Title: Gender Reassignment Surgery: A Clinical and Cost-Effectiveness Review

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Context and policy issues

Gender identity disorder (GID) is diagnosed when an individual experiences a strong, persistent cross-gender identification and a significant discomfort with his/her sex or a sense of inappropriateness in the gender role of that sex.1 A person with transsexualism is a person with GID who has a mandatory desire for gender-reassignment surgery (GRS).2 Prevalence data for GID vary with diagnostic criteria, time, and country, ranging from 1:2900 male-to-female transsexual (MF-TS) and 1:8300 female-to-male transsexual (FM-TS) in Singapore to 1:36,000 MF-TS and 1:94,000 FM – TS in Germany.3 Diagnostic, psychosocial, medical and ethical arguments have been brought forth, both for and against GRS.3,4 Genital surgery for the MF-TS patient may include orchiectomy, penectomy, vaginoplasty, clitoroplasty, and labiaplasty. Genital surgery for the FM-TS patient may include hysterectomy, salpingo-oophorectomy, vaginectomy, metoidioplasty, scrotoplasty, urethroplasty, placement of testicular prosthesis, and phalloplasty.5

Even though anatomical transformation through surgical means has become a common practice,3 it has a very complex multi-step transition,6 has high costs,7 (average MF surgery costs about US$ 11,000, average FM surgery cost about US$ 17000) and its wide spread use suggest a review of the clinical and cost-effectiveness of GRS.

Research questions

1. What is the evidence for the clinical benefit and harm of GRS for patients with GID?

2. What is the cost-effectiveness of GRS for patients with GID?
Methods:

A limited literature search was conducted on key health technology assessment resources, including PubMed, The Cochrane Library (Issue 2, 2008), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international HTA agencies, and a focused Internet search. Results include articles published between 2000 and June 2008, and are limited to English language publications only. Filters were applied to limit the retrieval to systematic reviews, health technology assessments, meta analyses, and economic studies.

Summary of findings:

Clinical effectiveness of GRS

Our literature search identified two systematic reviews on GRS. The earlier review with literature search up to December 2001 found there was insufficient evidence to support the efficacy of GRS. The most recent study is a rigorous review with a systematic literature search covering the literature up to November 2005. The literature search found only case series with lack of validated assessment measures. The main findings are summarized in the table below (only surgical procedures with relevant literature found are presented).

<table>
<thead>
<tr>
<th>Surgical procedures (number of studies included)</th>
<th>Outcomes</th>
<th>Conclusion</th>
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<tbody>
<tr>
<td><strong>Male- to- female transition</strong></td>
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<tr>
<td>Clitoroplasty/neoclitoris construction (3)</td>
<td>Success in the creation or reshaping of the clitoris</td>
<td>Successful results in terms of function and cosmetic appearance with few complications.</td>
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<tr>
<td>Vaginoplasty/neovagina construction (32)</td>
<td>Success in the creation or reshaping of the vagina.</td>
<td>Satisfactory cosmetic and functional results. Major complications in immediate but not in long-term follow up.</td>
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<td><strong>Female- to- male transition</strong></td>
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<tr>
<td>Hysterectomy (1)</td>
<td>Success in the removal of the uterus</td>
<td>Good result. Minimal blood loss with good recovery.</td>
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<tr>
<td>Mastectomy (3)</td>
<td>Success in the removal of the entire breast(s)</td>
<td>Good results</td>
</tr>
<tr>
<td>Metoidoplasty (2)</td>
<td>Success in the creation of a microphallus from the clitoris</td>
<td>Satisfactory results</td>
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<tr>
<td>Phalloplasty (36)</td>
<td>Success in the creation of a penis</td>
<td>Good results with major complications associated with the neourethra, stricture formation or fistulae</td>
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<tr>
<td>Salpingo-oophorectomy (3)</td>
<td>Success in the removal of a fallopian tube(s) and an ovary</td>
<td>Satisfactory results</td>
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<tr>
<td>Scrotoplasty/scrotum construction/testicular prosthesis (2)</td>
<td>Success in the creation of a scrotum</td>
<td>Satisfactory results with implant expulsion rupture or dislocation encountered in a number of patients.</td>
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Cost-effectiveness of GRS

Our literature search did not identify any published article on cost-effectiveness of GRS.

Conclusions and implications for decision making:

The evidence to support GRS has several limitations in terms of lack of controlled studies, high loss to follow up and lack of validated assessment measures. In the majority of studies, a large number of persons undergoing GRS experienced a successful outcome in terms of subjective well being, cosmesis and sexual function. GRS is a costly complex procedure, and the magnitude of benefit and harm, as well as its cost-effectiveness, cannot be estimated accurately based on the current limited evidence.

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References:


