Challenges of Organ Donation in Developing Countries

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African Basis
Organ Transplantation

- Deceased
  - Donation after Brain Death – DBD
  - Donation after Circulatory Death – DCD

- Living Donation
  - Living Related
  - Living Non-related/Altruistic
  - Directed
Cape Town
Patient SM

- 12yr old girl presented with headaches, BP 180/100 and fluid overload
- Guest of our PICU
- Creat 1200mmol/l (13.5mg/dL)
- Background – Eastern Cape remote village with no electricity or running water
- Now living in a RDP house outskirts of Cape Town with mom and younger sibling
  - Mom works at airport coffee shop
  - Never heard of renal failure OR Organ transplant
What’s happening in the rest of the World?
Donor rates
Spain 30pmp  USA 20 – 30pmp  UK 16pmp  Russia 6.9pmp  SA 4pmp
BEYOND THE EUROPEAN UNION: COUNCIL OF EUROPE COUNTRIES

2013 kidney transplants per million population, Council of Europe members & observers

- **DD**: deceased donation
- **LD**: Living donation

- $24,082$ kidney transplant for these 42 CoE members (30% from living donors)

DONATION FIGURES OVER 10 YEARS FOR THE EUROPEAN UNION

Organ transplants from deceased and living donors in the EU, from 2004 to 2013 (All 28 EU Member States in 2013 are captured in this graph, even if they joined the EU after 2004. Source: Annual Transplant Newsletters 2005 to 2014)

- Increase in deceased donation: +18%
- Increase in living donation: +86%
- Total increase in donation: +33%
Transplantation

- Treatment of choice for severe organ failure
- Demand for organs outstrips supply in virtually every country in the world
  
  *Med J Aust 2005 Matthew T*

- Many approaches to increase donor rates
- Practises that have crossed the boundary of legal and ethical acceptability

- International practices of organ donation
  
  *Br J Anaesth 2012 – Rudge C, Delmonico FL, Chapman*

- Exploitation of vulnerable living donors

- Balance between:
  - Reduced need for transplantation VS
  - Developing deceased donation to its maximum potential
Organ Trafficking
The dark world of internet kidney trafficking

One man says he was so desperate to save his car from being repossessed that he turned to the black market online to sell his kidney. Health24 investigates.

South Africa has its own scandal involving illegal kidney transplants (see below) and the internet has become a powerful tool for those willing to let go of a kidney for a price.

People in urgent need of organs are often not in a position to wait in the long donor queues, so some have taken to the black market and online traders to source the organ they so desperately need to survive. On the other side, desperately poor people are offering their kidneys for sale and, as Shaun Swingler finds out for Health24, the only winners are the scammers in the middle.

Read: Should you have the right to sell your organs for profit?
Below is a map showing where organ donors and recipients reside, globally. 2012:

The Kidney World Order

- Donor countries
- Recipient countries

Typical donor (ex. Philippines)
Age: 28.9
Gender: Male
Annual income: $480

Typical recipient (ex. Israel)
Age: 48.1
Gender: Male
Annual income: $53,000

Source:
Coalition for Organ Failure Solutions (COFS), Organs Watch, ESOT

Graphic: Global kidney trafficking.

Credit: Der Spiegel. Source: Coalition for Organ Failure Solutions (COFS), Organs Watch
Illegal kidney transplants in South Africa

In South Africa, between 2001 and 2003, 109 illegal kidney transplants took place at St Augustine’s hospital in Durban – a Netcare group hospital. Five of those transplants involved the removal of kidneys from minors.

These illegal operations were allegedly facilitated by an Israeli organ broking syndicate run by Ilan Peri, an alleged organ trafficking kingpin. The syndicate brought paying Israeli citizens in need of kidneys to South Africa, where they would receive the organ from willing sellers the syndicate had arranged. The recipient would pay US$120 000 (±R1.4 million) per kidney.

At first the syndicate used sellers who were also from Israel, where they were paid on average US$20 000 (R231 800) for their kidney, but after the syndicate realised they could find people elsewhere in the world who would demand less money for their kidneys, they sourced sellers from Brazil and Romania who were willing to let them go for as little as US$6 000 (±R69 500).
Transplant Tourism

Regulations

- International political organisation WHO
  - Revised Guiding Principles on Human Cells, Tissue and Organ Transplantation – orderly, ethical & acceptable framework

- Professional Bodies – The Transplantation Society (TTS)
  - Declaration of Istanbul on Organ Trafficking and Transplant Tourism 2008
Availability of Donors
Donation Rates

- Positive attitudes towards organ donation includes
  - Education level
  - Socio-economic status
  - Being young

- People more willing to make living donation to family member
  - Than a donation after death

- Religious reasons commonly cited as barrier

*Sources*

**BMC Health Serv Res 2008 Mossialos E**

**Transplant Proc 2004 Conesa C**
ROAD CRASHES

SA 25/100 000pop
UK 2.9 Canada 5.9 India 20.7 Iran 43.5
Less Well Resourced Countries
Remote areas and High numbers
Medical Environment

- Big distances from teaching centres
- Small district general hospital with insufficient staffing
  - Possible doctor and few nurses
  - No transplant co-ordinators
  - No facility to keep a donor – ICU/High Care/EM unit

- Big centres
  - Busy with adequate facilities but need to prioritise
  - Ventilator priority – severe head injuries – GCS<6
<table>
<thead>
<tr>
<th>Cause of Donor State</th>
<th>Consent</th>
<th>Organ</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 yr BM Pedestrian Vehicle Accident</td>
<td>Father and brother give <strong>consent</strong> but <strong>withdraw</strong> after discussion with sisters ‘against’ their culture</td>
<td>Nil</td>
</tr>
<tr>
<td>54yr CM Gunshot head</td>
<td><strong>Consent only</strong> for kidneys</td>
<td>Kidneys x 2</td>
</tr>
<tr>
<td>22yr BM Fell off ladder Malawian citizen</td>
<td>Cousin in Cape Town Contacted family in Malawi – unable to come and refuse consent</td>
<td>Nil</td>
</tr>
<tr>
<td>28yr WF Assault</td>
<td>Agreed to abdominal organs only</td>
<td>Liver and Kidneys</td>
</tr>
<tr>
<td>35yr CF Meningioma</td>
<td><strong>Consent refused</strong> Pt had made decision pre op – “been through enough”</td>
<td></td>
</tr>
<tr>
<td>25yr BM MVA ped</td>
<td>New admission. CT and pt still to be seen by N/surgeon GCS 5T/15........... “he is gone”</td>
<td></td>
</tr>
<tr>
<td>54yr BM Stab head</td>
<td><strong>Arrested</strong> during Ward round (referral) 2l neg fluid balance</td>
<td></td>
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<tr>
<td>Cause of Donor State</td>
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<tr>
<td>48yr CF Intra-cranial Haemorrhage</td>
<td>Consent refused. “Will be healed”</td>
<td></td>
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<tr>
<td>32yr BM ICH</td>
<td>Doctor requested consent - refused</td>
<td></td>
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<tr>
<td>32yr CM ICH</td>
<td>Consent refused. Father willing Siblings not</td>
<td></td>
</tr>
<tr>
<td>40yr CF Hypoxic arrest – asthma Resuscitated ? DCD</td>
<td>Not brain dead Poor SATS, gasping Cough and gag pos &gt;1hour CPR ? “collapse time” - not suitable</td>
<td></td>
</tr>
<tr>
<td>27yr CF Gunshot and hypoxia</td>
<td>Moslem family – cultural issue Consent refused</td>
<td></td>
</tr>
<tr>
<td>24yr BM ICH</td>
<td>HIV positive Consent</td>
<td>2 kidneys</td>
</tr>
<tr>
<td>59yr BM ICHx</td>
<td>Consent for all organs and tissues</td>
<td>2 kidneys Liver Eyes – cornea Skin &amp; Bone</td>
</tr>
</tbody>
</table>
Donor Issues

- No name of donor
  - Unnamed Male DOB 00/00/2016

- Contact details for the donor
  - Phone or address
  - Mobile phones but out of airtime

- Travelling of family
  - Money and safety
  - Ability to leave work
Communication
Communication issues

- Speaking the appropriate language
  - 11 official in SA
  - Availability of interpreters

- Level of Education
  - Rural and Women

- Insight and understanding
  - Strange concept – removing organs from a body
I DON'T UNDERSTAND A WORD YOUNG PEOPLE SAY THESE DAYS.

C U - I’LL TXT U LBR :)
Religious

- 8 yr old TA
  - Already received a kidney transplant at young age
  - Now on dialysis waiting for 2\textsuperscript{nd} kidney
  - 12yr old cousin severe head injury – brain dead
  - Family refused organ donation on religious grounds
  - Staff felt frustrated
Religious views on Organ Donation

Is donation compatible with my religious beliefs?
Individual interpretation
Vast majority of religions do support donation and transplantation

Christian – act of charity, fraternal love and self sacrifice
Islam – strongly believes in the principle of saving human lives
  • Permitted organ transplant as necessity to procure that noble end
Judaism – saving a life takes precedence over the sanctity of the human body
Hindu – similar support
I, Rabbi Yaacov Warhaftig, agree to donate all my organs for transplant - not for research - only after (the option checked below):

- Irreversible cessation of autonomous breathing (as confirmed by brain-stem death).

- Irreversible cessation of heartbeat.

Any and all preparations for transplant may begin only after consultation with a family appointed Rabbi. All medical procedures must be done with utmost care, respect, and minimum damage to the cadaver.

Family Contact: ***** *******
Phone: ***-***-****

Family Contact: ***** *******
Phone: ***-***-****
Attitudes, Beliefs and Behaviours surrounding organ donation

- Hispanic individuals disproportionately in need of organ donors but less likely to donate
- Mistrust of medical profession
- Concerns about religious acceptance of donation
- Perceptions of inequity in distribution of donated organs
- Context in which donation requests typically made
  - Breitkopf CR, Curr Opin Organ Transpl 2009 Apr
Cultural and family background

- Young families often refer to ‘Elders’
  - Young parents agree but defer decision to their parents
  - Often some distance away – may take days to get to hospital
  - No prior knowledge of this process
- Bury bodies ‘intact’
  - Want bodies back for immediate burial
- Violence and Medical legal post mortem
Cultural

- Human Spirit is transferred from the Donor to the Recipient
- Need for ancestral approval before donation
  - Remaining family lose ancestral protection in future
- Importance of particular rituals to do with the grieving process
  - Organ donation may interfere with this process
  - Change in traditional cultural beliefs over time
    - Younger generations deciding to become donors
Innovative thinking

- Cultural & Religious beliefs
  - Meeting with Religious and Traditional Healers
  - TV programs – introducing themes
  - Appointing Transplant Co-ordinators of different cultural backgrounds

- Organs
  - DCD programs
  - HIV organs
Improving the Critical Situation – a DCD program

- Groote Schuur first and only transplant centre in SA with a DCD program - Maastricht Category 3 & 4
- Successful outcomes although still small numbers
- Provides an option which is more easily understood and possibly more acceptable to families AND staff
- To expand this we need to look at other centres internationally
  - use machine perfusion
  - have funds available to assist families with transport costs etc
South Africa pioneers HIV-positive transplants

Belinda Beresford in Johannesburg


A graveyard in South Africa, a country where one in five adults is HIV-positive.
Single donor into 2 men - Controversial:
- Recipients infected with virus strain of donor - may be different
- May increase their resistance to HAART
- HIV positive organs damaged and less durable

BUT...
Positive to positive Tx last resort

So far program doing well...minimal immunosuppress needed thus cheap too

What would you do?
Future plans

- Employ more co-ordinators – *Spanish style*
- Education – starting young!
- Alternative sources of organs - HIV
- Registries – transparency maintaining public access to regularly updated data collection
- Dispel myths
- May need to individualise depending on attitudes, cultural and socio-economic issues