

Opinion Letter

## Cumulative Live Birth Rate: An Outmoded Term

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A recent opinion article by Maheshwari et al. [1] called for improved terminology to reflect the combined benefits of live births arising from fresh and frozen embryo transfers.

This issue is highly relevant for clinicians trying to answer the question regarding a woman's chances of having a baby from IVF treatment. However, not only does the woman undergoing treatment want an honest idea of her chances but in Australia the Government, which subsidises IVF treatments to a major level, wants to know if its money is being well spent with an eye towards efficiency.

The efficiency question recently attracted a critical report in the Sydney Morning Herald newspaper under the headline: National IVF clinics stop publishing live birth data amid scrutiny over success rates (reported by Harriet Alexander, October 24, 2015). This was in response to the decision by ANZARD (the highly respected and esteemed Australian and New Zealand Assisted Reproduction Database which has been presenting its annual reports since 2004; Macaldowie et al. [2]) to change from publishing live birth rates comprehensively, reverting to clinical pregnancy rates. This was related to the fact that live birth rates per fresh IVF cycle "ranged from 4 per cent at the worst performing clinic to more than 30 per cent at the top performer" according to the reporter citing the figures as presented by ANZARD. Following reactions at the highest political level requiring explanations and clarity, the Fertility Society of Australia (which contributes to the ANZARD Review Committee) is looking to improve the data presentation. In this context, definitions covering relevant parameters of outcomes from assisted reproduction become highly relevant.

Whilst the term cumulative live birth rate had its place before cryopreservation began to establish a significant place in assisted reproduction, newer and more relevant definitions are required. Within our own IVF facilities, we are now generating more pregnancies from vitrified embryos (Yovich et al. [3]) and have an increasing trend towards freeze-all, as well as cryopreserving the morphologically best embryos, while transferring fresh embryos of lesser grading. To avoid confusion with the established definition of Cumulative Pregnancy Rate (from several egg pick up procedures) we prefer IVF Utilization and Productivity rates, terms we introduced in earlier publications (Yovich and Stanger [4]; Stanger and Yovich [5]). These terms are defined as follows:

### Utility Rates

#### Oocyte utilization index

# Embryos transferred or cryopreserved / total oocytes collected

#### Embryo utilization index

# Embryos transferred or cryopreserved / # 2PNs (# 2PNs reflects fertilized eggs; which in turn reflects # mature M-II eggs)

### Productivity Rates

#### Pregnancy productivity rate

Total ET and FET pregnancies per Initiated Cycle or per TVOA

#### Live birth productivity rate

Total ET and FET live births per Initiated Cycle or per TVOA

(TVOA- Transvaginal Oocyte Aspiration; PNs- Pronuclear Stage Oocytes; M-II- Metaphase II Oocytes; #: number)

We believe these terms enable the comprehensive calculation of IVF success for the woman, and enable a fair methodology for comparing rates across different clinical sub-groups, e.g., female age, use of adjuvants as well as different clinical regimens including natural cycles and low-dose stimulations. It may also lend itself to fairer comparisons for the establishment of league tables which the public, the popular press and the governmental treasury appear to require. However this aspect requires an even better delineation of the denominator for such calculations to be truly fair e.g. stratifying the characteristics of the women undergoing treatment to include socio-economic aspects, cycle number and life-style considerations such as smoking.

### References

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