

SUPPLEMENTAL REPORT OF THE  
INTERNATIONAL COMPARISONS

THE NETHERLANDS



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## 1. Introduction to the Netherlands

### 1.1 Purpose

I was charged to undertake supplementary consultations in the Netherlands environment to generate:

- An overview of the current landscape in Dutch medical education;
- Current issues / trends that impact upon or should impact upon medical education;
- How / if undergraduate medical school programs are engaging / responding to these societal shifts;
- Examples of innovation in Dutch medical education.

### 1.2 Conduct of the study

I was able to arrange visits to two University Medical Centres in the Netherlands—Utrecht and Maastricht. Key stakeholder interviews were arranged with medical education leaders at these locations, and during these visits I met with a variety of faculty to get an overview of different aspects of the programs, and with students. See Appendix 1 for a list of the people interviewed. In addition, a number of key reports were reviewed in conjunction with the visit and are listed in Appendix 2.

### 1.3 Outline of the report

The report is based on notes taken during my interviews and meetings, as well as the background reading. It is not intended to be a comprehensive review of medical education in the Netherlands but rather to highlight some high level themes that we found to be recurring and that seemed to be most relevant to the Future of Medical Education in Canada project. The report is divided into the following sections:

- A brief description of the organization of medical education in the Netherlands;
- An overview of current and future issues in Dutch medical education;
- A summary of key points, relevant to the Future of Medical Education in Canada project

## 2. Organization of medical education in the Netherlands:

The Dutch medical school system, which is predominantly direct entry from high school, requires that secondary school students finish a pre-requisite high school curriculum and take a national examination. Unique to the Netherlands, students then apply to a weighted national lottery procedure for entrance selection to medical school. However, those with very high scores on the national exam may freely enter the medical school of their choice. A second entry route, similar to the North American system, exists at two schools, Utrecht and Maastricht, and allows for graduate entry into a four year medical programme for those with a prior bachelor diploma in biomedical sciences.

“The Government regulates the enrolment number, currently 2850 students per year ([Table 1](#)). As the interest among high school graduates has always exceeded this *numerus fixus*, 30 to 50% of applicants are turned down, either because they fall out of the lottery, or they do not meet selection criteria. The choice of a medical school is mostly based on impressions from organised meetings for secondary school students, more than from thorough investigation of the educational quality; the Dutch public usually trusts that all schools deliver adequate education-

which in itself is not untrue. Geographical convenience is a more important determining factor than universities would like to believe.

**Table 1. Figures of medical education in the Netherlands**

Dutch population	16.3 million
Number of active medical specialists	14,000
Number of active general practitioners	9,000
Number of active public health and other doctors	4,000
Number of university medical schools	8
Total yearly enrolment of new students	2,850
Total number of medical students	15,600
Male: Female ratio among medical students	30:70
Total number of residency positions	2,500
Number of acknowledged specialties with training	33

Figures retrieved from [www.NFU.nl](http://www.NFU.nl), [www.capaciteitsorgaan.nl](http://www.capaciteitsorgaan.nl), [www.medischevervolgopleidingen.nl](http://www.medischevervolgopleidingen.nl) Capaciteitsplan11-2005.pdf (all accessed August 1, 2007).”

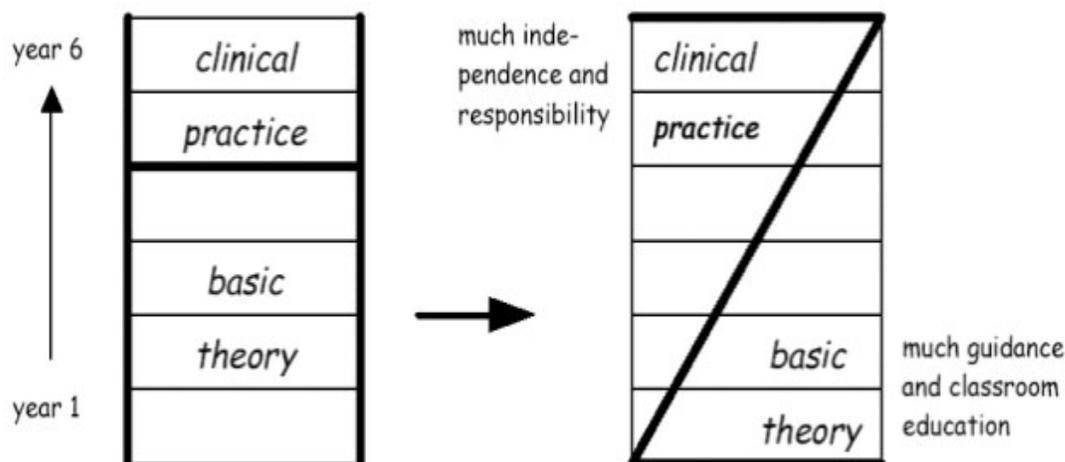
(above quote from: Olle Ten Cate, Medical Education in the Netherlands, *Medical Teacher* 2007; 29; 752-757)

The medical program in the Netherlands is six years in length, and follows the Bologna framework. (bachelor plus master) Unlike North America, Dutch students receive significant government financial grants for their living expenses and education. Many students also work in jobs to make extra money needed. Very few students graduate with any significant debt. The work week is limited in hours as per the European work-time directive. Most students who graduate from medical school apply for postgraduate training, which is not under the jurisdiction of the Universities, though the University Medical Centres play a major role in the delivery of such training.

### **3. Overview of current and future issues/trends/ideas from interviews in the Netherlands, and some innovations at the two schools surveyed:**

- Competency-based education in many health professions such as nursing and medicine--- Netherlands has embraced CanMEDS- CanMEDS competencies will be integrated into across the UG-PG medical education continuum in the Netherlands (already in Postgraduate)--- “Medical training could change from fixed-length variable-outcome programmes to fixed-outcome variable length programmes” (Ten Cate)
- Generalist-Specialist Balance- future trend towards more generalism

- Shorten length of initial training—then extend further training throughout lifespan of physician—laddering, on and off training continuum e.g., one day a week devoted to life-long learning during practice
  - Portfolios to become life-long evidence of competency, useful to learner for reflection and to external bodies for validation
  - Need better program evaluation, and understanding of outputs of programs
  - Increased flexibility of training, matched to student interests
  - Training linked to patient safety
  - Impact of work hours, work-life balance, and gender diversity—32 hours total per week in school, typically 20 hours scheduled time; women typically work 50% time, stay at home with children until age 12; only 2-6% of Professors are women despite 70% of medical students being women; few women deans
  - Developing global standards of medical education, physician migration, transferable credentials
  - Better curriculum needed for collaborator and communicator roles—intra and interprofessional education and care
  - Trend from PBL paper cases to patient-centred PBL, based on real patients seen by students in clinics -move to *workplace* teaching and assessment
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- Shift from a discipline orientation, towards a system-, problem- and patient-orientation. Specifically, the vertical integration movement has led to the transition from H-shaped curricula towards Z-shaped ones. (diagram from Utrecht web site, both schools)



- Review of admissions tool kit-better predictive measures—is lottery working?
- Concern re decreased emphasis on basic science knowledge
- Curricula must contain more formative feedback towards competency attainment, direct observation of patient encounters, progress tests, and review of portfolios; clinical work sampling with narrative feedback during clerkship
- Promotion of international experiences for all medical students
- All faculty in Netherlands must now demonstrate teaching qualifications (new regulation)
- Trend for more medical students to end up in diverse practice, e.g; business, government, health policy etc
- Increasing use of IT, decreased lectures, simulation integrated with clinical training
- Governance -integrated structures between academic health science centre and university— Dean is Vice-President of Hospital and Hospital President is Vice-Dean of Faculty— integrated, small and nimble governing board (Maastricht)
- Introduction of clinical training right at beginning of medical school (eg emergency rotation in first year to demonstrate physiology) (Maastricht)
- All students complete research scholarly project (Maastricht)
- Students in clerkship have mandatory teaching rotation (one week), option for 6 week clerkship to become more expert teacher (Utrecht)
- Students as partners in curriculum development (Maastricht)

**Key Issues:**

The medical education system in the Netherlands has many developments that are relevant to the discussions of the Future of Medical Education in Canada Project. These include

- i. Issues related to inputs, the effectiveness of the lottery admissions system, and whether a tool kit exists that can predict the full set of competencies expected of physicians
- ii. Issues related to the evolution of PBL, particularly from paper to patient-based cases, with expert tutors
- iii. Issues related to formative feedback, and assessment, in an authentic, workplace-based environment
- iv. Development of life-long portfolios
- v. Effects on HHR planning of changes in workplace—gender, work hours etc
- vi. Increased flexibility of training models, laddering
- vii. Changes in models of UME curriculum—early clinical exposure, ‘Z’ rather the ‘H’ base
- viii. Tighter competency linkages with post-graduate education, and continuing professional development, all under university auspices
- ix. Evolution of “graduate” four year programs, with preceding science degrees, and aimed towards producing physician researchers

**Appendix 1: List of People Interviewed**

**University of Maastricht Medical Centre:**

Jan van Dalen, Ph.D., Director, Skills laboratory. Clinical Psychologist.

Diana Dolmans, Ph.D., Department of Educational Development and Research. Associate Professor and Educational Psychologist.

Marjan Govaerts, MD. Ph.D., Department of Educational Development and Research. Assistant Professor.

J.P. Kooman MD. PhD., Associate Professor of Nephrology and Internal Medicine.

Prof. Martin Paul, Dean of the Faculty of Health, Medicine and Life Sciences

Albert Scherpbier, MD. Ph.D., Director, Institute of Medical Education. Professor of Quality Improvement in Medical Education.

Medical Students- Year III of program

**University of Utrecht Medical Centre:**

Olle Ten Cate PhD., Professor of Medical Education and Director, Centre for Research and Development of Education

**Appendix 2: Background information: key documents, organizations and websites**

Olle Ten Cate, Medical Education in the Netherlands, *Medical Teacher* 2007;29;752-757

Feede Scheele et al, Introducing Competency-Based Postgraduate Medical Education in the Netherlands, *Medical Teacher*, 2008; 30; 248-253

Olle Ten Cate, Entrustability of professional activities and competency-based training. *Medical Education* 2005; 39: 1176–1177

Maastricht University, Medical Curriculum Contents, 2008-2009, Faculty of Health, Medicine and Life Sciences

Maastricht University, Faculty of Medicine Skills Lab Syllabus