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## Donor Recruitment and Compensation

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## Outline of Presentation

- Changes in Donor Insemination
- Why is there a shortage of sperm donors?
- Consequences of changes in regulation
- How can we improve donor recruitment?
- Donor compensation
- How can we reduce attrition of donors?
- Conclusions


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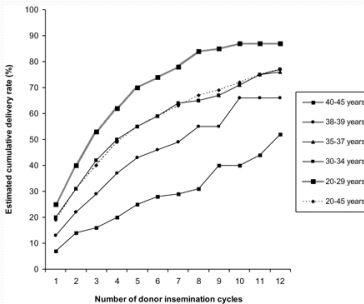
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## Donor Insemination (DI)


**Indications:**

- Severe male factor infertility
- Others: serious genetic conditions, rhesus disease, BBV
- 'Social infertility': single woman, lesbian couples

**Outcomes:**  
Cumulative live delivery rate after DI:



De Brucker et al., Hum Reprod. 2009; 24: 8: 1891-1899




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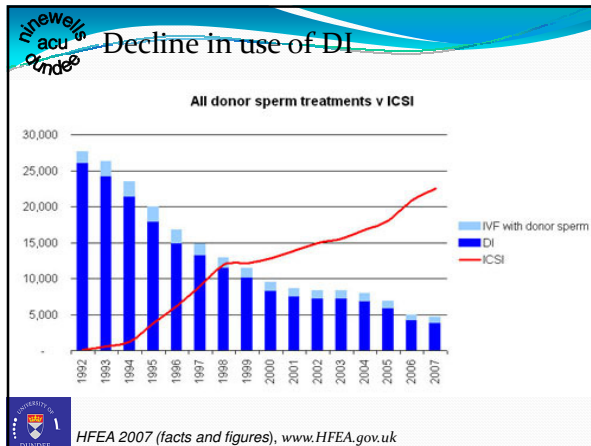
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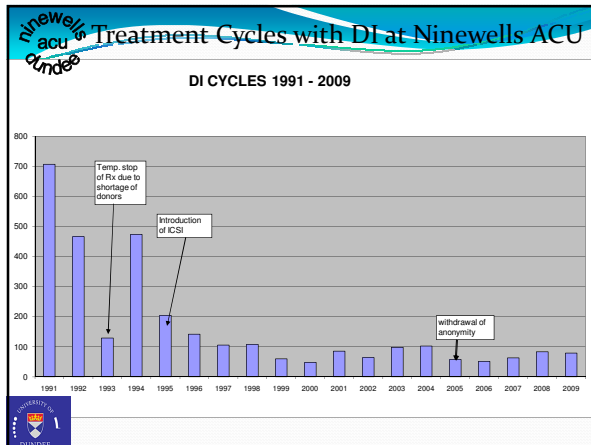
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**ninewells acu Dundee** Changes in profile of patients receiving DI

| year | DI for single females | DI for lesbian couples | DI for all other females |
|------|-----------------------|------------------------|--------------------------|
| 1999 | 508 (11.7%)           | 284 (6.6%)             | 3536 (81.7%)             |
| 2006 | 705 (18%)             | 767 (20.1%)            | 2392 (61.9%)             |

- Decrease heterosexual couples
- More same sex/single woman

A long term analysis of the Human Fertilisation and Embryology Authority Register data (1991-2006):  
www.HFEA.gov.uk

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## Potential Unmet demand for using DI

Number of treatment cycles (number of patients) using donated sperm in UK since 2000

| Treatment     | 2000 | 2005 | 2006 |
|---------------|------|------|------|
| Natural DI    | 4926 | 3578 | 2325 |
| Stimulated DI | 3248 | 2271 | 1749 |
| IVF (DI)      | 979  | 1023 | 878  |
| Total         | 9153 | 6872 | 4949 |

HFEA 2007 (facts and figures), [www.HFEA.gov.uk](http://www.HFEA.gov.uk)

Possible reasons for not accessing treatment: local rationing decisions, availability of treatment, waiting times, costs, choice of donor, anonymity of donor




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## How many donors do we need?

Estimated Number Donors needed:  
*If we assume 5000 request treatment, 40% live birth rate with resultant 2000 live births pa:*

- if no choice in donors = 200
- choice (factor : X6 for ethnic origin, screening) =1200

**There is a significant shortage in number of sperm donors in UK.**

Current number of active sperm donors in UK (2008): 384




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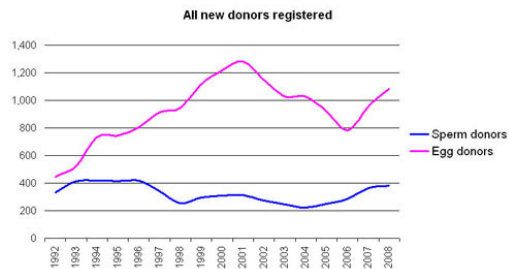
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## Why is there a shortage of sperm donors?: Removal of Anonymity

- Removal anonymity: . Sweden from 1985, UK from 2005.
- declined donor recruitment in the run up to removal of anonymity seen in many countries

**All new donors registered**



HFEA 2007 (facts and figures), [www.HFEA.gov.uk](http://www.HFEA.gov.uk)




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## Compensation of Donors

- Restriction on financial incentives was introduced in many countries as felt to be inappropriate motivation
- 1998 HFEA: £15 payment per sample and 'reasonable expenses'
- 2005 SEED review:
  - reasonable expenses (loss earnings up to £55.19/day, max. £250 per course)
  - Benefits in kind (discounted treatment)


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## Consequences of Changes in Regulation: Recruitment Patterns

UK survey in 2006:

- 86% of clinics difficulty recruiting donors
- 89% increased cost treatment
- 75% increased waiting times
- 9% clinics withdrawn DI

British Fertility Society survey July 2006

Reassuringly recent HFEA Data (2007) shows a 6% increase in men registering as sperm donors in UK.


**But...**

40% of DI treatment localised in London (HFEA 2007)

Patients travelling overseas for treatment (avoid waiting lists, anonymous, donor selection, costs)

Since 2004 internet services providing delivery fresh semen to home

Increase in Commercial Sperm Banks marketing on-line (select from donor catalogue)




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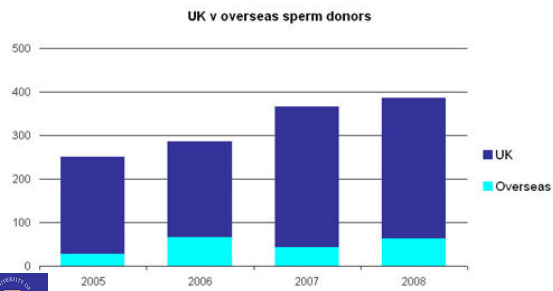
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## Rise in importation of sperm from outside the UK


Number of donors with a UK residential address compared to those with an overseas address, 2005-2008

UK v overseas sperm donors



| Year | UK  | Overseas |
|------|-----|----------|
| 2005 | 250 | 20       |
| 2006 | 280 | 30       |
| 2007 | 320 | 40       |
| 2008 | 320 | 60       |

HFEA 2007 (facts and figures), www.HFEA.gov.uk




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**Increased cost non-anonymous sperm**

Cryos (New York) Price list July 2009

| Motile sperm/straw | Anonymous (IUI washed) | Non-anonymous (IUI washed) |
|--------------------|------------------------|----------------------------|
| 2.5 to 5 million   | \$100                  | \$200                      |
| 5 to 9.5 million   | \$200                  | \$300                      |
| 10 to 15 million   | \$400                  | \$500                      |
| 15 to 20 million   | \$600                  | \$700                      |
| 20 to 25 million   | \$800                  | \$900                      |
| + 25 million       | \$1,000                | \$1,100                    |

Possible reasons for increased price: difficulty recruitment, cost counselling, increased cost administration

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**Changes in Characteristics of Sperm Donors**

In 1994-1995:

- 32% of sperm donors were under 30 years (most common aged group 18 - 24)
- 21% of sperm donors already have children of their own.


In 2004-05:

- 69% were aged over 30 years (most common age group is 36-40)
- 41% already have children of their own, with 31% having two or more children

HFEA data (October 2005)

Other Issues:

- possible increase number of homosexual men seeking to become sperm donors (25% current sperm donors in Dundee)
- many donors only prepared to donate to known recipients




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**How can we improve number of sperm donors?**

**Maximum number of families from single donor**

- present limits appear arbitrarily set
- low risk of inadvertent consanguinity (shift non-anonymous)
- consider impact on donor, DI conceived and society

| Country                   | Donor limit                 |
|---------------------------|-----------------------------|
| Sweden                    | 6 children                  |
| Switzerland               | 8 children                  |
| New Zealand               | 10 children                 |
| Netherlands               | 25 children                 |
| France                    | 5 children                  |
| Austria                   | 3 families                  |
| Finland                   | 5 families                  |
| NSW and Western Australia | 5 families                  |
| Victoria, Australia       | 10 families                 |
| Norway                    | 6/7 families/12-14 children |

HFEA: authority Paper – sperm, egg and embryo donation, December 2009

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**Changing threshold for acceptance of donors**


**Age:**

- Increase age associated with risk of abnormalities in offspring
- BFS suggested increasing age limit to 50 years (current UK guidelines 40 years)

**Semen Quality:**

- Semen quality is critical for success
- CECOS data showing double fecundity if number motile sperm per straw increases from 5 to 10 million motile
- minimum of WHO criteria (but best if in top 20%)
- previously fathered children

**There is a fine balance between optimal outcome and donor recruitment**




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**Donor choice**

Offer patients choice in donor characteristics:

- appropriate to allow patient/couples to match, but less important with shift in openness
- CMV status matching (advised if CMV positive donor, can be used in CMV negative recipient if informed consent)


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**Compensation for Donors**

**Arguments for:**



- Increase recruitment
- Avoid exploitation (cost of providing identity, profit to service providers)
- Better donors: younger men, increase social class

**Arguments against:**

- May compromise safety e.g. conceal information
- Human dignity

Need to consider all stakeholders (child, donor, infertile couple, siblings, clinic, society)

HFEA plans to review aspects of SEED review in 2010: including age limit of donors, 10-family limits and financial compensation


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**Benefits in Kind**

**Sperm Sharing Schemes:** couples requiring IVF, have discount on cost of treatment if man becomes sperm donor

**Sperm Exchange schemes:** couple requiring oocyte donation have reduced cost/waiting times if become sperm donor (in Italian study proved acceptable to 60%)  
*Ferraretti et al., Hum Reprod 2006 21(10):2482-2485*

**Pre-vasectomy men:** men attending requesting vasectomy, offered cryopreservation of semen at discounted cost if become sperm donors

**Known Donation:** infertile couples requiring DI have reduced cost/waiting time if provide their own donor

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**Attrition of Donors**

Recruitment of sperm donors: the Newcastle-upon-Tyne experience 1994-2003

|                                | Number (% of potential donors) | Attrition (% of total applicants still in programme) |
|--------------------------------|--------------------------------|--|
| Applicants                     | 1101 (100.0)                   |  |
| Rejected at initial phone call | 87 (7.9)                       | 92.1   |
| Defaulted semen analysis       | 308 (28.0)                     | 64.1   |
| Rejected semen analysis        | 595 (54.5)                     | 10.1   |
| Released donors                | 40 (3.6)                       | 3.6  |

*Paul et al, Hum Reprod 2005; 21: 150-158*

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**Donor Attrition**

| Year | enquiries | appointments | DNA appointments | Not suitable | recruited |
|------|-----------|--------------|------------------|--------------|-----------|
| 2005 | 26        | 10           | 4                | 3            | 3         |
| 2006 | 32        | 15           | 4                | 6            | 5         |
| 2007 | 28        | 5            | 1                | 3            | 1         |
| 2008 | 14        | 3            | 2                | 0            | 1         |
| 2009 | 9         | 5            | 2                | 2            | 1         |

86% attrition rate from (11 / 109 enquires become donors)

**Source of Enquiry:**  
**ACU:** website: 32, ACU poster: 10, BirthTay newsletter: 4  
**Local:** local newspaper: 12, football website: 0  
**National:** newspaper: 30, NGDT: 16, HFEA: 1

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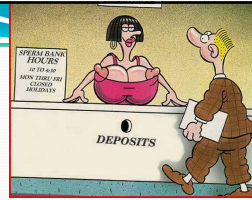
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## How to Reduce Attrition Rates



- Target donors who are likely to be fertile: e.g. men attending antenatal clinic, students, sporting events, family planning clinics, men already donating to research
- Improve service delivery: service centred on donors' convenience e.g. prompt answering of phone calls, convenient location and opening hours of semen laboratory



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## Service Modelling

A national recruitment structure recommended by BFS with a hub and spoke model

Pilot scheme funded by Department of Health at St Mary's Hospital Manchester 2010-2011: includes

- advertising campaign focused on sporting events
- larger hospital (hub) responsible for coordination and management
- local hospitals (spokes) donors provide samples and provide infertility treatment

Will sports fans have 'the balls' for sperm donation?



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## Conclusions

- Shortage of sperm donors needs to be addressed
- Consider methods to enhance donors recruitment (targeting those likely to be fertile, changes in regulation, threshold for acceptance, benefits in kind)
- Reduce attrition of donors (improved donor service)
- Nation recruitment structure may produce benefits

Thanks to staff from Ninewells Hospital and Medical School including: Anne McConnell and Chris Barratt



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