primarily among men (3.0 cases per 100,000 population in 2001 compared to 7.8 cases in 2009). The rate among women increased from 0.8 cases in 2004 to 1.4 cases in 2009.[53] It has been proposed that this is secondary to outbreaks among males having sex with males in urban areas with high rates of coinfection with HIV and high-risk sexual behaviour.[53] Rates continue to be particularly high in southern states and among African-Americans. There is no evidence that screening high-risk individuals, including those with HIV or other STIs, or the general population reduces morbidity or mortality from syphilis. However, it has been shown that screening pregnant women reduces the prevalence of congenital syphilis.[57] The acquired immunodeficiency syndrome (AIDS) is the most severe manifestation of infection with human immunodeficiency virus (HIV). AIDS is defined by development of serious opportunistic infections, neoplasms, or other life-threatening

conditions resulting from progressive immunosuppression caused by HIV infection.[58] After AIDS was described in 1981 the number of cases increased rapidly.[59, 60] An estimated 30.6 million to 36.1 million people worldwide are living with HIV infection. More than 20 million have died of AIDS.[61] In 2007 alone, 2.5 million people were infected and 2.1 million died of AIDS. Of all people 15 to 49 years of age worldwide, 1.1% are now infected with HIV.[59] In less than 15 years HIV infection reached pandemic proportions, with AIDS reported in over 190 countries.[62] The impact of HIV infection is much different in the developing world than in the industrialized world. At one time AIDS was the leading cause of death among 25- to 44-year-old men in Western European and North American cities and was the third most common cause of death among young women.[59, 63] With effective antiretroviral therapy, deaths attributed to AIDS are declining rapidly. Worldwide, AIDS-related deaths declined from 2.9 million to 2.1 million from 2004 to 2007.[62] In contrast, in many African cities AIDS represents the leading cause of death and of years of potential lost in men and the second most important cause of death in women. Life expectancy in the most affected sub-Saharan countries was reduced as much as 15 years by the year 2000, compared with projections of life expectancy in those not infected with HIV. The three main modes of HIV transmission have changed little: unprotected intercourse, contact with blood, and transmission from mother to child. Direct blood contact, such as sharing drug-injection equipment, results in the most efficient transmission. Globally, "unprotected" sexual intercourse between men and women is the predominant mode of HIV transmission.[62] The burden of HIV infection is greatest in the developing world.[59] Two thirds of HIV-infected persons are in Africa, where the epidemic exploded during the 1990s, and one fifth are in Asia, where the epidemic has been growing steadily.[59] Eight of nine countries with the most HIV-infected people are in sub-Saharan Africa. Estimates for India range from 2.2 to 7.6 million, and for China they are from 430,000 to 1.5 million. In comparison, an estimated 1.2 million people are living with HIV in the United States, 860,000 in the Russian Federation, and 680,000 in Brazil. Statistics highlight global disparities in availability of therapy. Overall, 1.6 million people died of AIDS in sub-Saharan Africa in 2007. By comparison, in Western and Central Europe, only 12,000 people died of AIDS in 2007.[61-64] The prevalence of HIV has continued to rise in the United States with estimates as high as 1.2 million Americans living with HIV, nearly 75% of whom are adult men.[59, 63, 65] Early in the epidemic most infections occurred among men who have sex with men, but the incidence in this group levelled off by 1985-1987. However, HIV prevalence levels of 7% to 9% are still found among young homosexual and bisexual men in cities such as San Francisco and New York. The largest decline in the proportion of AIDS cases in the United States has occurred among homosexual and bisexual men, whereas cases acquired by heterosexual transmission have increased. Despite antiretroviral therapy, blood screening, and treatment of sexually transmitted infections the number of infections has remained at a plateau of 40000 new HIV infections per year in the United States over the past decade.[66] The HIV prevalence among injecting drug users has been increasing steadily, but with large regional differences.[59] Since the late 1980s on the US west coast about 90% of people with AIDS are men who have sex with men, whereas on the north-eastern coast most new HIV infections occurred among injecting drug users. Young adults belonging to ethnic minorities (including men who have sex with men) are at considerably greater risk of infection than they were five years ago. For example, African-Americans make up only 12% of the US population but were affected in 47% of AIDS cases reported in 2000. HIV epidemics may occur suddenly, reflecting circumstances that are not fully understood.[59] For example, HIV seroprevalence among injecting drug users in Bangkok increased from zero in 1985-1986 to 16% in 1988 and 40% to 60% in 1992. Early epidemiologic studies identified major risk factors, especially unprotected sexual intercourse with multiple partners or an infected partner, presence of STIs, or a history of STIs.[67-69] More recent studies have highlighted sex differences in HIV transmission. Worldwide, for many monogamous women the main risk factor may be the sexual behavior of their steady partner.[62, 70, 71] Among the STIs and STDs, AIDS in the last 20 years showed high and progressive diffusion. People living with HIV worldwide rose from around 8 million in 1990 to 34 million by the end of 2010. The estimated number of children under 15 years living with HIV was 3.4 million [3-3..8 million]. In the same year the number of deaths due to AIDS was about 1.6 million. Every day, about 2.2. millions of persons become in-

fected with HIV. Nowadays, annual number of new HIV infections has steadily declined and due to the significant increase in people receiving antiretroviral therapy, to the improvement of adequate access to HIV prevention and treatment services. To diagnose and monitor HIV infection, it must be remembered that HIV was first isolated in 1983, and the first diagnostic tests were marketed in 1985. Tests for diagnosis and monitoring of HIV infection have improved constantly.[72, 73] Tests for diagnosis and monitoring HIV infection can be considered in three categories: diagnostic tests, viral load, and resistance assays. Assays have been developed to detect HIV antibodies in serum, whole blood, saliva, and urine.[72] Most laboratories screen for anti-HIV-1 and anti-HIV-2 antibodies using an enzyme-linked immunosorbent assay (ELISA) based on antigens from viral lysates, recombinant or synthetic. Current third-generation HIV ELISAs have sensitivity and specificity approaching 100%. In contrast to earlier tests that only detected IgG antibodies these tests detect all classes of anti-HIV antibodies, substantially shortening the time to diagnosis after acute infection. A variety of rapid tests and "home tests" have also been developed. Despite sensitivity of more than 99%, a reactive HIV ELISA has a relatively low positive predictive value in low-risk populations. Thus the current testing algorithm includes a confirmatory test to exclude false-positive results. The Western blot is most widely used for confirmation. Some laboratories prefer immunoblotting for confirmation because immunoblots are simpler to standardize and are more sensitive in cases of recent seroconversion.[72] For what concern clinical application, after acute infection, HIV RNA can be detected from day 12. HIV RNA assays have a sensitivity of 100% in diagnosing acute infection but at the cost of lowered specificity (97%).[72] The first antibodies can generally be detected on day 21. However, development of a positive HIV antibody test can vary according to the patient and infecting strain. Beyond week six after infection antibodies are detectable in almost all patients.[72] Because reactivity by the Western blot test lags seroconversion by ELISA, a positive ELISA in a patient with a negative or evolving Western blot assay can provide evidence of recent infection. Testing is a two-stage process. Samples positive by an initial screening assay are retested to exclude clerical or laboratory error, and then a confirmatory assay is performed on repeatedly reactive sera to verify that the antibodies are directed against HIV. Confirmation of a reactive ELISA by a positive Western blot establishes the diagnosis of HIV infection. A negative Western blot test suggests a false-positive ELISA or an acute infection. About legal concerns of HIV testing, be considered following types of HIV testing as recommended by WHO: voluntary testing with pre- and post-test counseling; diagnostic HIV testing whenever a person shows symptoms that are consistent with HIV-related disease or AIDS; routine offer of HIV testing by health care professionals for patients assessed for STIs, for pregnant women, and for asymptomatic people in settings where HIV is prevalent and antiretroviral treatment is available; and mandatory HIV screening of all blood that is destined for transfusion or the manufacture of blood products.

HIV testing is typically administered for individual diagnostic or clinical purposes; when it is undertaken for broader public health purposes, it is frequently referred to as screening. Screening and testing both deal with sensitive personal information and raise issues of consent, privacy, and confidentiality. It is obvious that health professionals who are aware of a case of HIV infection, are first of all are required to provide care by assuring all necessary measures to protect the confidentiality of their patient. The decision to respect the patient's right to privacy possibly conflicts with the duty to protect health of partner/partners. It is clear that patients have a right of expectation that medical practitioners will not communicate personal information acquired in the course of care, unless the patient gives his/her own permission. Privacy refers to the right of individuals to limit access by others to some aspects of their person, including health condition and sexual behaviors. Privacy claims are rooted in the ethical principles of autonomy and dignity established by Italian and European Physician's ethical code, and in Privacy Legal Code.[74] In the point of view of physicians and health professional privacy assurance and confidentiality protection usually restrict the disclosure of HIV information and may provide for penalties in case of disclosing HIV information without authorization. Further obligations for physicians are related to the warn duty of their patient concerning legal consequences on STDs transmission to the sexual partner, in accordance with legal concerns of the Law 25 July 1956, n. 837. It is notable that in case of evidence of omitted precautionary measures to prevent STDs infection by the patient, personal injured

or death caused could be considered voluntary. To sum up, the duty of confidentiality exists if: 1) information has the necessary quality of confidence; 2) it was given in a situation importing an obligation of confidence; and 3) there was unauthorised use of that information. In legal terms, the duty to maintain secrecy is an absolute obligation, whose violation implies the crime of disclosure of professional secrecy (article 622 of the Italian Penal Code) and revelation of professional secrecy (article 326 of the Italian Penal Code),[74] within different qualifications of health professional in Penal Code.

However, the duty of confidentiality is not absolute, but subjected to limitations. Three conditions may justify disclosure of confidential information that may be contrary to the express wishes of the patient: rules requiring medical practitioners to disclose information concerning a patient, or statutes that provide rights for some people to have access to confidential information. A common example is the duty of medical practitioner to notify the officer of the local authority whenever aware or suspects that a patient is suffering from one of the diseases in a list of notifiable disease (2° List of Notifiable infectious diseases: Blennorrhagia, venereal ulcer, syphilis and lymphogranulomatosis inguinalis).[49]

The second exception to the duty of confidentiality arises where there is an overriding public duty to disclose. Medical practitioners have a duty to disclose information to the public if failure will expose social community to a serious risk of death or harm. http://www.paclii.org/journals/fJSPL/vol08no1/4.shtml - fn22 For example, confidential information may be disclosed when is a threat that the infected person may make attempts to infect other members of the social community. Through disclosure of the information, members of community can be protected from the risk of death or harm, or the occurrence of any serious crime. The third situation in which disclosure of information will not interrupt duty of confidentiality is legal obligation by Court order.

Additional ethical and legal issues concerning partner notification.

Many American and European countries authorize physicians or counselors to conduct partner notification. Partner notification usually is voluntary, but occasionally can be done without the consent of the index patient. A physician's duty to disclose a patient's HIV status to the patient's partners who may be at risk of infection emanates from the legal concept of "duty to warn". In order to warn the partners of an HIV-infected patient, the physician may be authorized under law to obtain the partners' names from the patient, confidentially tell the partners they may be infected, and provide the partners with HIV counseling and access to testing and other services when available. Physicians and other providers must conduct partner notification in a confidential manner to avoid violations of their patient's right to privacy and reduce possible stigma and discrimination. Partner notification without patient's consent at the moment is not allowed in our country. New guidelines from the Centers for Disease Control and Prevention recommend that opt-out screening for human immunodeficiency virus (HIV) without written patient consent be part of routine clinical care and imply that state HIV-associated laws in conflict with this approach should be amended. However, HIV testing and treatment issues are governed by a wide range of laws, common law principles, constitutional provisions, and various codes of ethics. However, at the moment, patient testing protocols should still satisfy legal definition of informed consent, to reduce risk of liability for providers (*i.e.*, health care professionals and facilities).[75]

In Italy there is a specific law (Law n. 135/90) for protecting seropositive people's rights, confidentiality and anonymity. Specifically, this law obliges to communicate the test's result only to the person concerned. Testing, that may be carried out only with patients' consensus to reduce risk of liability for providers, are anonymous and free of charge and may be obtained at hospitals and public health centers where pre- and post-test counselling is also provided.

HIV testing, also in minor patients

In most European Country (*e.g.*, Germany, Austria, France, Belgium) this test is volunteer; in Italy the implementation of the test is today governed by the Law 135/1990.

Art. 5 of Law 135/90, states that "No one shall be subjected without his consent, for analysis aimed to determine whether HIV infection, unless in the case of clinical need in his own interest […] The communication of the results of diagnostic tests [...] can

be given only to the person to whom such tests are reported".

This article governs two distinct cases: it is needed the written informed consent of the person performing the examination; it is possible regardless of consent "for reasons of clinical need and in his interest", but nothing is said about the consent of the child.

About the patient's consent, the deontological Italian code (CD) of physicians (artt. 33, 35), updated on December 2006, establishes that all medical treatments are always volunteer. Art. 33 CD states that "the physician should provide to the patient the most appropriate information for diagnosis, prognosis, the prospects and possible alternative diagnostic-therapeutic and foreseeable consequences of the choices. The physician must assess his capacity of understanding, in order to promote maximum participation in decision-making and adherence to the proposed diagnostic-therapeutic. […]".

Art. 35 CD states that "the physician should not perform diagnostic and / or therapeutic activities without the explicit and informed consent of the patient".

The Oviedo Convention for the Protection of Human Rights and dignity of the human being (Convention on Human Rights and Biomedicine - 4 April 1997) has been ratified in Italy with the act 28 march 2001 n. 145. This convention (art. 5) states that "a medical intervention cannot be made only after informed consent of the patient. Adequate information must be given about the purpose and nature of the intervention and its consequences and its risks […]".

In conclusion, the quality and not quantity of information it is always a priority; also the informed consent is always obligatory.

The issues about the consent for the test for HIV in "minor" person (in our system, the minor person is less than 18 years) in unclear. Some reflections should be made in the case of the minor's consent: in this contest may child have the right to take choices alone against parents? When and how does a minor show maturity and the ability to make a meaningful, well informed decision regarding treatment? May all minors exercise this right? At what age does a child or adolescent have the cognitive ability and the emotional maturity to fully understand the consequences of choosing or refusing medical treatment?

These questions made numerous ethical and legal dilemmas in legal doctrine. However, physicians who may be in the midst of the conflict must be aware of the rights and interests of all parties involved.

As established by article 5 of Law 135/90, the consent to establish HIV testing the connection with the children, does not arise in a different way than other health care.

With exception of cases of medical urgency there is the need of the consent given by both parents, or by person legally deputy. This assumption does not change even if the child is entrusted to one parent, that are found separated or divorced. Interventions for prevention and therapy, developed in recent years have permitted the raising of children infected with HIV at birth, until you reach the teens.

At the same time, information campaigns on strategy prevention of STIs occurred over time had created new awareness of this problem among young people. It was then examined the problem of children who asked for the opportunity to be tested, without parent's information: psycho-physical integrity of human person may not have limit, as shown by art. 5 of the Civil Code, paragraph 1; in addition (paragraph2), "acts are prohibited to dispose of their bodies when they could cause a permanent reduction of the physical, or are otherwise contrary to law, public order or morality". That rule of the Civil Code is also reflected in the criminal penal code, as is punished the murder of consent (art. 579 Italian Penal Code). Further relevant considerations concern the so called "state of necessity", under article 54 of penal code: by hypothesizing this rule in medical assessment, it consequently authorizes healthcare to care in favor of health and/or physical integrity of the person, without his consent, in the presence of true danger of serious harm to the person, provided the fact that risk of human action is proportionate to the danger.

In the case of minors the CD (art. 37 CD), states that the consent must be expressed always by the legal representative; moreover, the physician (art. 38 CD) must consider the will of the child progressively in relation to his age, his ability to understand and his maturity.

In the European Union, the Oviedo Convention states that (art. 6) "in accordance with the act, when a minor does not have the capacity to consent to an intervention, the consent cannot be done without the permission of his legal representative, authority designated by act. The opinion of a child is considered as an increasingly important determinant, depending on the child's age and level of maturity". This act

does not exclude the consent of the child, but it is not explicit. This convention only describes conditions for what is certain that child cannot give its consent.

About consent to HIV antibody testing of children or adolescents, accordingly with the large debate in literature,[76] according to our opinion the minor should have the right to consent specially in cases inherent personal sphere and when minor is older than 14 years.[77, 78] Determination of a minor's competence for medical decision making should include evidence that the minor has the ability to understand the purpose of treatments, risks, both long- and short-term consequences, benefits, and alternatives to treatments.[79, 80] Physicians must inform the minor about testing risk, result and sexual education; he may decide to inform parents if realises that the child is not able to take future decisions in the event of a positive HIV antibody test.[81]

Mature minor doctrine has also widely emerged in the United States.[82] In the past, minors were not considered legally capable of making medical decisions and were viewed as incompetent because of their age. The authority to consent or refuse treatment for a minor remained with a parent or guardian. This parental authority was derived from the constitutional right to privacy regarding family matters, common law rule, and a general presumption that parents or guardians will act in the best interest of their incompetent child. However, over years, Courts have gradually recognized that children younger than 18 years who show maturity and competence deserve a voice in determining their course of medical treatment.[82]

The concept of "mature minor" is based on common law, or created as the result of public cases and not governed by any written statutes or codes. A minor who is deemed able to understand short- and long-term consequences is considered to be "mature" and thus able to provide informed consent/refusal for medical treatment. This "maturity" authorizes the minor to make decisions regarding his or her medical treatment.[83] It does not, however, provide *carte blanche* permission for minors to make decisions regarding medical treatment without parental consent. Circumstances in which the mature minor doctrine permits minors to consent to treatment are the following:

1. the minor is an older adolescent (14 years or older);
2. the minor is capable of giving informed consent;
3. the treatment will benefit the minor;
4. the treatment does not present a great risk to the minor;
5. the treatment is within established medical protocols.

Although not every state has a mature minor doctrine, Courts have recognized the need to look with scrutiny at certain case laws involving the ability of mature adolescents to make medical decisions. This scrutiny is essential to balance the rights and interests of all parties involved. Although the mature minor doctrine is not recognized by the US Supreme Court or all states, Courts in Illinois, Pennsylvania, and Massachusetts have recognized this doctrine and used it to determine the maturity of a minor in medical decision making. Other states recognize the doctrine but may choose instead to place greater emphasis on parental decision making. However, recognition of the mature minor concept is an emerging trend that promotes the autonomy of the minor and places value on their input.[82]

Cases of exception to parental consent are:

— emergency exception: medical emergencies, when delay in care would increase the risk to the minor's life or health;

— emancipated minor*:* minors who are emancipated may make treatment decisions for themselves. These often include minors who have taken on other adult responsibilities (*e.g*., living independently from their parents, are married or have been pregnant).

Mature minor

Minors aged 14 years who are mature (*i.e*., capable of engaging in the process of informed consent) may be allowed to consent for relatively low risk interventions that are clearly beneficial. One must consider age, maturity, nature of illness and intervention, and risks.

Minor treatment statutes

State-based laws that allow minors to obtain medical care without parental consent for conditions such as pregnancy, sexually transmitted diseases, psychiatric conditions, and drug and alcohol abuse.

Minor treatment statutes are state laws that allow minors to seek care for specific conditions without parental consent. These laws were issued to allow minors to looking for medical care in conditions that they are at risk for, and they might otherwise be reluc-

tant to. In a general provision, without parental consent minors may receive treatment for prenatal care, contraception, STDs evaluation and treatment (including HIV testing), drug and alcohol dependency, mental health services. In the USA details of these laws vary by state. In Pennsylvania**,** for example, statutes allow minors who have been pregnant, whether there was a live birth or not, to consent for medical care on their own behalf. Pennsylvania law also allows minors to consent to testing and treatment for any reportable disease, not just STDs. This difficulty of determining the age where a child is qualified to be a medical decision maker can be seen in the variability in laws between jurisdictions. Most states use the age of 18 as the point where a patient may make his or her own medical decisions. Some states (*e.g.*, Kansas and Rhode Island) legislate 16 as the legal age for medical consent.

In the European Union, some significant differences are found in Spanish legislation about the consent of minors.[78] Art. 9 (paragraph 3) of Spanish Act 41/2002 establishes the need for consensus of the legal representative when the child is not emotionally and intellectually capable of understanding the scope or nature of medical treatment. This act refers not only to intellectual, but also emotional conditions and these last are very important factor in the case of HIV testing.

The Spanish legislator also distinguishes minors of 12 years whose consent of the legal representative is required, and minor greater than 16 years or emancipated minor, whose not required. In the case of risk, physicians must always informed the legal representative. Children between 12 and 14 years have not the right to choose for themselves. In Italy, the guidelines for the management of informed consent published in April 2006 by Regional Agency for Health Services (Italian Piemonte Region) are a useful tool for physicians.

This document explains medical treatments in which is not required to obtain the

parental consent or legal representative**.** In particular, for some health measures shall not be obliged to acquire the consent of parents or guardian and the physician at the request of a minor may proceed regardless of health care consent, or dissent from their parents or legal guardian: 1) for diagnostic tests, including laboratory, and any case of STDs (Article 4 of Law July 25, 1956, No. 837 on the reform of the legislation for the prevention of venereal diseases and Arts. 9 and 14 of the implementing regulation issued by presidential decree October 27, 1962, No 2056); 2) means necessary to attain freely chosen in order to responsible reproduction (Article 2 of Law May 27, 1978, No. 194 on the termination of pregnancy), and in particular, from 14 years of age, for visits, including gynecological, since non-therapeutic intervention but referred to the sexual sphere; 3) for termination of pregnancy when the judge authorized the offender to decide whether the consent of the parents or guardian, in the presence of serious grounds to prevent their consultation or inadvisable to proceed against or induce their views (Article law 12 of May 27, 1978, No 194); 4) for diagnostic and therapeutic interventions and rehabilitation to ensure that minors do not personal use of therapeutic drugs, the minor patient may maintain anonymous access to drug services in person, get treatments and allow the control of urine or hair (Article 120 of October 9, 1990 Presidential Decree No. 309).

Conclusions

Legal issues on STDs for practitioners are generally related to legal duties on notice health public authorities concerning notifiable infectious diseases (List II of Law on infectious diseases); special care should be given to maintaining professional secrecy, even against the patient's partner, as the revelation of the disease is allowed (anonymously), unless required by law. Physician, however, must warn the patient that, in case of transmission of STDs, the charge will be of voluntary personal injury. The identification, diagnosis, management and treatment of the victims who have suffered sexual abuse are complex issues involving medical, psychological, social, and juridical aspects that require a multidisciplinary approach. It is well-known that it is rarely possible to make a diagnosis of abuse only on medical features, because victims of ascertained sexual abuse show non-specific, or even normal, genital and/or anal evidence. In this context, testing for sexually transmitted infections (STIs) in children presents a number of problems for the practitioner that are not usually faced when testing adults for the same infections. The identification of an STI in child can have, in addition to medical implications, serious legal implications. Among the STDs, further dilemmas are related to HIV infection testing, with special caution on minor patients. The HIV antibody testing is generally used to reveal the infection.

In most European countries the test is voluntary; in Italy, implementation of the test is now regulated by the Law 135/1990. Art. 5 of the law states that the test is voluntary while informed consent is obligatory. However, nothing is stated concerning the child's consent. By contrast, other Italian laws (*e.g.*, Law 194/78, Law 194/1996 and DPR 309/1990) establish that the physician should only accept the wishes of minors after appraising the maturity of the child and his/her age. In a general view of legal issues related to care of STDs, it is crucial to recognize condition of medical necessity and to bear in mind that the so called medical necessity, is something different from the configured state of need within art. 54 of Penal Code.

Riassunto

Aspetti legali delle malattie sessualmente trasmesse: abusi, notifiche ai partner e procedimenti giudiziari

Le malattie sessualmente trasmissibili (MST), con particolare enfasi alla infezione da HIV, coinvolgono questioni legali ed etiche in materia di consenso informato per la diagnosi, nel rispetto del segreto professionale per quanto riguarda il partner(s) e della comunità. Problemi legali di particolare difficoltà sono correlati al caso delle MST che coinvolgono minori; infine, i medici devono essere in grado di riconoscere lo stato della (cosiddetta) necessità medica. La conoscenza e la consapevolezza di tali obblighi connessi al trattamento delle MST è fondamentale nella pratica medica, ma è importante anche per consentire un'adeguata protezione delle vittime di sospetto abuso sessuale che giungano in osservazione dei servizi sanitari. Per quanto riguarda questo aspetto va sottolineato che la violenza contro le donne e i minori è un problema mondiale che non è ancora stato sufficientemente riconosciuto. La legislazione italiana (Legge n. 96/1996) contro l'abuso sessuale ha finalmente fornito elementi di rilievo contro i crimini sessuali. Nel caso in cui debbano essere valutati casi di abuso sessuale, potrebbero sorgere ostacoli proprio per mancanza di un approccio interdisciplinare, mentre deve essere assicurata la raccolta di campioni biologici, anche in relazione alla diagnosi di MST e agli obblighi di comunicazione alle autorità legali (referto e denunicia/rapporto). I preconcetti personali possono interferire con le indagini, specialmente nel caso di minori in cui siano poco rilevanti le prove biologiche. A questo proposito, le regole del documento conosciuto come "Carta di Noto", redatto nel 1996 e aggiornato nel luglio del 2002, includono alcune indicazioni specifiche volte a concedere l'affidabilità dei risultati delle indagini tecniche e l'autenticità delle dichiarazioni delle presunte vittime.

PAROLE CHIAVE: Età pediatrica - Abusi sessuali - Medicina forense - Aspetti legali - Malattie sessualmente trasmissibili.

References

1. WHO, Summary report Multicountry Study on Women's Health and Domestic Violence against Women, 2005; Department of Health and Human Services. Child Maltreatment, 2005.
2. Grossin C, Sibille I, Lorin GG, Banasr A, Brion F, Durigon M. Analysis of 418 cases of sexual assault. Forensic Sci Int 2003;131:125-30.
3. Saint- Martin P, Bouyssy M, O'Byrne P. Analysis of 756 cases of sexual assault in Tours (France): medico legal findings and judicial outcomes. Med Sci Law 2007;47:315-24.
4. Ingemann-Hansen O, Sabroe S, Brink O, Knudsen Mpsych M, Vesterbye Charles A. Characteristics of victims and assaults of sexual violence – Improving inquiries and prevention. J Forensic Leg Med 2009;16:182-8.
5. Riggs N, Houry D, Long G, Markovchick V, Feldhaus KM. Analysis of 1076 cases of sexual assault. Ann Emerg Med 2000;35:358-62.
6. Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R. World report on violence and health. Geneva: WHO; 2002.
7. Summary report Multi-country Study on Women's Health and Domestic Violence against Women. Geneva: WHO; 2005.
8. McCauley J, Kern DE, Kolodner K, Dill L, Schroeder AF, DeChant HK *et al.* Clinical characteristics of women with history of childhood abuse: unhealed wounds. JAMA 1997;277:1362-8.
9. Lacey HB. Sexually transmitted diseases and rape: the experience of a sexual assault centre. I J STD AIDS 1990;1:405-9.
10. Murphy CC, Schei B, Myhr TL, Du MJ. Abuse: a risk factor for low birth weight? A systematic review and meta-analysis. Canadian Medical Association Journal 2001;164:1567-72.
11. Golding JM, Wilsnack SC, Learman LA. Prevalence of sexual assault history among women with common gynaecologic symptoms. Am J Obstet Gynecol 1998;179:1013-9.
12. Walling MK, O'Hara MW, Reiter R C, Milburn AK, Lilly G, Vincent SD. Abuse history and chronic pain in women: A multivariate analysis of abuse and psychological morbidity. Obstet Gynecol 1994;84:200-6.
13. Wise LA, Zierier S, Krieger N, Harlow BL. Adult onset of major depressive disorder in relation to early life violent victimization: A case-control study. Lancet 2001;358:881-7.
14. Kendler KS, Bulik C M, Silberg J, Hettema J M, Myers J, Prescott CA. Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and cotwin control analysis. Archives of General Psychiatry 2000;57:953-9.
15. MacMillan HL, Fleming JE, Streiner DL, Lin E, Boyle MH, Jamieson E *et al*. Childhood abuse and lifetime. Am J Psychiatry 2001;158:1878-83
16. Taylor RR, Janson LA. Chronic fatigue, abuse-related traumatization, and psychiatric disorders in a community based sample. Soc Sci Med 2002;55:247-56.
17. Sprinter KM, Sheridan J, Kuo D, Carnes M. Long-term physical and mental health consequences of childhood physical abuse: Results from a large population-based sample of men and women. Child Abuse Neglect 2007;31:517-30.
18. Goodwin RD, Hoven CW, Murison R, Hotopf M. Association between childhood physical abuse and gastrointestinal disorders and migraine in adulthood. Am J Public Health 2003;93:1065-67.
19. Marchetti D, Di Tillio A. La violenza sessuale: aspetti giuridici e medico legali. Milano: Giuffrè editore; 2000.
20. Argo A, Zagra M. Delitto di violenza sessuale. In: Zagra M, Argo A, Madea B, Procaccianti P, editors. Medicina legale orientata per problemi. Milano: Elsevier; 2011. p. 68-72.
21. Palmer CM, McNulty AM, D'Este C, Donovan B. Genital injuries in women reporting sexual assault. Sex Health 2004;1:55-9.
22. Sommers MS. Defining patterns of genital injury from sexual assault: a review. Trauma Violence Abuse 2007;8:270-80.
23. Adams JA, Harper K, Knudson S. A proposed system for classifica-

tion of anogential findings in children with suspect sexual abuse. Adolesc Pediatr Gynecol 1992;5:73-5.
24. Adams JA, Botash AS, Kellogg N. Difference in hymenal morphology between adolescent girls with and without a history of consensual sexual intercourse. Arch Pediatr Adolesc Med 2004;158:280-5.
25. Adams JA. Medical evaluation of suspected child sexual abuse. J Pediatr Adolesc Gynecol 2004;17:191-7.
26. American Academy Child Adolescent Psychiatry (AACAP). Practise parameters for the forensic evaluation of child and adolescent sexuale abuse. J Am Acad Child Adolesc Psychiatry 1997**;**36:423-42.
27. Hammerschlag MR. Sexual assault and abuse of children. Clin Infect Dis 2011;53:103-9.
28. Argent AC, Lachman PI, Hanslo D, Bass D. Sexually transmitted diseases in children and evidence of sexual abuse. Child Abuse Negl 1995;19:1303-10.
29. Bechtel K. Sexual abuse and sexually transmitted infections in children and adolescents. Curr Opin Pediatr 2010;22:94-9.
30. Heppenstall-Heger A, McConnell G, Ticson L, Guerra L, Lister L, Zaragoza T. Healing patterns in anogenital injuries: a longitudinal study of injures associated with sexual abuse, accidental injuries, or genital surgery in the preadolescent child. Pediatrics 2003;112:829-37.
31. Blush GJ, Ross KL. Sexual allegations in divorce: the said syndrome. Conciliation Courts Review 1987;25:1-11.
32. Ceci SJ, Bruck M. The suggestibility of the child witness: a historical review and synthesis. Psychological Bulletin 1993;113:403-39.
33. Berliner L, Barbieri M. The testimony of the child victim of sexual assault. J Social Issues 1984;40:125-37.
34. Goodman GS, Clarke-Steward A. Suggestibility in children testimony: implications for sexual abuse investigations. In: Doris J, editor. The suggestibility of children's recollection. Washington, DC: American Psychological Association; 1991. p. 92-105.
35. Hershkowitz I, Fisher S, Lamb M.E, Horowitz D. Improving credibility assessment in child sexual abuse allegations: The role of the NICHD investigative interview protocol. Child Abuse Negl 2007;31:99-110.
36. Moore J, Hudson P, Loda F. Child medical evaluation program: A statewide system for the medical and mental health evaluation of abused and neglected children. Forensic Sci Int 1986;30:119-26.
37. Bernet W, Corvin D. An evidence-based approach for estimating present and future damages from child sexual abuse. J Am Acad Psychiatry Law 2006;34:224-30**.**
38. Lamba ME, Orbach Y, Hershkowitz I, Esplin PW, Horowitz D. A structured forensic interview protocol improves the quality and informativeness of investigative interviews with children: A review of research using the NICHD Investigative Interview Protocol. Child Abuse Negl 2007;31:1201-31.
39. American Professional Society on the Abuse of Children. Guidelines for psychosocial evaluation of suspected sexual abuse in young children. Chicago, IL: American Professional Society on the Abuse of Children; 2002.
40. Hansen OI, Brink O, Sabroe S, Sorensen V. Legal aspects of sexual violence-does forensic evidence make a difference? Forensic Sci Int 2008;180:98-104.
41. Reza A, Mercy JA, Krug E. Epidemiology of violent deaths in the world. Injury Prevention 2002;2:104-11.
42. Finkelhor D. The international epidemiology of child sexual abuse. Child Abuse Neglect 2005;18:409-17.
43. Argo A, Zerbo S, Tumminello FM, Licata R, Procaccianti P. Percorsi di integrazione e modello operativo della rete antiviolenza: esperienza del progetto Daphne. Riv It Med Leg 2009;2:407-28.
44. Argo A, Bonifacio A *et al*. From 1997 to 2007: modified approach to sexual assault in our experience. Proceedings of American Academy of Forensic science, Denver, CO, USA; February 2009; D24:191-2.
45. Miller KE. Sexually transmitted diseases. Prim Care Clin 1997;24:179-93.
46. Centers for Disease Control and Prevention, 2010b. Centers for Disease Control and Prevention: Sexually transmitted disease surveillance 2009. Atlanta, GE: Department of Health and Human Services; 2010.
47. American Social Health Association/Kaiser Family Foundation, 1998. American Social Health Association/Kaiser Family Foundation: Sexually transmitted diseases in America: how many and at what cost?. Menlo Park, CA: Kaiser Family Foundation; 1998.
48. Centers for Disease Control and Prevention, 2008. Summary of notifiable diseases United States, 2008. MMWR 2008;57:18-9.
49. Zagra M. Denunce sanitarie. In: Zagra M, Argo A, Madea B, Procaccianti P, editors. Medicina legale orientata per problemi. Milano: Elsevier; 2011. p. 81.
50. Cates Jr W. Estimates of the incidence and prevalence of sexually transmitted diseases in the United States. American Social Health Association Panel. Sex Transm Dis 1999;26:S2-S7.
51. Weinstock H, Berman S, Cates W Jr. Sexually transmitted diseases among American youth: incidence and prevalence estimates, 2000. Perspect Sex Reprod Health 2004;36:6-10.
52. White C, Wardropper AG. Genital herpes simplex infection in women. Clin Dermatol 1997;15:81-91.
53. Centers for Disease Control and Prevention, 2010b. Sexually transmitted disease surveillance 2009. Atlanta, GE: Department of Health and Human Services; 2010.
54. Centers for Disease Control and Prevention, 2010c. Sexually transmitted diseases treatment guidelines 2010. MMWR 2010;59:1-110.
55. Centers for Disease Control and Prevention, 2009. Legal status of expedited partner therapy (EPT).
56. Fox KK del Rio C, Holmes KK. Gonorrhea in the HIV era: a reversal in trends among men who have sex with men. Am J Public Health 2001;91:1-5.
57. Coles FB, Muse AG, Hipp SS. Impact of a mandatory syphilis delivery test on reported cases of congenital syphilis in upstate New York. J Pub Health Manag Proct 1998;4:50-6.
58. Walsh TJ, Krieger JN. Urologic aspects of AIDS and HIV infection. In: Wein JA, Kavoussi LR, Novick A, Partin AW, Peters CA, editors. Campbel-Walsh Urology. 10th ed. Philadelphia, PA: Elsevier Saunders; 2012. p. 417-35.
59. Steinbrook R. The AIDS epidemic in 2004. N Engl J Med 2004;351:115-7.
60. World Health Organization. The World Health Report 2004 — changing history [Internet]. [Accessed May 2004]. Available at: http://www.who.int/whr/2004/en/
61. Joint United Nations Program on HIV/AIDS, July 2004. Joint United Nations Program on HIV/AIDS: 2004 Report on the global AIDS epidemic. Geneva, United Nations, July 2004. Available at: http://wwwwhoint/whr/2004
62. UNAIDS/WHO. Report on the global HIV/AIDS epidemic. Geneva: UNAIDS/WHO; 2008.
63. Carael M, Schwartlander B, Piot P. Epidemiology of HIV infection. In: Cohen J, Powderly WG, Berkley SF, Calandra T, editors. Infectious diseases. 2nd ed. Edinburgh: Mosby; 2004. p. 1197-207.
64. Quinn TC. HIV epidemiology and the effects of antiviral therapy on long-term consequences. AIDS 2008;22(Suppl 3):S7-12.
65. Heyns CF, Groeneveld AE, Sigarroa NB. Urologic complications of HIV and AIDS. Nat Clin Pract Urol 2009;6:32-43.
66. Mayer KH, Safren SA. Prevention of HIV transmission through behavioral and biological interventions. In: Cohen J, Powderly WG, Berkley SF, *et al* editors. Infectious diseases. 2nd ed. Edinburgh: Mosby; 2004. p. 1209-15.
67. Cameron DW, Simonsen JN, D'Costa LJ, Ronald AR, Maitha GM, Gakinya MN *et al*. Female to male transmission of human immunodeficiency virus type 1: risk factors for seroconversion in men. Lancet 1989;2:403-7.
68. Van de Perre P, Clumeck N, Carael M, Nzabihimana E, Robert-

Guroff M, De Mol P *et al*. Female prostitutes: a risk group for infection with human T-cell lymphotropic virus type III. Lancet 1985;2:524-7.
69. Laga M, Alary M, Nzila N, Manoka AT, Tuliza M, Behets F *et al*. Condom promotion, sexually transmitted diseases treatment, and declining incidence of HIV-1 infection in female Zairian sex workers. Lancet 1994;344:246-8.
70. Royce RA, Sena A, Cates Jr W, Cohen MS. Sexual transmission of HIV. N Engl J Med 1997;336:1072-8.
71. Boily MC, Baggaley RF, Wang L, Masse B, White RG, Hayes RJ *et al*. Heterosexual risk of HIV-1 infection per sexual act: systematic review and meta-analysis of observational studies. Lancet Infect Dis 2009;9:118-29.
72. Kuritzkes DR. Diagnostic tests for HIV infection and resistance assays. In: Cohen J, Powderly WG, Berkley SF *et al* editors. Infectious diseases. 2nd ed. Edinburgh: Mosby; 2004. p. 1369-78.
73. Reiss P, Boucher C, Vella S The role of resistance testing. In: Cohen J, Powderly WG, Berkley SF *et al*., editors. Infectious diseases. 2nd ed. Edinburgh: Mosby; 2004. p. 1404-05.
74. Argo A, Vella M, Zagra M. Segreto professionale e diritto alla privacy. In: Zagra M, Argo A, Madea B, Procaccianti P, editors. Medicina legale orientata per problemi. Milano: Elsevier; 2011. p. 189-96.
75. Hanssens C. Legal and ethical implications of opt-out HIV testing. Clin Infect Dis 2007;15:S232-9.
76. Meehan TM, Hansen H, Klein WC. The impact of parental consent on the HIV testing of minors. Am J Public Health 1997;87:1338-41.
77. Prestileo T, Argo A, Triolo V, Zerbo S, Procaccianti P. Il consenso informato per l'effettuazione del test per la diagnosi di infezione da HIV: come comportarsi in caso di minori. Le Infezioni in Medicina 2008;4:200-3.
78. Triolo V, Procaccianti S, Argo A, Procaccianti P. Consenso all'atto medico ed autonomia dei «grandi minori »: il caso del test HIV. Riv It Med Leg 2010;47:66.
79. American Academy of Pediatrics Committee on Bioethics. Informed consent, parental permission, and assent in pediatric practice. Pediatrics 1995;95:314-7.
80. Dorn LD, Susman EJ, Fletcher JC. Informed consent in children and adolescents: age, maturation and psychological state. J Adolescent Health 1995;16:185-90.
81. Department of Health and Human Services Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults adolescents, and pregnant women in health-care settings morbidity and mortality. Weekly Report 2006;14.
82. Triolo V, Argo A, Zerbo S, Procaccianti P. Legislation and comparison with some international laws. J Forensic Res 2010;1:108.
83. Larcher V. ABCs of adolescence: consent, competence, and confidentiality. BMJ 2005;330:353-6.