Finally, McPake and Hanson[4] discuss the importance of designing policies to govern the private sector. They emphasise that governments should choose policies to cover the performance of the sector as a whole and not the individual parts. Inevitably, policies will reflect the ability of governments to pay for services and provide the necessary capacity to do so. But as systems evolve towards universal health coverage the private sector could provide services that are publicly funded.

This Series concludes that perhaps the best option available to governments is to identify incentives to encourage private health providers to change their behaviour, making equity and quality more important measures of success, while addressing the dangers of an often predatory corporate health sector. Our hope is that the UHC: markets, profit, and the public good Series disentangles opinion from evidence. We hope these papers clarify what we mean when we speak of private health providers. And we hope they provide practical guidance for practitioners and policy makers (and perhaps even users) about how to optimise the interaction of public and private sectors to ensure that they do deliver healthy lives for all by 2030.

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The unfinished race: 30 years of gender verification in sport

30 years ago, María José Martínez-Patiño (one of the authors), a young Spanish woman athlete, was disqualified by the Royal Spanish Athletics Federation from competing in hurdling after it was established that her chromosomal constitution was not female. She was eventually diagnosed with complete androgen insensitivity syndrome, a disorder in which, despite the presence of a Y chromosome, the phenotypic development is female because of a lack of functional response to testicular androgens. Her refusal to stop competing as a woman made her an emblematic figure of the fight against arbitrary and discriminatory rules imposed by sports authorities against women, and the European Athletic Association declared her eligible to compete again 2 years after the disqualification. Here we discuss unresolved issues of sex segregation in sports that remain a cause for concern.

Objective biological criteria are used to establish athletes' eligibility in competitive sports and create a common ground—what is referred to as "fair play" under the fourth principle of the Olympic Charter[1]—between all the participants of a discrete category. This idea of fair play intends to prevent inequitable advantages. Hence, two main issues are the regulation of prohibited performance-enhancing substances[2] and the traditional separation of men and women to avoid conferring an advantage to men.[3]

The Medical Commission of the International Olympic Committee (IOC), created in 1961, initially faced ethical problems when it tried to ensure that only same-sex participants were competitors. The Medical Commission did not rely on examination of physical appearance, including the genitals, and instead the main criterion of sex segregation became assessment of the karyotype (XX for women and XY for men).[4] This approach oversimplified the complexities of the spectrum of biological sex and its many variables[5] and conflated a biological feature (chromosomes) and a social identity (gender) with the use of "certificates of femininity" based on chromosomal constitution. The eventual aftermath of the case of Martínez-Patiño, who had suffered devastating consequences, such as shame, prejudice, and the curtailing of a promising athletic career,[6] was the abandonment of chromosomal testing by the IOC in 1999. Curiously, though, the same fourth principle of fair play that disqualified Martínez-Patiño also called for the absence of "discrimination of any kind". As it has been recently argued, the question of to whom "fair" should apply to—to most of the competitors or to the individual athlete—is subject to debate.[7]

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In the absence of specific guidelines, new cases arose that focused on the potential unfair advantage provided by endogenous hyperandrogenism (the natural overproduction of testosterone)—for example, the disqualification of Santhi Soundarajan in 2006 and provisional suspension with requirements for sex-related biological tests for Caster Semenya in 2009. Sports authorities responded by providing guidelines based on measurement of hormones, notably androgens, that are relevant to athletic performance and highly sexually dimorphic, in an effort to assure fair play and minimise the social impact on affected athletes.

In 2011, the International Association of Athletics Federation, followed shortly after by the IOC, published new regulations for the eligibility of females athletes with hyperandrogenism.[8] These guidelines established a limit of 10 nmol/L of testosterone in serum (the lower limit of the normal male range) to compete in the female category. This was a progressive move in Olympic policy, since for the first time testing was limited to an aspect of biological sex and did not challenge the gender identity of athletes.[9] However, this guideline was the subject of much argument[10] and was suspended in July, 2015, after it was challenged in the Court of Arbitration for Sports by athlete Dutee Chand, who was prevented from competing in the female category.[11] The IOC produced new guidelines in November, 2015, this time regulating male-to-female transgender athletes, requiring a testosterone concentration below 10 nmol/L as the sole parameter for eligibility in the female category, and removing previous prerequisites of sex reassignment surgery, hormone treatment, and legal change of gender.[12] These new guidelines, although a tremendous move towards the integration of athletes with gender variations, add to a confusing landscape.

The IOC guidelines now require testing of a biological parameter for transgender athletes and have suspended such testing for other athletes. Debate continues between those who call for a simple declaration of gender for eligibility (the so-called identifiers) and those who demand a gender test, however imperfect it is (the so-called anatomists).[13] The view that sports should acknowledge a broad and inclusive spectrum of gender identities exists in tension with the notion that athletic performance is rooted in biologically driven ability which accounts for clear differences in performance between men and women. How are we to move forwards?

There are many challenges ahead to improve policies on gender in sports. Since there are only a small number of published studies on the effect of endogenous testosterone and athletic performance in women,[14] evidence on the validity of biological parameters should be obtained before establishing categories or physiological limits. In addition, sports federations should foster and support ethical research projects on sex differences in performance. The idea of "sports sex" could also be considered. This concept could be established by using improved biological parameters, such as osteological markers or others yet to be characterised, that are not limited to testosterone (since decades of testing have not identified a consensus parameter) and not linked to gender identity, but rather only focused and valid in relation to athletic performance. The possibility of additional gender categories to recognise the societal fluidity of gender identities should also be considered—as exemplified by the more than 50 gender choices on Facebook or the legal changes in some countries' identity policies (eg, Australia, Bangladesh, Denmark, Nepal, and New Zealand) to include recognition of a third gender. 30 years after the disqualification of Martínez-Patiño, there are still many hurdles on the horizon of gender policies in sport.

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Finding a balance: Canada's law on medical assistance in dying

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On June 17, 2016, the Parliament of Canada passed Bill C-14, a new law governing medical assistance in dying.[1] The law permits physicians, and in some cases nurse practitioners, to provide an assisted death for competent adult patients who make a voluntary request, who have been informed of means available to alleviate their suffering, and who have a "grievous and irremediable" condition, as defined in the legislation. Canada's new law must be understood in the context of competing moral and legal claims at play in a highly charged policy debate.

Canada's pathway towards this historical juncture was long, acrimonious, and painful. In February, 2015, the Supreme Court of Canada (Carter *vs* Canada) ruled that the prohibition against physician-assisted dying violated the constitutional right to "life, liberty, and security of the person".[2] Hence, the court ruled that physicians should be permitted to end the life of "a competent adult person, who (1) clearly consents to the termination of life and (2) has a grievous and irremediable medical condition (including an illness, disease or disability) that causes enduring suffering that is intolerable to the individual in the circumstances of his or her condition".[2] The Supreme Court acknowledged the need to balance competing values of great importance: "On the one hand stands the autonomy and dignity of a competent adult who seeks death as a response to a grievous and irremediable medical condition. On the other stands the sanctity of life and the need to protect the vulnerable."[2] The Supreme Court ruling suspended its declaration, giving the Canadian Parliament 16 months to devise a "complex regulatory regime" that would permit assisted death, while being calibrated to protect the vulnerable from abuse or error.

Balancing strongly held moral views and values is no small feat. Various committees and expert panels[3–5] at the federal and provincial/territorial levels, including three separate parliamentary committees, heard testimony from legal and constitutional experts, health-care experts, social policy and government officials, civil liberties organisations, and disability and other advocacy groups—making clear, if nothing else, that striking a workable legislative balance would be enormously difficult.

Committee members were told by advocates for a broadly accessible approach to assisted dying that grievous and irremediable suffering can derive from psychological as much as from physical conditions; that dementia, or even the fear of dementia, can cause tremendous anguish; and that adults do not hold a monopoly on suffering.[4,5] Those advancing these arguments held that access to medical assistance in dying should not be limited solely on considerations of