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SUBMISSION
THE SENATE STANDING COMMITTEE ON COMMUNITY AFFAIRS
References Committee
Inquiry into universal access to reproductive healthcare

What is The Hudson Institute of Medical Research?

The Hudson Institute of Medical Research (Hudson Institute) is a major independent Australian medical research institute, located at the Monash Medical Centre in Melbourne, Australia.

The Institute was established through the merger of two previous institutes in 2014, the Monash Institute for Medical Research and Prince Henry's Institute of Medical Research.

The Institute's research covers discovery science and translational research into five major themes of 1) Reproductive health and pregnancy, 2) Fetal, infant and child health, 3) Inflammation, 4) Cancer, and 5) Hormones and health.

The Institute has 475 scientists, in 45 research groups working in five specialist centres

- Centre for Reproductive Health
- Centre for Cancer Research
- Centre for Endocrinology and Metabolism
- Centre for Innate Immunity and Infectious Diseases
- The Ritchie Centre (includes women's, fetal and neonatal health).

The Institute's research is recognised internationally through high-profile research fellowships, grants, publications, prizes and awards, and translation of the Institute's work into clinical practice, patents and industry engagement.

Governance

The Hudson is an independent medical research institute with its own governing Board, a Company Limited by guarantee. It is closely affiliated with Monash University with which it has strong administrative and academic ties (including graduate students) and with the Monash Health network (Victoria's largest health service of 1.5 million people). The Institute is also a founding member of the Monash Health Translation Precinct with partners Monash Health and Monash University.

Teaching

As an independent institute affiliated with Monash University, the Hudson is responsible for training Honours, Masters and PhD students in reproductive sciences, at present a total of over 60 students. Many previous trainees now hold important professorial and other positions related to

Australian reproductive health. In addition, the research staff involved in reproduction research at the Hudson give lectures to students as part of their undergraduate coursework.

Funding

While the Hudson contributes significantly to many aspects of the inquiry as listed below, it depends on external competitive funding from bodies such as the NHMRC for both salaries and operating costs. There is a need to increase the funds for more research including discovery research to actually solve the problems.

The submission to the inquiry

All Centres in the Hudson Institute are involved in fundamental and/or translational research in reproduction. In doing so, the Hudson Institute contributes to several areas of interest to this inquiry.

1. The development and assessment of contraceptives.

It is vitally important to know how contraceptives work and their effectiveness. Research at Hudson Institute is exploring the mechanisms of germ cell development and the role of steroid hormones, the basis of many contraceptives, in those processes. In addition, the research has identified alternative options for new contraceptives by non-steroidal methods for men and women. This information, including side effects of contraceptive use, are needed by those approving the use (eg. TGA) and by those accessing the contraceptives.

2. Best practice approaches to sexual and reproductive healthcare

Scientific evidence about sexual and reproductive health underlies best practice. The Hudson Institute is contributing to this very important area by its fundamental and translational research in the reproductive sciences. Individuals trained at Hudson Institute have the knowledge about genetic (including DSD or sex determination), epigenetic, pathophysiological and environmental effects on sexual and reproductive health and, therefore, contribute to best practice based on evidence. This includes infertility, pregnancy and newborn care, endometriosis, and inflammatory responses and cancers of the male and female reproductive tracts.

3. Sexual and reproductive literacy

It is well known that as a nation we lack sexual and reproductive literacy. The Hudson Institute contributes to building knowledge in this area by the following activities: training people in the reproductive sciences, contributions to the lay press such as *The Conversation*, speaking to social and service groups about our research, giving presentations to school groups and science teachers, offering public fora about our research in reproduction, and publishing our research in national and international journals.

4. Reducing the cost of health services

Treatment of infertility represents a considerable cost to Australia. IVF has a low success rate (~30%) in terms of a live-born infant per IVF cycle. To improve this, research at Hudson Institute has developed a blood test to be used to predict likely success following embryo transfer. Such a test could become widely used and routine in women with recurrent implantation failure as part of IVF. When finalised, this test will require approval by regulatory bodies and an understanding of its application by the lay public, particularly IVF patients.

5. *Women's health research*

Women's health researchers at Hudson Institute study the critical problems of endometriosis, pelvic organ prolapse, and complications of pregnancy that impact women, and their babies. In Australia, it takes an average of 7 years to diagnose endometriosis and during this time many women will experience pain, fertility problems, and loss of work. Complications during pregnancy, such as placental dysfunction and subsequent fetal growth restriction, are difficult to diagnose and adversely impact maternal and infant for a lifetime. We are international leaders in women's health research for novel diagnostics that are currently being explored, and translated into clinical trial, that will ensure treatments can be implemented for optimised health.

6. *Any other related matters*

There is collaborative fundamental and translational research between the Hudson Institute, the Monash University Department of Obstetrics & Gynaecology, The Education Program for Reproduction & Development, and the Obstetric, Gynaecology & Paediatric Divisions at Monash Health. This underpins our fundamental and translational research

With best wishes,

Professor Elizabeth Hartland

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