

A scientist without borders

→ Janet Fricker

A biostatistician with medical training, **Hélène Sancho-Garnier** helped drive the shift towards evidence-based clinical practice in the '60s and '70s. Stepping nimbly over traditional boundaries, she went on to apply this approach to cancer registries, screening, and now prevention and the ultimate challenge of how to communicate health messages to stropky teenagers.

In addition to her many achievements in the fields of oncology, biostatistics and public health, Hélène Sancho-Garnier has the distinction of being born on September 3rd 1939 – the day World War Two broke out. Her career has spanned the initiation of clinical trials in France, the launch of cancer registries and the development of screening programmes. Throughout this disparate work runs a common theme – the need to introduce evidence-based practices into all aspects of medicine. Today the full force of her fighting spirit is focussed on Epidaure, the education centre for cancer prevention in Montpellier, where she is taking on the challenge of finding strategies for communicating to France's young people, and for evaluating the proposed strategies.

Having grown up on the left bank of the Seine, Sancho-Garnier remains at heart a Parisian, but with an Iberian twist from her marriage to Spaniard Isabelo Sancho-Lopez. Early years were inevitably dominated by the war. Just three days after Hélène's birth, her father, the proprietor of a bespoke shirt making business in the Boulevard St Germain, went to the front. He would be away from his young family for three years after being taken prisoner. Two uncles fought for the French resistance – one was shot and

the other died in the gas chambers. Her mother was taken for questioning by the Gestapo after a search revealed a typewriter on the shop's premises. Happily it was broken and they were unable to prove that she had used it to forge resistance documents.

Sancho-Garnier has few memories of occupied Paris – the knowledge came later when her mother told the teenage Hélène and her older brother Gérard and younger sister Michèle the story of her war. She recalls a happy, carefree childhood. "They called me Papillon because I danced along the boulevards, jumping over the stones. I was a *garçon manqué*, spending my time ice skating, swimming and playing tennis."

Academic studies came easily to her. "The decision to study medicine was greatly influenced by the area of Paris in which we lived. Doctors came to the shop and my school friends had fathers who were doctors, so it seemed the natural thing to do. I longed for adventure and had romantic visions of working in Africa."

In 1959 Sancho-Garnier enrolled in medical school. Student days were dominated by politics, organising demonstrations against the brutal suppression of the Algerian independence movement. She is clearly a woman who does nothing by halves. Politics was so all-consuming that it threatened to



sabotage her medical career, as she could not find the time to sit the examinations (*internat*) required for French doctors to work as clinicians in hospitals.

Pathology was one option she was qualified to take that would enable her to work in a hospital, so she decided to move to the Gustave Roussy Institute, the biggest cancer centre in Paris, to complete her studies. Here she buckled down, sitting her hospital examinations, and becoming interested in skin cancer. She divided her time between seeing patients in the morning and working in the lab in the afternoon.

A career defining moment was a meeting with Evelyne Eschwege, a young scientist organising the

first ever clinical trial in France, randomising babies with angiomas to receive radiotherapy or no treatment. When Eschwege went on maternity leave she asked Sancho-Garnier to mind her project. The study, which showed angiomas resolved just four months faster with treatment than without, led to the publication of Sancho-Garnier's first paper, and brought her to the attention of Daniel Schwartz, who was in the process of setting up the first medical biostatistics school in France, and was head of a research unit at INSERM (France's National Institute of Health and Medical Research). In 1964, Schwartz recruited her to his research unit. Part of the

attraction of the career change was her competitive relationship with her brother Gérard, now a professor of physics, who had always ribbed her about medicine requiring no more than good memory skills. “I wanted to prove to him that I was perfectly capable of doing some kind of maths,” she says.

In her new role, Sancho-Garnier divided her time between clinical work in cancer dermatology at the Gustave Roussy and providing biostatistical support to a growing number of oncology trials and clinical research projects, driven by Robert Flamant, Schwartz’s first medical *élève* and head of the first biostatistical unit at the Gustave Roussy. She also developed an interest in prognostic evaluation – looking at how best to adapt treatments to the individual characteristics of patients and their tumours – and in epidemiological studies of the causes of cancer.

It was an extraordinarily productive period. She inevitably appeared as second author on a great many papers, and also wrote her own papers taking an overview of the concept of clinical trials. She reviewed issues such as knowledge acquisition from randomised trials and their role in establishing treatment policies. Sancho-Garnier can take some credit for placing the concept of clinical trials on the medical agenda. “Being medically trained, it was easier for me to ask the clinicians to introduce good methodology into their clinical trials. I understood the clinical perspective and ethical difficulties.”

At the same time as launching her career, Sancho-Garnier was juggling further training (taking degrees in both biostatistics and head and neck cancer) and raising three children. In 1963 she had married Isabelo Sancho-Lopez, a Spaniard working for the Organisation for Economic Co-operation and Development in Paris. The couple had met on a blind date organised by her sister, who thought she was over-

working and needed a bit of light relief. Sancho-Lopez’s family came from Toledo, but had been forced into exile in France and Brazil after fighting Franco in the Civil War. The couple soon had three children – Marie Christine born 1964, Isabel born 1967 and Xavier born 1969. Sancho-Garnier acknowledges the unswerving support of her maternal grandmother, Marie, then a vigorous 80-year-old, who kept the household going during this busy period.

She and her husband divorced in 1976, but she still thinks that, overall, marriage was a positive experience. “We had three wonderful children together and he taught me the Spanish language and culture.” Sancho-Garnier never remarried. “With three children it would have been difficult to find someone, and I wasn’t looking,” she says, adding with Gallic candour that life has not been without its *divertissements*.

A CAREER WOMAN

With the marriage over, she threw herself wholeheartedly into her career. “I have a big capacity for work. Early on I learnt that for women to have successful careers they can’t afford to spread themselves too thin. Many women prefer to have all sorts of other things than work in their lives, then it’s to be expected that they are overtaken by male colleagues.”

Designed to inspire. Sancho-Garnier with her team at the Epidaure cancer prevention centre in Montpellier (photomontage). The bold architecture provides a stimulating setting for the school children who visit Epidaure’s interactive health education centre



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An internationalist. Sancho-Garnier has always sought to extend her contribution beyond the borders of France. She is pictured (right) at an oncology congress in Cairo in the mid-1970s, while she was still based at the Gustave Roussy Institute. The picture below was taken in 2007 at a screening training session at the National Cancer Institute of Uruguay, which she helped organise in her role as the UICC strategic lead for prevention and screening



The hard work paid off in 1988 when she was appointed head of the biostatistical department of the Gustave Roussy, after Flamant was promoted to director of the Institute. With success came opportunities to play a role on France's national oncology stage. Highlights included involvement in the National Commission for Cancer, with Yves Cachin as chairman, which recognised for the first time the importance of population-based cancer registries.

"Cancer registries are vitally important to measure the burden of different cancers. They help resource planning, flagging up where we need to do epidemiological research, and can be a way of evaluating prevention initiatives."

The commission proved a challenge, as it would have been hugely expensive to produce a national registry. "We've solved this problem by having coverage of 10%–15% of the territory with separate registries, which can be used to estimate what's happening in the rest of the country."

Screening became an area of expertise. After landmark trials from Sweden showed that breast screening results in 30% fewer deaths, Sancho-

Garnier was recruited to a healthcare commission, headed by Maurice Tubiana, set up to organise the first large-scale breast screening programmes in France. The commission discovered that a majority of the mammography machines in use were obsolete and set about lobbying the Department of Health to lay down mandatory minimum standards and quality control. This was probably the biggest benefit to come out of organising these large-scale programmes, as opportunistic screening was already being used by 40% of the population.

Quality assurance is essential, she says, to keep false-positives and false-negatives to a minimum. As mammography uses ionising radiation, it is also important to ensure the equipment is working correctly, the proper techniques are used and regular testing doesn't start too early and isn't done too frequently. She is uneasy about the screening that is being undertaken in younger women with genetic susceptibilities to breast cancer "The gland tissue is more sensitive to ionising radiation and, because of the density of the breast, mammography is less sensible as it leads to more false-negatives," she says.

Particular issues arise in developing countries, where mammography machines are of dubious quality and inadequate treatment infrastructure is in place. "If you don't have good structures for diagnosis and care, you're doing more harm than good," she says. "Where the extent and quality of the

infrastructure are insufficient, it is important to implement adequate structures and professional training before organising any screening programme.”

FROM SCREENING TO PREVENTION

It was Sancho-Garnier's expertise in screening that helped her to make the career transition from biostatistics to public health. In 1991 she was appointed head of INSERM's cancer epidemiological research unit, where she managed a department of more than 40 people in addition to her work at the Gustave Roussy. To her disappointment, the atmosphere was not particularly easy, and she tired of the internecine fighting between her staff. With her children having left home, she felt weary and ready for a change.

A chance remark at a dinner to Henri Pujol, creator of the Epidaure cancer prevention centre, about how much she liked the city of Montpellier, eventually resulted in a job offer to head the Epidaure (part of the regional cancer centre), together with a chair in Public Health at the University of Montpellier. “I loved Montpellier's architecture and climate, and I felt its proximity to the Spanish border combined my French and acquired Spanish culture,” she says.

Today she remains based at the Epidaure, an education and training centre housed in an innovative building resembling a space shuttle. “The building was designed to inspire the imagination and show children there are no limits,” she says.

Each day parties of school children visit to increase their understanding of health prevention and hopefully change their behaviour. One of the highlights of the two-hour tour is a smoking machine that graphically illustrates how tar accumulates in the lungs. There is also an interactive film where you can change the lives of actors according to the interventions they take. While the activities are principally for children in the Languedoc-Roussillon region, the centre has produced tool kits and training to enable teachers across France to introduce health education messages throughout the French national curriculum. Help is on hand for subjects as diverse as History, Maths, Science, Physical Education, French and English. “Hearing the same messages across all their lessons helps to consolidate the children's health behaviour,” she explains.

Teenagers pose particular challenges for the unit. “They're always argumentative. If you say it's red, they'll say no it's black. They live for the moment, and don't care in the least about future health risks.” With such formidable challenges, might it not be easier to just leave them well alone until they grow up and become more receptive to messages?

This, says Sancho-Garnier, would be totally irresponsible. “It's a particularly dangerous time, when young people are at risk from alcohol damage and becoming addicted to tobacco and other drugs. They're starting their sexual lives and risk



Kids! Marie-Christine, Isabel and Xavier, demonstrating the teenage capacity to live for the moment. Sancho-Garnier brings a mother's experience to the task of developing strategies for communicating health messages to this difficult age-group

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“I want to teach my grandchildren the importance of being critical... I want them to ask for the evidence”

exposure to HPV and HIV. You have to try and convince them to take the best possible care of themselves.”

The best strategy for getting through to teenagers that Epidaure has used is the peer mentor technique, where younger teenagers are paired with older teenagers who help show them appropriate behaviour. They are also developing tools to show teenagers how they are manipulated by various publicity techniques, particularly from the tobacco, food and alcohol industries.

Coming from her background in biostatistics, Sancho-Garnier took time to appreciate the full dimensions of education. Her current ambition is to incorporate scientific methods into prevention.

“In medicine I was one of the first people to introduce an evidence base for clinicians. Now I’m working with educators I want to incorporate the same scientific rigour and introduce ways of properly evaluating the effectiveness of prevention and the full impact of our contact with children,” she says.

STILL AN INTERNATIONALIST

Since 1998, Sancho-Garnier has served as the French representative at the International Union Against Cancer (UICC). It is a venture that is particularly close to her heart, as she is keen to improve the situation of people with cancer in developing countries, focussing on French- and Spanish-speaking regions.

In 2002 she became the UICC’s strategic leader for prevention and early detection. Among her many achievements is the publication of a handbook reviewing the evidence for different cancer prevention strategies, with editions for Europe, Latin America and South Asia. “The idea is to help governments to prioritise the interventions that are important, and the situation varies in different areas,” she says, adding that they are currently



Critical young minds. Subjected to all the usual manipulative messages from the tobacco, food and drinks industries, Sancho-Garnier’s grandchildren are valuable and willing guinea pigs for testing prevention strategies

preparing a handbook for the Mediterranean region.

Like most successful women, Sancho-Garnier’s career has not been without sacrifices. “My children now tell me that I wasn’t home enough when they were young. I have no big regrets. To function as a mother I needed to feel fulfilled in my career.”

The children, one senses, rebelled by not following traditional academic paths. Marie Christine was an airhostess before giving up work to care for her family, Isabel works as a marketing manager in Madrid, while Xavier works in the construction industry. Her six grandchildren offer the opportunity for reinvention and the healing of past differences. Ranging in age between one and 13, they also provide willing guinea pigs to road-test her health education messages. “Above all I want to teach my grandchildren the importance of being critical, and not just accepting the things they are told. I want them to ask for the evidence,” she says.

Retirement is not a subject she cares to dwell on, although she is amused that for once this is an area where being a mother of three works in her favour. “In France, as a university professor who has had three or more children, you can work for an extra year,” she says. “I don’t want to retire, there’s still lots to achieve and I really do want to get further in providing an evidence base for primary prevention.”