



## Interview with Margareta Berg, MD, PhD

Consultant Orthopaedic Surgeon, Chairman and Project Director of the Surgicon Foundation.

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Image Credit: Margareta Berg, MD, PhD.

**D**r. Berg performed her residency, and was awarded her PhD degree in Orthopaedic Surgery, at the Sahlgrenska University Hospital, Gothenburg Sweden. During this period she invented and organized "The Hip Replacement Project". In 1989 she founded the association for female orthopaedic surgeons in Sweden. As a consultant orthopaedic surgeon at a rural Hospital in Skene, she became interested in medical informatics and in 1996 became the project leader of a major regional project dealing with computerized patients' records. This position allowed her to head the informatics department and become a member of the hospital direction board at the NU-Hospital group (five hospitals with 5,000 employees and 2,500 computers). She was concurrently a member of the regional and national boards of medical informatics. From 2001-2005, she worked for Pascal Boileau, MD, at the Centre Hospitalier Universitaire de Nice, France, and was responsible for the research activities and organized the 1st

and 2nd version of the "Nice Shoulder Course" (2003 and 2004). During the same period she was Medical Advisor at two different French companies, successively, where she worked with the registration process of new surgical implants, in accordance with European Union standards and directives. As a community subject matter expert with global recognition, Dr. Berg was a guest lecturer at the South Brazilian Orthopaedic Society in Florianopolis (2003), the 50-year jubilee meeting of the Indian Orthopaedic Association in Mumbai (2005) and at the Ruth Jackson Orthopaedic Society in San Diego (2011), an affiliate meeting of American Academy of Orthopaedic Surgeons. In 2009 Dr. Berg was named "Ambassador for Female Entrepreneurs" by the Swedish Minister Maud Olofsson. In 2010 she initiated and started the Surgicon Project, a world-wide informal network of leading surgeons dealing with Surgical Quality & Safety. Her efforts resulted in the convening of two World Congresses on Surgical Training (2011, 2013) and the book "Cutting Edges in Surgical Training" (ISBN 978-83-7599-561-9). The 2013 Surgicon meeting was accredited by The European Accreditation Council for Continuing Medical Education ([www.surgicon.org](http://www.surgicon.org)). As this issue was being published, Dr. Berg accepted an invitation to complete a three month "Internship" at World Health Headquarters in Geneva beginning this January. Her time in residence will initiate a collaboration between the organization's Global Initiative for Emergency and Essential Surgical Care and Surgicon.

**MEdSim:** *Your assessment on the European healthcare community's current use of simulation and other learning technologies throughout the members' continuum of learning.*

**Dr. Margareta Berg:** There is a huge variation throughout Europe, not only among countries but also within countries. Geographically the use is most developed in the Northwestern region, in particular Sweden, Denmark, the Netherlands, Switzerland, the UK and Ireland. Younger professors in surgery, born in the era of informatics, are more trendsetting in this area. We should also keep in mind that European medical education originated from medieval universities that historically developed their own knowledge and educating systems – depending on personal profiles taking the lead in ancient times. Communication and coordination were strongly limited, explaining why we still suffer from inconsistencies and differences in our education systems. The use of simulation and learning technologies depends on financial resources, development levels, and personal interest and engagement.

**MEdSim:** *As one follow up, how do you see the healthcare simulation market evolving in Europe through the next several years?*

**Dr. MB:** As soon as the financial situation in Europe stabilizes, I think we will see a "slowly exploding market". A crucial factor will be the insight and understanding by hospital and university leadership, to create dedicated budgets for learning technology. I feel there is a huge knowledge gap between health care providers trying to run surgical hospital care in an efficient way on one side, and the needs for surgical training and education on the other side. Yet it seems that consciousness is generally limited in this area. In the end it all comes down to hard facts: Decision makers and health care economists will need to calculate long



term costs for efficient care that minimizes avoidable surgical complications, and compare the figures with the necessary investments in simulation and learning technology. This also means that we will need to make health care budgets for more than one year at a time.

**MEdSim:** *How might healthcare providers in Europe and their counterparts in the US and elsewhere, increase their collaboration in simulation and other learning technologies?*

**Dr. MB:** Personally I have been a strong advocate for 15 years on the need for new, combined education and university degrees in "Medicine & Informatics" or "Medicine & Economics & Informatics". Health care providers have limited knowledge in informatics, industrial collaboration and agreements – and vice versa. Specialists in informatics have a limited knowledge about health care systems and their financing systems. This creates a recurrent problem which has to be overcome to increase fruitful collaboration and mutual understanding. We have seen too many examples in the last 20 years where health care providers have paid fortunes to receive mediocre computerized solutions, evident by the knowledge gap between medical experts in health care and industrial suppliers of hardware and software.

**MEdSim:** *Your thoughts, on implementing standards for training in healthcare curricula in the US and Europe?*

**Dr. MB:** At the last Surgicon Congress [June 2013] the following comment was made: "Today we have three quite well developed surgical curricula, in Ireland, Australia and the US. Why not try and combine these three and create a kind of "Golden Standard" – instead of each country and each surgical specialty inventing the wheel over and over again?" The ultimate long term goal must be "Global Surgical Licenses", as the human anatomy is the same regardless of country, culture or skin color. Presenter Richard Reznick, MD, from Canada showed a slide of an appendicitis event in Canada, and another slide of an appendicitis event in Africa – that is, the same slide was shown twice.

In addition, we live in an era of increasing migration and travelling. If we could spare the administrative paper work, and the obstacles for a skilled surgeon to work in a new country, we might find the financial resources needed to invest in simulators and learning technologies.

**MEdSim:** *As one follow up, what are some of the obstacles to implementing regional and even global standards in healthcare curricula?*

**Dr. MB:** Well, the obstacles seem to be endless. First, we need to make politicians and decision makers fully aware of the problem and interested in the topic. When we have managed to make them understand, then the practical work remains to be done. Then we need to agree about the benefit in letting go of local and national prestige factors, to be able to focus on the two main issues: Patient's Safety and Surgeon's Safety – that is, "The surgeon's feeling of security, entering the profession". In this process we need to accept the increasing role of informal networks and communities, replacing old and very slow hierarchic structures.

To manage we also need some common informatic systems to keep track of completed training steps in the curriculum. There are a few domains where a strong "Top-Down" leadership is necessary, and informatics is one of these – to avoid a jumble of technically non-compatible computer software systems, often seen today as a doctor's nightmare. At this very moment in 2013 it is not uncommon where I work to have 10-15 different software programs open to run a normal out-patient consultancy (patient record, booking system, surgery waiting list, billing system, x-ray image system, sick leave report system, etc.). But before this top-down implementation stage we need a humble and open collaboration as a first step to define a common baseline and the steps of "The surgical education staircase". This process will take years of work and financial resources.

**MEdSim:** *And as another follow up, are standards needed in the health care simulation equipment industry?*

**Dr. MB:** Yes. It is most easily compared with the building industry where there

are standards for plumbing, electrical components, door and window sizes, etc. From the beginning houses were built of the material available, like stones, wood and mud. Now one company makes the windows and another the house's walls and you can buy standard components for your plumbing system in the local store and fix it yourself. Future informatic systems, as well as simulation systems, should be made of limited components and the principle of "plug & play". It is not practical, or technically and financially possible, to build one single system covering everything. Industry would better support the rapid development of new solutions.

**MEdSim:** *As a community leader, your "help wanted list": how can the health care simulation equipment community better meet the learning needs of you and your community colleagues?*

**Dr. MB:** We now see a tendency of "normal users" creating limited software solutions themselves, testing them within their internet communities even before they are completely mature, and spreading them in a split second. This is a complete paradigm shift compared to traditional software development, when a software program should be "ready" before release, delivery and implementation. My personal opinion is a software program is never ready, but is in a constant development process. This also changes the financial side, where we will need "subscriptions over time" combined with some power to influence the development – to replace the traditional phone book of "specification of requirements" which takes three years to create and gets old before it is ready, resulting in one huge invoice after delivery, often with minimal returns on investment.

Maybe this was not your expected answer as regards the learning needs of surgeons; but looking around the corner the learning needs are not static but eternally and very quickly changing.

To start with, it would be very helpful to have simulation equipment support to confirm the basic skills achieved e.g. at two years in surgical residency regardless of specialty, creating the basis for an international and general surgical exam.



**MEdSim:** *What are some of the advancements you are seeing in team training for healthcare professionals?*

**Dr. MB:** At this moment in the interview I think it is about time to explain that I am the creator and organizer of the Surgicon Project, based on my experiences from more than 30 years' work in orthopaedics and informatics. I am not engaged as a surgical teacher, which means that my views come from a distant and very personal perspective. Regarding team training I believe this can be most valuable to achieve in the OR, and that we have a lot to learn from commercial airplane pilots. They use principles that could easily be transformed into the operating theatre – the necessity to explain your plan before take-off, to answer all questions, the obligation to alert the air traffic control system in case of deviation from the original plan - even if you are in a lower position in the hierarchy, a nurse or resident, for example.

**MEdSim:** *We've discussed some important advancements in medical simulation and other learning technologies. What are some of the other challenges to more effectively and efficiently introduce these technologies into health care providers' learning curricula?*

**Dr. MB:** The crucial question for residents is to get access to different forms of simulation and technical simulators, meaning dedicated time and money for training. Here's another technology development to keep in mind: surgical video films will replace the traditional written medical record, showing the patients exactly how their surgery was performed. This will come in a very short time, in the computerized medical records.

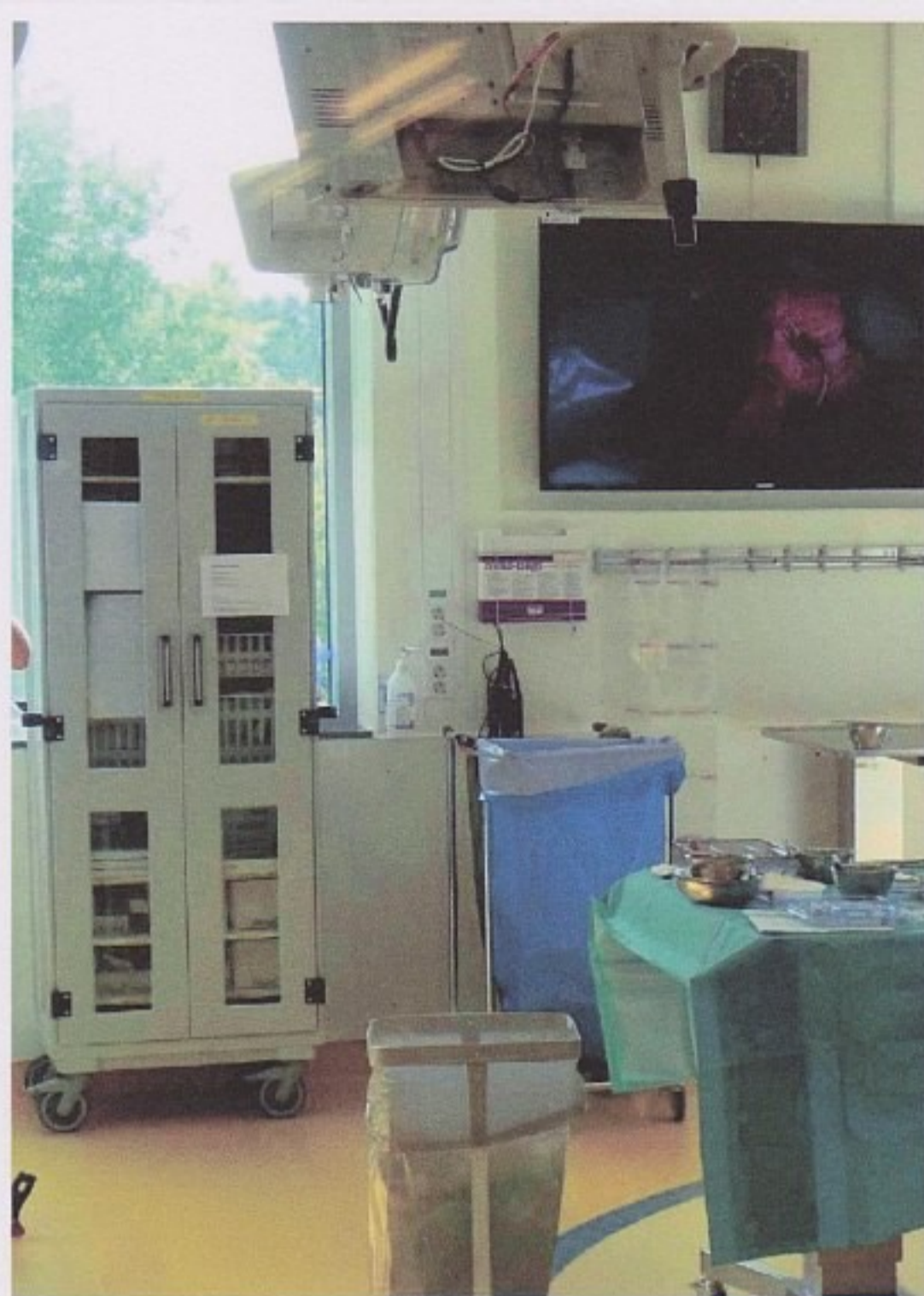
So the organizational bodies responsible for surgical training and re-training at different stages should include surgical simulators and learning technology equipment as a natural part of their budget. I also think financial decision makers need a much better understanding of this entire topic.

**MEdSim:** *MEdSim was pleased to attend the 2013 Surgicon. Share with us the importance of this and other conferences in an era of constrained budgets for many.*

**Dr. MB:** My personal conviction is that the above mentioned health care providers, financial decision makers and health care politicians should have listened to the entire program at Surgicon. The surgical community should also be present, to illustrate and discuss the topics with health care providers. The reason behind these thoughts is the three factors rapidly changing modern surgery:

1. On going retirements in the surgical community, where a huge amount of knowledge will disappear in a few years;
2. Regulated work hours for young surgeons, meaning less time for training; and
3. The technical access to surgical simulators.

In the 1980s it took 10 years to form a skilled surgeon, with a 70 hour working week. With a 40 hour working week a new skilled surgeon will be ready for retirement at the end of the training program. To me it seems as if the question about who is responsible for addressing the rapidly changing dynamics in



health care training is not clearly defined, meaning that we are still fumbling in the dark to find the correct target audience for the Surgicon meetings.

Surgicon is also very different from ordinary surgical congresses targeted on narrow surgical specialties to report scientific results. Our focus is at "the 30,000-foot" level, trying to broaden views and collaboration to save time and energy for all people involved in creating surgical curricula for each specialty in each country.

Some useful data were presented from Vårdskademätningen, Socialstyrelsen [Care Period Measurement, National Board of Health and Welfare] 2008 study in Swedish revealed 105,000 unintentional injuries in hospital health care in a population of 9 million inhabitants, of which 3,000 were lethal. In all she reported about 50 percent of injuries were related to surgical procedures. Each injury led to six extra days of hospitalization. Simply counting an average of \$(US)1,000 per hospital night, the cost could be  $6 \times 105,000 \times 1,000 = \$630,000,000$  per year only in Sweden! This might be a financial

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Image Credit: Margareta Berg, MD, PhD.





incentive for investments in surgical simulation equipment, and a reason why Surgicon should attract attendants.

As a comparison, Sweden has invested vast sums in a "Zero Vision" that addresses how to "zero out" lethal and serious injuries from traffic accidents – now about 300/year.

**MEdSim:** As a final follow up, how do you see Surgicon and similar conferences evolving in content and other attributes through the next several years?

**Dr. MB:** First of all I would like to emphasize the principle "No competition – Only collaboration". Competing and prestige seem to be counterproductive in this specialized field, and all efforts and contributions are welcome. To manage we will also need a kind of neutral umbrella or mother-organisation sanctioning the global efforts. This important policy matter remains unresolved. The question about who is the organiser is of less importance, compared to the question of making every meeting a natural continuation of the last one. We do not have the time to start all over again at each meeting. The amount of research, work and efforts between the meetings should also be considered as important as the meetings themselves. [medsim](#)

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