

## Expanding global access to radiotherapy: the European Society for Radiotherapy and Oncology perspective

See *The Lancet Oncology Commission* page 1153

“Every cancer patient in Europe will have access to state of the art radiation therapy, as part of a multidisciplinary approach where treatment is individualised for the specific patient’s cancer, taking account of the patient’s personal circumstances.” This statement is taken from the European Society for Radiotherapy and Oncology’s 2012 vision for radiation oncology,<sup>1</sup> which recognised that access to high-quality radiotherapy is one of the cornerstones of optimum oncological care.

The Union for International Cancer Control has embraced that same objective in its Global Task Force on Radiotherapy for Cancer Control (GTFRCC), and has applied a broad worldwide perspective to it in this issue of *The Lancet Oncology*,<sup>2</sup> with a special emphasis on low-income and middle-income countries. From an initially more limited focus questioning which investments are required to close the gap in global access to radiotherapy by 2035, this project evolved towards an all-encompassing investment framework.

On the basis of the burden of cancer—both that now and in the decades to come—the current and future shortfalls in radiotherapy services have been calculated. Huge variation among countries was noted in cancer incidence and profile, and in current radiotherapy coverage, which is insufficient or even non-existent in many low-income and middle-income countries.

Estimated future requirements were also presented.<sup>2</sup>

Investment in radiotherapy is often thought to be too complex and expensive. The GTFRCC for the first time presents worldwide cost estimates. The one-time upfront cost to establish new capacity, covering start-up investment and professional training, hovers around US\$350 per fraction in low-income and middle-income countries and \$800 per fraction in high-income countries. Thereafter, operating costs, including capital depreciation, range from a mere \$60 to \$86 per three-dimensional conformal radiotherapy fraction in low-income and middle-income countries, compared with \$235 in high-income countries, for which costs were calculated for a mix of conformal and intensity-modulated fractions.

Although these costs compare favourably with the high costs of cytotoxic drugs (especially new drugs), formal cost-effectiveness data and elaborate business models are typically required to support health-care policy making and investment planning for new radiotherapy resources. Economic evaluations comparing radiotherapy with systemic treatments alone are often unrealistic because of the different disease entities in which both treatment modalities are used. We should not, however, forego the fact that cancer care is best served by an integrated multidisciplinary approach. Thus the innovative approach used by the GTFRCC—ie, an investment framework that scales up the radiotherapy costs to the required capacity in 2035 and balances them against the expected life-years gained—is particularly noteworthy. Their work shows that a positive return on investment can be anticipated over the analysed period, especially if scientific advances enable more efficient radiotherapy.

Because of the better radiotherapy coverage in high-income countries—with even a perceived overcapacity in some countries—the GTFRCC project did not further elaborate on the investment framework in these nations. But sufficient resources do not by themselves safeguard access to state-of-the-art radiotherapy. In a heterogeneous region such as Europe, for example, the diversity in cancer incidence and survival, and the



organisation and economic determinants of health care, are deemed to increase inter-country variations in access to radiotherapy. The European Society for Radiotherapy and Oncology's Health Economics in Radiation Oncology (HERO) project<sup>3</sup> was launched in 2011 with the overall aim of developing a knowledge base and a model for health economic evaluation of radiation treatments at the European level. The data collection and analyses accomplished so far have not only made explicit the huge variations in radiotherapy availability and related key parameters,<sup>4,5</sup> but also shown that, even in Europe, the actual use of radiotherapy is substantially lower than the optimum use predicted from evidence-based estimates. Less than a fifth of included countries treat at least 80% of the optimum radiotherapy indications and about half remain substantially less than 70%.<sup>6</sup>

Part of this variation can surely be traced back to the differences in wealth among the countries—a higher gross national income typically translates into better resource coverage. But geographical impediments to access; the health-care financing structure of the country; patients' characteristics including age, comorbidity, socioeconomic status and personal opinion; and the physician's preferences, awareness, and knowledge all have roles in referral to, and acceptance of, radiotherapy.

Although education and clinical science dissemination are the foundations needed to empower the radiotherapy community to take up its full potential in the multidisciplinary oncology arena,

there is much more to be done. To achieve the goal of providing the right treatment to every patient, an even greater emphasis is needed on health services research. The European Society for Radiotherapy and Oncology is responding through its HERO project, which mainly helps European national radiotherapy societies to strengthen the profession in their respective countries. On a global level, we are happy to support the work of the GTRCC, which enables countries worldwide to estimate the radiotherapy investments that are imperative to provide effective and efficient multidisciplinary cancer care.

\*Philip Poortmans, Vincenzo Valentini, Yolande Lievens

Department of Radiation Oncology, Radboud University Medical Center, 6500 HB Nijmegen (874), Netherlands (PP); Radiation Oncology Department – Gemelli ART, Università Cattolica del Sacro Cuore, Rome, Italy; and Ghent University Hospital, Ghent, Belgium (YL)  
philip.poortmans@radboudumc.nl

PP is president of the European Society for Radiotherapy and Oncology, VV is the past-president, and YL is president-elect.

- 1 Valentini V, Bourhis J, Hollywood D. ESTRO 2012 strategy meeting: vision for radiation oncology. *Radiother Oncol* 2012; **103**: 99–102.
- 2 Atun R, Jaffray DA, Barton MB, et al. Expanding global access to radiotherapy. *Lancet Oncol* 2015; **16**: 1153–86.
- 3 Lievens Y, Grau C. Health economics in radiation oncology: introducing the ESTRO-HERO project. *Radiother Oncol* 2012; **103**: 109–12.
- 4 Grau C, Defourny N, Malicki J, et al. Radiotherapy equipment and departments in the European countries: final results from the ESTRO-HERO survey. *Radiother Oncol* 2014; **112**: 155–64.
- 5 Lievens Y, Defourny N, Coffey M, et al. Radiotherapy staffing in the European countries: final results from the ESTRO-HERO survey. *Radiother Oncol* 2014; **112**: 178–86.
- 6 Borras JM, Lievens Y, Dunscombe P, et al. The optimal utilization proportion of external beam radiotherapy in European countries: an ESTRO-HERO analysis. *Radiother Oncol* 2015; **116**: 38–44.

## Radiotherapy in southeast Asia: room to grow

The Lancet Oncology Commission on global access to radiotherapy<sup>1</sup> is prescient work that should become required reading for all who have influence in national health-care systems. Despite nearly 120 years of effective use in cancer treatment and demonstrable cost-effectiveness,<sup>2</sup> the Commission's findings show that substantial numbers of patients with cancer are unable to access correct treatment because of inadequate radiotherapy resources. This deficit is clearly in evidence in many regions of the world, including southeast Asia, which covers roughly 4.3 million km<sup>2</sup>, is home to 625 million people, and has a gross domestic product

of US\$2.5 trillion. Of the nations, two (Brunei and Singapore) are high-income countries, two (Malaysia and Thailand) are upper-middle-income countries, five (Burma, Indonesia, Laos, Philippines, and Vietnam) are lower-middle-income countries, and Cambodia is a low-income country.

Southeast Asia's gross domestic product has grown by 5–5.5% per year over the past 15 years.<sup>3</sup> Central to sustained economic improvement is a stable political sphere with good governance. To bring about improvements in health care, including cancer care, strong governmental actions are needed to channel

See [The Lancet Oncology Commission](#) page 1153

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.