

John Boyages: “architect” in designing and building innovative programs against breast cancer

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Introduction

Professor John Boyages, MB, BS (Hons), FRAZNC, PhD (*Figure 1*), is a leading breast cancer specialist who has pioneered innovative approaches in the detection and treatment of women with breast cancer. He is the director of Breast Oncology at Macquarie University Cancer Institute, Macquarie University, Sydney, the founder of Westmead Breast Cancer Institute (BCI) and BreastScreen NSW Sydney West. Nominated as one of four finalists for “NSW Australian of the Year 2013”, he and his team have contributed in decreasing the mortality from breast cancer in the West of Sydney with a massive fall of almost 35% since 1992.

The journal *Gland Surgery* is honored to have an interview with Professor John Boyages to share with readers stories behind his clinical excellence, about the establishment of BCI and BreastScreen Sydney West and his acceptance of the appointment in Macquarie University.

Interview

How did you get involved in breast cancer research?

When I finished my medical degree, Sydney Hospital (the first Hospital of the colony in Australia), where I had trained, was closing down. The Government had built a brand new Hospital in Western Sydney (Westmead Hospital) where I started my residency and was initially being groomed to be general physician.

During my internship at Westmead Hospital I was rotated to a term in radiation oncology under Professor Allan Langlands who was Scottish trained from the



Figure 1 Professor John Boyages

Edinburgh Royal Infirmary (Scotland, UK). Professor Langlands was the founding Professor at Westmead. He was a visionary leader and was really pushing breast conservation in Australia at the time, as many patients were getting mastectomies. In the end I decided to apply for radiotherapy instead of becoming a general physician. Everybody thought I had gone mad at the time. I became very interested in breast cancer research and I wrote many papers with him.

How did your research interests evolve once you finished your residency?

The same week I had finished my final radiation oncology exams (and thought my study was over!), I was invited to take up a Fellowship at Harvard University under the supervision of Professor Jay Harris, who was - and still is - one of the leading breast cancer oncologists in the world. Of course, I then had to sit the American Board entrance exams, so my study was not quite over. The fellowship involved attendance at multidisciplinary breast cancer clinics at the Dana Faber Cancer Institute, intensive research, a three-month clinical term at the Beth Israel Hospital, and attendance at weekly breast cancer tumour board meetings.

Your dream was to create a multi-disciplinary, specialist team integrating screening, diagnosis, treatment and follow-up all in one location. Now it has been achieved. What inspired you to build BCI?

It was during this time in the USA that really opened my eyes to what we could achieve for patients, which I hoped to bring back to Australia. I worked with an amazing team, including Drs Jay Harris, Susan Love, Craig Henderson, Dan Hayes, Jim Connolly, Stuart Schnitt, Abe Recht and many others. We would see patients together who had been referred from all over the world. At the end of my fellowship, I was offered an assistant Professorship at Boston, but decided to return to Australia in 1989 to take up the position of Staff Specialist in radiation oncology back at Westmead Hospital in Australia.

The design of the radiotherapy unit back at Westmead was confronting: patients with breast cancer were seen in tiny rooms, and were weighed in public; so there were things I just didn't like back in those days. I spent most of my career trying to improve the conditions for patients and would eventually go on to obtain the funding and design the Breast Cancer Institute ("BCI") not only from a physical perspective but from a "one-stop-shop", patient-centred service perspective.

Nominated as one of four finalists for "NSW Australian of the Year 2013", you and your team have contributed in reducing the mortality rate for breast cancer in Western Sydney by almost 35%. How was this big improvement achieved? What changes have you witnessed in the diagnosis and treatment in breast cancer in the last two decades?

In 1990, I very quickly started the Western Areas Breast Group (WABG) and invited doctors to come together for monthly multidisciplinary team meetings. Back then,

nearly 400 patients with breast were treated by 70 different surgeons - an average of 6 patients each - and the care was totally fragmented. For example, if a woman saw a surgeon who operated on five patients a year, their mastectomy rate was about 65%; however if you saw a surgeon who operated on more than 10 patients a year the rate was more like 35%. It was my passion to change this particularly after seeing what could be done in the USA.

In 1993, I decided to apply to be the founding director of breast screening in the West of Sydney. I remember one surgeon saying it was an "outrage" that a radiation oncologist could run a screening program! From there I began an accreditation process to link surgeons to our screening program, and also implemented a general practitioner (GP) education program. It was a difficult time, as everyone thought that their income would be affected by the development of specialist breast units. I decided to take an inclusive approach, and use "education" rather than "legislation" to link as many surgeons, radiologists and allied health staff as possible. Breast care nurses were unheard of at the time but were beginning to evolve in the US. We built 6 screening units, two assessment centres and two mobile units and expanded to shopping centre locations. I learnt a lot from the screening program in Vancouver.

From there, we started training specialists of the future, and so we began a Fellowships program. We have trained over 40 fellows since the BCI was formed in 1995. So the basic approach is: Strong leadership, a governance structure, budget control, bring teams together, fund raise and develop education and information strategies for patients and doctors. It wasn't done on our own, two cancer centres were built in the region that extended over a large area with a high proportion of non-English speaking background (<http://profile.id.com.au/wsroc/home>).

Compared with other hospitals, how does BCI benefit breast cancer patients?

The BCI, and my new organisation the Macquarie University Cancer Institute, has multiple facets that benefit patients with breast cancer. All patients are seen pre-operatively by a multidisciplinary team and discussed with the disciplines of surgery, pathology, radiation oncology, medical oncology, genetics and breast care nursing. We have 8 clinic rooms, 2 digital mammography units, 4 ultrasound machines, and space for research and education. Equipment is shared for patients being recalled after an abnormal mammogram and patients having follow-up mammograms after breast cancer treatment. Our eight,



Figure 2 The first of eight “BCI Sunflower Clinics” at Myer Parramatta

BCI “Sunflower Clinics” (Figure 2) (4 screening units in Myer lingerie department, and 4 in community hospitals) are linked by the internet to a radiology reading centre. We have three MDT teams that assess new and post-operative patients, a benign clinic and a family history service. We have an on-site physiotherapy, allied health and nutrition and psychology clinic. For more information see: www.bci.org.au or www.mqci.org.au.

Is BCI duplicable for other countries? What could breast cancer specialists learn from BCI?

We receive a lot of visitors from across the world. There are elements from the many breast centres I have visited or worked at in the genetic makeup of the BCI. I have seen elements of it duplicated in the UK and elsewhere, particularly when our international fellows return home. A lot of the model depends on different funding and governance mechanisms in different countries.

Is there any story to be shared with us, such as the particular challenges, setbacks, or successes that you’ve encountered along the way of establishing BCI?

Successes: developing a statewide directory of breast cancer specialists where patients could find out about their doctors’ expertise, delivering national live broadcasts to rural patients, and implementing digital screening units in the lingerie departments of the Myer department store. Setbacks- yes-with success always comes failure. My biggest set-back was the resistance I received initially from the radiology department and the breast screening unit who

didn’t want to move their service to our one-stop-shop service and share their equipment. We finally got there but it took many years and more grey hair! I see lots of patients with small screen detected cancers. One patient, yesterday, said, “I stopped going to screening when the mammogram unit was on the fourth floor at a public hospital (its old location) and there was no parking. I am so thankful for the BCI sunflower clinic in the shopping centre-easy parking, quick and friendly staff.”

BreastScreen Sydney West was one of the first breast screening service in Australia to be able to transmit digital images from all screening sites to its central image reading centre, seconds after a woman finished her mammogram.

How has this service changed the diagnosis of breast cancer? What is the uniqueness of such a screening service?

I was invited back to direct the screening unit in 2007 having left it in 1995 when I established the BCI. We merged it into one comprehensive screening, diagnosis and treatment program underpinned by research and education. We built 8 digital screening units in 8 months-it was a phenomenal achievement and could not have been achieved without the enormous efforts of the BCI staff, GE health care, Myer and the Area Health Service. We reduced the time of reading the films from over 20 days to less than seven. Patients were waiting up to 6 weeks from their first mammogram to be assessed if an abnormality was picked up. We managed to reduce this down to 2 weeks. We introduced strict quality control processes on all patients who underwent a core biopsy and then linked all patients with a cancer diagnosis to our treatment teams facilitated by our breast care nurses. Making screening more accessible in shopping centres certainly makes the service more accessible for women. I always say, that by the time the women reached the escalator, her X-rays were sent through the internet back to home base ready to be read at Westmead Hospital. I had finally achieved my vision to link the whole thing together. We finally got there by 2008.

Can breast screening service in BreastScreen Sydney West be introduced to the world?

Yes it can. It’s quite simple once you understand that you need a leader, a driver, you need all traditional departments to give a little-surgery, radiation, chemotherapy, breast screening and for everyone to understand that the focus has to be on the patient and not their own “turf”.

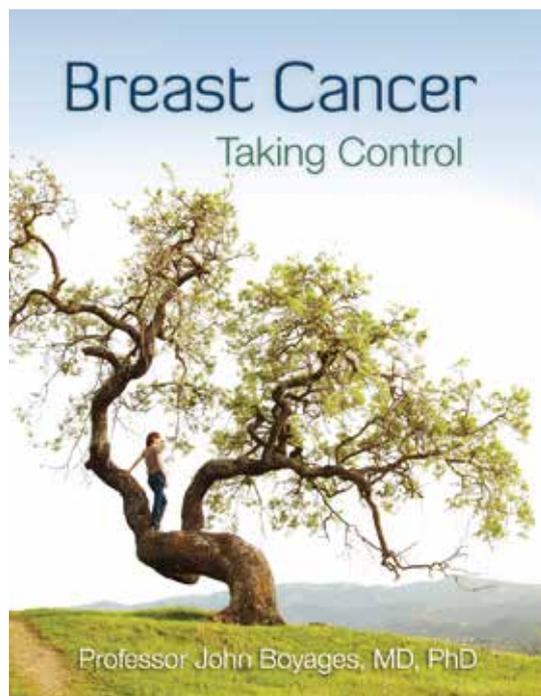


Figure 3 *Breast Cancer: Taking Control*

What drives you to step outside of Westmead for Macquarie University?

I am an “architect” in many ways. I enjoy designing and building new programs. After 17 years as the director of the BCI, and after finally integrating the screening program as an important step of the breast cancer treatment program, having 70 excellent staff, multiple centres and exceptional clinicians and a healthy budget, it was time to move on. I’m very proud of the BCI, but after 18 years the “parent” must separate from the “young adult” for the next generation to take over. I was recently given an Emeritus Professorship at Westmead Hospital and still very much enjoy research and teaching at Westmead.

The technology at Macquarie University Hospital here is mind-blowing. We installed the first contrast mammogram in Australia and our patients have access to PET scanning with an onsite Cyclotron. We have also introduced a new

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technology called VMAT: Volumetric assistance technology (VMAT) which is particularly useful for patients with left sided breast cancer or with breast implants receiving post-mastectomy radiation. It’s a technique that delivers a high dose where the cancer is and a lower dose around the normal tissue. It’s like painting-on the radiotherapy. The hospital is a dynamic, can do place and it is centered in a expert and dynamic, agile University, nearly 50-years old with expert and dynamic academic staff and researchers. We have started an Advanced Lymphoedema Assessment Clinic, a multidisciplinary team of experts who assess and treat patients with intractable lymphoedema. We are testing liposuction and lymph-node transplant.

What inspired you to write your book - Breast Cancer: Taking Control (Figure 3)?

One evening, I took a phone call from a Doctor whose wife had been diagnosed with breast cancer. She was pregnant and had already had a mastectomy: she was told she needed a caesarian section at 34 weeks and had not yet seen an oncologist. I was so angry. If doctors couldn’t get the proper treatment for their wives, then what hope did the general community have? So from that weekend I started writing the book: that was the trigger point for me.

Then I kept writing. I enjoy writing - I use a lot of gardening analogies in my consultations and my book. I’ve nearly finished another book for patients titled ‘*DCIS of the Breast: Taking Control*’. My DVD, *Clinical Breast Examination: Taking Control* is aimed at teaching health professionals about how to take a history, examine the breast, where to look for recurrences and how perform the triple test. I find that most doctors I meet during their training struggle doing a proper breast examination. See the book’s web site for more details: www.breastcancertakingcontrol.com.au.

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