

**INQUIRY INTO CURRENT AND FUTURE PROVISION OF
HEALTH SERVICES IN THE SOUTH-WEST SYDNEY
GROWTH REGION**

Organisation: UNSW Sydney

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Inquiry into the current and future provision of health services in the South-West Growth Region

Introduction

In 1989 UNSW Sydney was the first major university to establish a presence in south western Sydney and the first to develop much needed teaching and research facilities on the campus of Liverpool Hospital. During this period the University played a crucial role in the transformation of the facilities at Liverpool and Bankstown Hospitals from district hospitals to major tertiary teaching facilities.

At present, staff from the UNSW South Western Sydney Clinical School (SWSCS) and the Schools of Psychiatry, Public Health and Community Medicine, and Women's and Children's Health are located across the south western Sydney campuses at Liverpool, Campbelltown, Fairfield and Bankstown-Lidcombe Hospitals and the Ingham Institute for Applied Medical Research.

UNSW is the only Group of 8 (Go8) university with a dominant presence in the south west of Sydney. UNSW's research efforts in this region have attracted more than \$40m a year in research funding directly relevant to the health of the population and resulted in more than 500 publications describing important research findings per year.

The south west of Sydney is a very important part of the UNSW community, not only in terms of the training and research opportunities but also in terms of a desire by our staff, researchers and students to partner with and support the South Western Sydney Local Health District (SWSLHD), in its commitment to improve health outcomes for the people of the region.

UNSW is committed to producing the next generations of highly skilled doctors through its internationally recognised Medicine undergraduate program. In addition, UNSW continues to provide the best possible training for future researchers through several higher degree research programs supervised by UNSW staff and clinicians in south western Sydney. These training programs are crucial in building capacity in health maintenance and health care in this very large and growing part of Sydney.

UNSW works in very close partnership with a broad range of stakeholders in the region, most notably the SWSLHD, but also the South Western Sydney Primary Health Network, our partners at Western Sydney and Wollongong Universities, the Ingham Institute for Applied Medical Research and the local community.

As further evidence of this partnership, UNSW's Senior Vice Dean for Clinical Affairs has established a base of operations at Liverpool Hospital. This local presence from a member of the UNSW Medicine Executive has allowed for deeper engagement particularly with SWSLHD since it was established. The University's Faculty of Medicine remains central to broadening the engagement of UNSW in the south west.

UNSW supports and participates in a range of joint planning programs with SWSLHD including workforce planning and training and capacity building for staff in terms of their teaching and research skills. The University is represented on several key local committees including the Teaching and Research Committee of the SWSLHD Board, a joint Clinical Academic Council and various research fora.

The University believes that this strong and collaborative partnership between SWSLHD and UNSW has contributed to improvements in healthcare and health professional training, and therefore to the health of the population, in south western Sydney. The two organisations have made significant investments in both clinical and training facilities and plan to continue to do so.

The University also acknowledges that the rapid population growth in South West Sydney means that ongoing investment in health services in the south west are required and recognises and supports the significant efforts of NSW Health and SWSLHD to address this need. An example of this is the significant capital investment across south western Sydney in recent years.

UNSW also recognises the value of partnerships in leveraging additional investment and will work closely with SWSLHD to identify and facilitate further investment where opportunities become available. We will also partner with SWSLHD to innovate in the delivery of healthcare, in order to deliver better health outcomes for the population. The impact of COVID-19 on both health services and the tertiary education sector have further highlighted the importance of these mutually beneficial partnerships.

Terms of Reference

UNSW Sydney responses to relevant items in the terms of reference are as follows:

(a) an analysis of the planning systems and projections used by NSW Health in making provision for health services to meet the needs of population growth and new suburbs in the South-West Sydney Growth Region

UNSW understands that SWSLHD utilises standard Department of Planning, Industry and Environment (DPIE) population projections along with an agreed statewide methodology to plan for clinical activity as part of its strategic planning process. The University notes that SWSLHD has forecast for a significant

growth in future service requirements as part of its plans and UNSW has been consulted by the District in a range of planning discussions.

Based on a range of published data, it is clear that the south west region faces a number of important demographic issues, and we encourage the NSW Government to ensure that future planning and budget allocations continue to take into account factors such as:

- the significant population growth rate (10.5% between 2011 and 2016);
- the high proportion of children and young adults (37.1% compared with the NSW average of 31.1%);
- the high birth rate (14.36 births per 1,000 population) compared with 12.51 across NSW;
- the high proportion of one-parent families (15.8% compared with 12% across NSW);
- labour force participation rates (56.7%) significantly lower than Northern Sydney (64.8%), Sydney (64.7%) and South Eastern Sydney (63.1%);
- the highest rates of social disadvantage in Sydney;
- significantly lower household incomes, with more than half (51.1%) of South West Sydney households reporting income of less than \$999 a week compared with 28.3% in Northern Sydney and 29.8% in Sydney;
- up to 29% of children in south west Sydney start school without the developmental skills they need to flourish compared to the national average of 19%; and
- very high rates of humanitarian settlement, with 50.5% of humanitarian settlers in the first three months of 2018 settling in south western Sydney.

These factors contribute to an increase in demand, and complexity of patients, for health services in south west Sydney and can be expected to contribute to health inequity. Strategies to address these factors must be incorporated into decisions regarding resource prioritisation and highlight the importance of considering the size and type of health workforce that is required.

UNSW is working with the LHD to align strategic priorities in a number of areas and to support the District as it develops strategies to deliver both patient and population-centred care. We are also working with the District to consider innovative approaches to healthcare delivery, and the nature of the workforce that may be required to implement these approaches.

In line with projected workforce requirements, UNSW has also forecast the training needs for medical students within the LHD. Currently approximately 420 UNSW medical undergraduate students undertake placements in south western Sydney each year, the largest of any UNSW clinical school and the largest of any university in the south west. Clinical services in south western Sydney support approximately 105,000 student hours of teaching to these students annually.

With significant capital investment in SWSLHD and expansion of the bed base as a result of current and planned redevelopments at Campbelltown, Liverpool and Bankstown Hospitals, UNSW envisages a significant increase in demand for placements across the growth region, with up to 900 places required

in coming decades. UNSW notes that actual student placement numbers are determined by Commonwealth Government policy.

UNSW has also seen significant growth in the number of postgraduate students undertaking higher degrees in the region. A fourfold increase over ten years has resulted in 70 students enrolling in 2020. This, along with an average of approximately 35 medical students undertaking Independent Learning Projects (ILPs) and Honours programs each year, creates a strong platform for south western Sydney students to assist in increasing future research workforce capacity. We forecast that these numbers will also increase with the planned expansion of clinical services across south western Sydney.

UNSW is also developing a major strategy for further engagement in south western Sydney with an aim to establish Liverpool as a Hub for engagement with the Greater West. This hub would coordinate emerging opportunities and collaborations across UNSW including the existing engagement with the Faculty of Medicine, but will also focus on new opportunities such as:

- attracting satellite groups of existing, globally recognised, leading research enterprises such as the Kirby Institute, National Drug and Alcohol Research Centre (NDARC), Centre for Big Data Research in Health (CBDRH) and the George Institute to establish permanent presences in south west Sydney;
- addressing opportunities that arise out of the Aerotropolis and Sydney Science Park;
- expanding leadership in robotics, imaging technologies and e-Health in cooperation with LIP partners;
- utilising the UNSW Medicine Strategic Plan to address future workforce needs and identify new training programs for changes in the future health workforce;
- expanding existing UNSW programs such as the Bachelor of Exercise Physiology program to south western Sydney; and
- working with UNSW Engineering on the Frontier Technologies Clinical Academic Group under the Sydney Partnership for Health, Education, Research and Enterprise (SPHERE) umbrella.

(b) an analysis of capital and health services expenditure in the South-West Sydney Growth Region in comparison to population growth since 2011

UNSW notes that NSW Health has committed to a significant investment in capital infrastructure in south western Sydney over the last decade including redevelopments at Liverpool, Campbelltown and Bowral Hospitals. The University is also closely involved with the current and planned redevelopments as part of the Liverpool Health and Academic Precinct, the Liverpool Innovation Precinct, the Bankstown Hospital Redevelopment and the Campbelltown Health and Education Precinct. These significant projects will assist the District to meet recent growth and future population demands of south western Sydney.

The University is also aware that the District has advocated for, and been successful in, obtaining increased recurrent funding over recent years. Based on publicly available information it would appear that the increase in the LHD budget over the period of interest to the Inquiry has exceeded population growth for the same period, albeit from a lower base compared with some other Districts. UNSW will continue to support SWSLHD in its efforts to increase the overall budget of the District in order to address the health needs of its relatively disadvantaged population.

UNSW has also made a substantial contribution to the capital and infrastructure development in the south west in partnership with SWSLHD and the Ingham Institute.

UNSW was a key partner, along with SWSLHD and Western Sydney University, in the funding application for \$46m for the Ingham Institute for Applied Medical Research. In addition, UNSW also contributed capital funding towards the initial project. The Ingham Institute has become a key catalyst for attracting high quality clinical and research staff to the District.

In addition to this initial investment in the Institute, UNSW has also made a number of investments in research infrastructure for the Institute including:

- the IsoFlux Circulating Tumour Cell (CTC) Isolation Platform;
- the State-of-art 3D Printing Platform (Rastrum);
- QuantStudio 12K Flex Real-Time PCR;
- the Correlative Microscopy Facility;
- Flow Cytometry/Cell Sorter;
- an Ultracentrifugation System;
- Laboratory Support (people); and
- the commissioning of Level 5 of the Institute.

UNSW has also committed to funding several research support positions in both wet and dry laboratory environments and provides support to research groups based in south western Sydney to the value of approximately \$3m a year. UNSW academics, including Scientia Professor Michael Barton OAM, have also played a key role in establishing the ground-breaking MRI-Linac project at Liverpool Hospital.

The UNSW-SWSLHD partnership has also resulted in construction of the \$10m state-of-the-art Clinical Skills and Simulation Centre at Liverpool Hospital, incorporating simulated learning environments, simulated operating theatres and trauma and resuscitation facilities.

All these facilities include audio-visual capacity to utilise high-fidelity mannequins in the space and to record or broadcast the sessions to other spaces or across the UNSW or SWSLHD networks. This significant investment was funded through a range of external funds which UNSW secured for the project.

To the above, UNSW has added more than \$500,000 in recent years to invest in further upgrading teaching resources in south western Sydney including:

- Anatomage 5 – featuring full-body digital cadavers for anatomy training;
- SimMan 3G and ALS high fidelity mannequins for realistic clinical scenario training; and
- upgrades to the Clinical Skills and Simulation Centre to house the DV Mimic robotic surgical trainer.

Notably, UNSW also supports the Clinical Skills and Simulation Centre by employing personnel to support teaching of both students and staff within SWSLHD.

Outside of the construction of research and teaching facilities in south western Sydney, UNSW has also made several strategic investments in IT infrastructure including \$3.7m to:

- upgrade the Liverpool Hospital auditorium;
- rollout the UNSW network to each of the south western Sydney hospital sites; and
- establish an 18-room videoconference network.

These investments, made in close coordination with SWSLHD, make the District a highly attractive training and working environment and increase the opportunities for the LHD to attract the best and brightest of students and staff to study and work in south western Sydney.

UNSW is a partner in the Liverpool Innovation Precinct (LIP), centred on Liverpool Hospital, which aims to build on the \$740m investment announced by the NSW Government in 2018 to enhance clinical services at the site. The aim of the Precinct is to transform how the city of Liverpool and the hospital function and to build on its profile as an employer and job generator.

The University is also a partner in the Campbelltown Health and Education Precinct (CHEP) along with the LHD and other local stakeholders. This Precinct aims to develop significant health and educational infrastructure in the Macarthur region centred around Campbelltown Hospital.

As part of the current redevelopment of Liverpool Hospital, UNSW is working closely with Health Infrastructure and the Liverpool Health and Academic Precinct (LHAP) to develop the education facilities at the Hospital. This includes a coordinated approach to the redevelopment of both the general education and conference space along with a new Clinical Skills and Simulation Centre that will cater for the future training needs of south western Sydney.

(c) the need for and feasibility of a future hospital located in the South-West Sydney Growth Region to service the growing population as part of the Aerotropolis land use plan

UNSW is unable to comment on specific plans for the new hospital locations in south western Sydney. However, the University enthusiastically supports recent efforts to develop models of integrated care such as that at Oran Park. We note that it is important to balance geographical accessibility with the

scale generated in suitably sized major tertiary hospitals and believe that consideration should be given to further investment in existing facilities rather than entirely new hospitals at this stage.

UNSW also endorses the significant investment that NSW Health has announced for current and future developments at Campbelltown, Liverpool and Bankstown-Lidcombe Hospitals. These major redevelopments and new facilities will provide much-needed additional health resources to the growing communities in south western Sydney.

(d) an investigation into the availability and shortfall of mental, community and allied health services in the South-West Sydney Growth Region

UNSW is aware of several strategies that the LHD has been developing to enhance mental, community and allied health services within its catchment area. We support these plans and will contribute to these strategies, at all times aiming to add value.

The University has several partnerships with the SWSLHD and the South Western Sydney Primary Health Network (SWSPHN). With the support of the UNSW Centre for Primary Health Care and Equity (CPHCE), a primary and integrated care unit has been established with a focus on shared primary care for patients with severe mental illness. CPHCE has also worked in partnership with SWSPHN to develop innovative approaches to preventive care in general practice especially focused on obesity and chronic conditions in disadvantaged and culturally and linguistically diverse people.

UNSW, with the support of SWSLHD, also operates a significant Academic Mental Health Unit based at Liverpool Hospital. This Unit comprises the Psychiatry Research and Teaching Unit; Infant, Child and Adolescent Mental Health Services and Schizophrenia Research Unit and has major research programs investigating the mental health of young people and of refugees in south western Sydney.

The Unit is led by UNSW Professor Valsa Eapen who has expertise in neurodevelopmental disorders, autism, Tourette's Syndrome and behavioural disorders in children. Professor Eapen also leads the BestSTART Academic Unit for SWSLHD.

Another member of this Unit, UNSW Professor Philip Ward conducts research and clinical work in brain plasticity in neuropsychiatry, efficacy of computerised cognitive remediation training in schizophrenia, and lifestyle interventions to improve physical and mental health outcomes in first episode psychosis and established severe mental illness.

Other UNSW Psychiatry research projects include work with on interpersonal violence in south western Sydney and several programs addressing the mental health of refugees.

UNSW is participating in a current SWSLHD review of mental health research in south western Sydney with an aim at identifying areas for future focus and investment if additional resources were to become available.

In addition, the Psycho-oncology Group, headed up by UNSW Professor Afaf Girgis has a proven track record of working with cancer survivors on the psychosocial impact of cancer on both survivors and their carers.

As part of the Faculty of Medicine's current strategic planning process, UNSW Medicine aims to expand the training programs the University offers to the future health workforce in collaboration with SWSLHD and our other partners. This strategic priority aims to ensure UNSW can respond to changes in models of care, disciplines and delivery modalities as health services evolve.

(e) a comparison of the per capita operational expenditure allocated for the health services and hospitals between the South-West Sydney Growth Region and other Local Health Districts across metropolitan Sydney since 2011

UNSW is aware of the funding model for NSW Local Health Districts, consisting of Activity Based Funding (ABF) and block funding. UNSW would support NSW Health efforts to ensure that the Adjusted Relative Utilisation component of the current funding methodology adequately addresses health inequity across the state.

Given the relatively high levels of ethnic diversity and socioeconomic disadvantage in south western Sydney, along with relatively low rates of private health insurance and services, it is essential that these equity issues are addressed through the funding mechanisms for the State's health services.

While the University acknowledges that this funding model does not provide funds on a per capita basis and many highly specialised models of care are delivered in quaternary services, data published by WESTIR suggest that there are variations between funding for services across NSW on a population basis. UNSW supports efforts by NSW Health to utilise growth funding to address these historic variations, and support service development in areas of disadvantage.

(f) a comparison of the staffing allocations at health services and hospitals between the South-West Sydney Growth Region and other local health districts across metropolitan Sydney since 2011

The University is aware, based on publicly available data from NSW Health, that there has been a significant increase in the number of staff employed by SWSLHD in the last four years.

The University is not readily in a position to make comment on direct comparisons of staffing levels between individual institutions but notes that relative levels of disadvantage, high levels of cultural and linguistic diversity and relatively low levels of private health service provision and insurance coverage are likely to result in higher workload demands on staff in areas such as south western-Sydney.

UNSW supports efforts by SWSLHD and other stakeholders to increase funding for health services in south west of Sydney.

Within the academic domain, the University works very closely with SWSLHD on jointly establishing senior positions to support academic medicine in the south western region.

Current joint academic appointments are in the disciplines of:

- Breast Surgery
- Gastroenterology
- Intensive Care
- Obstetrics and Gynaecology
- Orthopaedics
- Nephrology
- Neurology
- Paediatrics
- Pancreatology
- Psychiatry
- Psycho-oncology
- Public Health and Community Medicine
- Radiation Oncology
- Respiratory Medicine

This represents a significant investment by the SWSLHD in the above areas. In addition to this, UNSW has approximately 600 conjoint appointees from amongst the SWSLHD workforce. These conjoints substantially contribute to UNSW teaching of the next generation of clinicians, and research aiming to improve the health of residents across the region.

UNSW will continue to partner with the LHD to identify and agree on strategic priority areas for investment in clinical leaders that meet the needs of both organisations and the local community. A recent example of this has been the appointment of a new UNSW Professor of Neurology to Liverpool Hospital through a collaboration with SWSLHD valued at more than \$6m over the next five years. This is a key joint appointment and another example of alignment between UNSW and SWSLHD's strategic priorities in a key priority area of clinical medicine and research.

The SWSLHD and UNSW have recently partnered to establish a Clinical Academic Council with a role to plan for such enhancements as additional resources become available.

The University would also value opportunities to further develop research career pathways for health professionals employed within NSW Health. Models such as the Early and Mid-Career Fellowships established within SWSLHD have provided an opportunity for talented clinicians to develop their research skills and if funding was available this would be a worthy area for investment.

SWSLHD and UNSW, along with WSU and 11 other partners, are also key members of Maridulu Budyari Gumal (Sydney Partnership for Health, Education, Research and Enterprise – SPHERE). SPHERE is an academic health science partnership established to develop innovative models of healthcare and research translation.

SPHERE has several Clinical Academic Groups (CAGs), many of which are led by UNSW and SWSLHD staff in south western Sydney, including those coordinating:

- Age and Ageing
- Cancer
- Early Life Determinants of Health
- Healthy Urban Environments
- Musculoskeletal Health
- Respiratory, Sleep, Environmental and Occupational Health

Leadership of these groups and active involvement in SPHERE's other CAGs highlights the significant investment that SWSLHD and UNSW are making in developing innovative models of care as well as in the translation of research into practice in south western Sydney. A major aim of academic health science partnerships such as SPHERE are to allow health services and universities to work together on addressing major health problems in their local communities. The University has also appointed a Director of Research Strategy 2025 in the south west to further encourage collaborations within SPHERE and in the region generally.

These efforts also contribute to broader efforts by both organisations to build a culture of excellence to attract the highest quality talent to south western Sydney.

(g) an investigation into the health workforce planning needs of the South-West Sydney Growth Region to accommodate population growth to 2050

UNSW has been party to consultations as part of development of the SWSLHD Workforce Strategic Plan 2014-21 which outlines a substantial growth in overall staffing, further development of relationships with partner universities and plans for the educational and training needs of the SWSLHD workforce during this period. We note that these plans are usually developed to address the short to medium term needs so as to ensure that changes in models of care and new innovations can be incorporated into planned strategies.

UNSW remains committed to Greater Western Sydney and our partnership with SWSLHD to plan for and address the additional training and workforce needs of south western Sydney. This collaboration will continue to mature in alignment with the UNSW 2025 and Medicine Faculty Strategy.

UNSW also has an equity and inclusion strategy which aims to ensure that the University's staff and students are representative of the broader community and this includes specific strategies to engage more students from lower socioeconomic and culturally and linguistically diverse backgrounds, both of which align with goals for SWSLHD and our other partners. These strategies are in addition to programs already operated by the UNSW South Western Sydney Clinical School with educationally disadvantaged schools from the region.

Approximately 60% of students undertaking the UNSW Medicine program in south western Sydney are from the Greater West of Sydney and are representative of the region's significant cultural diversity. A focus on students from the Greater West has translated into graduates of the South Western Sydney Clinical School returning to south western Sydney hospitals for junior medical training or advanced training. Approximately 25% of conjoint appointees at the south western Sydney hospitals are UNSW alumni, and building capacity across the region is a key goal for UNSW Medicine.

Exposure to the south western Sydney hospitals has allowed these graduates to experience the facilities and opportunities for careers that are being provided by SWSLHD. These efforts will be key to ensuring that the best talent is attracted to working in the south west in the future.

UNSW will continue to partner with SWSLHD and other stakeholders to develop, test and implement new and transformative models of care. Opportunities exist to coordinate and invest in major big-picture initiatives supporting transformation in models of care delivery which will have an impact on the workforce requirements in the future:

- Hospital without beds – leveraging big data, telemedicine, biomedical breakthroughs across the care continuum;
- Integrated care and implementation – embedding the SWS Primary and Integrated Care Unit to develop integrated care and translation into practice;
- Big data research – consolidating and enhancing the reputation of south western Sydney at the cutting edge of Big Data research, including the application of advanced machine learning to electronic medical records (EMRs) for prediction of patient trajectories and personalisation of care;
- Clinical trials – in partnership with the District, the Ingham Institute and the George Institute, to lead Phase II-IV clinical trials;
- Community outreach and social engagement; and
- Preventive medicine and public health.

(h) a review of preventative health strategies and their effectiveness South-West Sydney Growth Region since 2011 and the required increase in funding to deal with childhood obesity

UNSW works in very close partnership with SWSLHD on several preventive health programs and strategic development. The University has a strategic goal to expand the number of UNSW research groups engaged in south western Sydney and this will provide opportunities for further collaboration to the benefit of the regional population if resources become available.

Most notable is the partnership in the UNSW Centre for Health Equity Training, Research and Evaluation (CHETRE). CHETRE was established in 1998 to meet research and development needs of health equity within south western Sydney. The Centre is now a partnership between UNSW Centre for Primary Health Care and Equity, SWSLHD Division of Population Health and the Ingham Institute.

Through this collaboration CHETRE supports and evaluates a range of preventive health programs, particularly those aimed at reducing inequities in health. The current focus of the Centre is on health impact assessment, locational disadvantage and Indigenous health including the Gudaga program with Aboriginal children.

UNSW staff members based in south western Sydney also lead the Healthy Urban Environments CAG of SPHERE, of which SWSLHD is a key partner. This CAG is addressing how urban policy and governance can lead to better health outcomes for local populations. This approach will be particularly important with respect to the Aerotropolis and work is already underway to look at the health impact of Sydney's second airport and opportunities to promote health in the precinct.

In partnership with SWSLHD, the South West BestSTART (Systems Transformation and Research Translation) Academic Unit is also a key area in which the two organisations are working together on preventive health programs. BestSTART specifically aims to ensure the voices of young people and their families are integrated into current research efforts and to translate this research into changes in clinical practice.

BestSTART is also evaluating existing and new models of care for possible implementation in south western Sydney. Amongst the foci of interest for BestSTART is childhood obesity in response to the fact that one in three children in south west Sydney are overweight or obese compared to the state average of one in six children. As a result, BestSTART is supporting the 'Growing Healthy Kids' program to address this challenge at a population level.

More broadly, UNSW is also involved in a range of collaborative public health and health promoting projects in south western Sydney with a focus on vulnerable populations. These include work with indigenous communities, refugee settlers and other culturally and linguistically diverse populations.

(i) a comparison of clinical outcomes for patients in the South-West Sydney Growth Region compared to other local health districts across metropolitan Sydney since 2011

UNSW is not positioned to make direct comparisons of clinical outcomes for patients in south western Sydney with others; however, the District and NSW Health regularly report on health status.

This said, UNSW is committed to supporting SWSLHD in ongoing evaluation of health inequalities both within the District and across NSW. A key aim of CHETRE is to engage with residents and groups in communities and neighbourhoods in our service area in south western Sydney that suffer health and other disadvantages due to complex social and economic challenges. CHETRE recently worked with the Division of Population Health in SWSLHD to develop a strategy targeting health inequality in the SWSLHD Equity Framework to 2025.

More broadly, UNSW also has several clinical academics and research groups with a focus on the assessment of clinical outcomes or who are involved in the development of new models of care to address clinical problems which are priorities for the south west region.

The Simpson Centre headed by Ken Hillman AO, UNSW Professor of Intensive Care at Liverpool Hospital, was one of the first centres established in Australia to conduct research around health services and systems. This type of research involves reorganising the way health services are delivered to improve outcomes. As part of this research program the Centre has been responsible for several significant innovations including the concept of day-of-surgery admission and the perioperative ward which has changed the way elective surgery is conducted by preparing patients for surgery in the community rather than as a hospital inpatient.

The Centre also invented, developed and evaluated the first rapid response system for seriously ill at-risk patients – the Medical Emergency Team (MET) call system. This system has been adopted and implemented nationally and internationally and has now been introduced across every acute hospital in NSW under the 'Between the Flags' program under the auspices of the Clinical Excellence Commission.

Most recently the Centre has been developing a tool that identifies elderly frail patients near the end of life. The tool uses simple, readily available and easy-to-measure patient characteristics such as age, acute problems and chronic health problems.

UNSW Scientia Professor Guy Marks heads the Respiratory, Sleep and Environmental Health research group which focuses on respiratory and sleep problems that cause a high burden of disease in the south western Sydney community, require substantial health care resources including prolonged inpatient stays and multiple emergency department visits. Professor Marks is also an internationally recognised expert in tuberculosis, currently President of The International Union Against Tuberculosis and Lung Disease; he also brings his expertise to the LHD through conducting its tuberculosis clinics.

The Whitlam Orthopaedic Research Centre (WORC), led by UNSW Professor Ian Harris AM, has research expertise in multicentre randomised controlled trials of surgical treatment and the establishment of outcomes registries to track patient outcomes over time.

These groups are just a few examples of those who are working with local health services to improve clinical outcomes for patients in south western Sydney, with much of this work having great impact nationally and internationally.

More broadly, SPHERE as described above, which operates across a large section of Sydney in partnership with both SWSLHD and South Eastern Sydney Local Health District (SESLHD) is a major platform for understanding geographic variation in healthcare delivery and outcomes.

(j) other related matters

UNSW Sydney is a fully committed health sector partner along with the SWSLHD, the individual hospitals, the Ingham Institute for Applied Medical Research, South Western Sydney Primary Health Network, other education providers and the community of south western Sydney. This partnership is critical to the delivery of the University's undergraduate Medicine program and the delivery of higher degree research programs in south western Sydney. We look forward to continuing this vital work in partnership with SWSLHD.