

Dear Mr Humphrey

My colleagues and I, as members of the Lockhart Review Committee, would like to clarify some of the information that we provided in response to the Senate hearing on Friday.

Senator Fierravanti-Wells asked a question (CA6) and referred to the "Indian" guidelines while discussing three of the US President's Council on Bioethics reports on stem cell research. The Senator's question seemed to imply that the committee had thought it appropriate to ignore the US reports but to reference the Indian report. From reading the transcript, there are two points of clarification we would like to provide to the committee.

US President's Council on Bioethics reports The Lockhart report itself did not refer to the three reports mentioned by Senator Fierravanti-Wells, although the members read widely and beyond those publications that were referenced in the final report. However, the role of the US President's Council on Bioethics was highlighted in the literature review. The reason why these reports were not mentioned or referenced had nothing to do with the quality or significance of the reports, rather it was because the outcome of the reports had led to the current US government position in which only pre-existing and approved embryonic stem cell lines can be used in US government supported research and it is not permitted to use US Federal government resources to conduct research on embryos or to produce embryonic stem cell lines. Thus, the recommendations of these reports have been adopted by the US government, a point that is made abundantly clear in the Lockhart Review.

Indian guidelines.

Section 13.2 of the Lockhart review, is the summary of the commissioned literature review on international exchange and trade of human reproductive materials and stem cells. In this context, we referred to the Indian Government "Guidelines for Stem Cell Research" (p128) in which it is stated that no export of cell lines is permitted except as part of collaborative research that has been approved by the Health Minister's Screening Committee. The Indian guidelines provided important information on this subject from a fellow Commonwealth nation. The US guidelines and prohibitions do not restrict the import or export of stem cell lines.

Senator Polley asked (CA8) "can embryonic stem cells be transplanted into adult tissue?" As stated, no such clinical trials have been undertaken to date. However, it subsequently became clear that this question related to Prof Sherley's submission (sub 181). Having reviewed Prof Sherley's submission, a more fulsome answer is that while embryonic stem cells could be placed into an adult, this process is likely to give rise to the formation of teratomas and teratocarcinomas, clearly an undesirable outcome. However, it would be exceedingly unlikely that embryonic stem cells directly would be placed into an adult as some form of therapeutic treatment, and this has been a rather simplistic understanding included in some submissions, including that of Prof Sherley. Rather, what is envisaged is that the totipotent nature of the embryonic stem cells would allow the cells to be guided down various development pathways to either terminally differentiated somatic cells or to adult stem cells. Having been differentiated, these cells would then, in the right niche environment, be able to produce daughter adult stem cells and other cells that become differentiated somatic cells (Prof Sherley referred to these as worker cells) through the process that he referred to as asymmetric cell division. Somatic and adult stem cells derived from embryonic stem cells may become therapeutic treatments.

This question was asked in a related way by Senator Boswell (CA9) and the response above is relevant.

Senator Fielding asked a question at the morning tea break regarding the effect placing embryonic stem cells into an adult and about the production of daughter cells. Again, this appeared related to Prof Sherley's submission. I believe he asked this question directly of another witness later in the day. Again, the response to Senator Polley is relevant.

Thank you for providing the opportunity to clarify our testimony.

Yours sincerely

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