Testing A Minimum Notification Criteria To Increase Potential Donor Referral In An Emergency Department: An Italian Hospital Experience In ACCORD Joint Action

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National Health System Blood And Safety, London UK: Roberts M.
The Joint Action

EU Organ Directive 2010/53/EU

ACCORD: Achieving Comprehensive Coordination in Organ Donation in EU

![ACCORD Logo](link)

WORKPLAN

**HORIZONTAL WORK PACKAGES**

1. Coordination
2. Dissemination
3. Evaluation

**CORE WORK PACKAGES**

4. Living donor registries
5. ICU and DTC collaboration
6. Twinning on organ donation Transplantation

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*Note: The diagram includes flags representing different countries involved in the programs.*
Italian Hospitals and ACCORD

San Camillo – Forlanini Hospital - Rome
San Camillo Organ Donation Team

San Camillo – Forlanini Hospital - Rome

Members Organ Donation Team:

- Clinical Leads: 2
- Dedicated Nurse: 1
- Collaborating Nurses: 10

<table>
<thead>
<tr>
<th></th>
<th>ICU* Beds</th>
<th>Nr of actual DBD Donors (2013)</th>
<th>Nr of Corneal Tissue Donors (2013)</th>
<th>Nr of actual DCD Donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Camillo Hospital</td>
<td>34</td>
<td>13</td>
<td>40</td>
<td>-----</td>
</tr>
</tbody>
</table>

* Shock & Trauma ICU, Cardiac Surgery ICU and Neuro Surgical ICU

**San Camillo – Forlanini Hospital - Rome**
WP5 Methods:

1. Study on the Variations in End of Life Care Pathways for patients with devastating brain injury in Europe

2. Improvement Methodology Training and implementation: PDSA Cycle
### Results EOL Study: General Information

#### 28 Audited Patients

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-34</td>
<td>3</td>
<td>10,7</td>
</tr>
<tr>
<td>35-49</td>
<td>2</td>
<td>7,1</td>
</tr>
<tr>
<td>50-59</td>
<td>1</td>
<td>3,6</td>
</tr>
<tr>
<td>60-69</td>
<td>5</td>
<td>17,9</td>
</tr>
<tr>
<td>70+</td>
<td>17</td>
<td>60,7</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100,0</td>
</tr>
</tbody>
</table>

#### Main general cause of death

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral Neoplasm</td>
<td>1</td>
<td>3,6</td>
</tr>
<tr>
<td>Cerebrovascular Accidents</td>
<td>17</td>
<td>60,7</td>
</tr>
<tr>
<td>Trauma</td>
<td>10</td>
<td>35,7</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100,0</td>
</tr>
</tbody>
</table>
## Patterns of Care

### 28 Audited Patients

<table>
<thead>
<tr>
<th>Statement best describing the care of the patient during his/her final illness</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full active treatment on ICU until diagnosis of BD</td>
<td>16</td>
<td>(57,1%)</td>
</tr>
<tr>
<td>Full active treatment until unexpected cardiac arrest from which the patient could not be resuscitated</td>
<td>- -</td>
<td>-</td>
</tr>
<tr>
<td>Admitted to ICU to incorporate organ donation into end-of-life care</td>
<td>- -</td>
<td>-</td>
</tr>
<tr>
<td>Full active treatment on ICU until the decision of withdrawal or limiting life sustaining therapy was made</td>
<td>2</td>
<td>(7,1%)</td>
</tr>
<tr>
<td>Not admitted or admitted to ICU but subsequently discharged</td>
<td>10</td>
<td>(35,7%)</td>
</tr>
</tbody>
</table>
## Results EOL Study: General Information

### Unit where death was confirmed

<table>
<thead>
<tr>
<th>Unit where death was confirmed</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Intensive Care</td>
<td>13</td>
<td>46.4</td>
</tr>
<tr>
<td>Specialised Neurosurgical Intensive Care</td>
<td>4</td>
<td>14.3</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>5</td>
<td>17.9</td>
</tr>
<tr>
<td>Medical Ward</td>
<td>4</td>
<td>14.3</td>
</tr>
<tr>
<td>Stroke Unit</td>
<td>1</td>
<td>3.6</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>28</td>
<td>100.0</td>
</tr>
</tbody>
</table>

28 Audited Patients
Where are Potential Donors lost?

28 Audited Patients

Note: annotated percentages represent the percentage of remaining patients that are lost at each stage, not from all audited patients.
Intubation & Ventilation

Was the patient intubated and receiving mechanical ventilation via an endotracheal or tracheostomy tube at the time of death or at the time of the decision to withdraw or limit life sustaining treatment

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>10</td>
<td>(35.7%)</td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>(64.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Note: annotated percentages represent the percentage of remaining patients that are lost at each stage, not from all audited patients.
Intubation & Ventilation

What was the reason for the patient not being intubated and receiving mechanical ventilation at that moment

<table>
<thead>
<tr>
<th>Reason</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not appropriate</td>
<td>4</td>
<td>(40%)</td>
</tr>
<tr>
<td>Not needed</td>
<td>1</td>
<td>(10%)</td>
</tr>
<tr>
<td>Not of overall benefit to the patient due to severity of the acute event</td>
<td>5</td>
<td>(50%)</td>
</tr>
</tbody>
</table>

**DBD pathway**

Note: annotated percentages represent the percentage of remaining patients that are lost at each stage, not from all audited patients.
Identification and Referral

Was the patient intubated and receiving mechanical ventilation via an endotracheal or tracheostomy tube at the time of death or at the time of the decision to withdraw or limit life sustaining treatment

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>10</td>
<td>35.7%</td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>64.3%</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100%</td>
</tr>
</tbody>
</table>

Was the patient referred to a Key donation Person

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>3</td>
<td>16.7%</td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>83.3%</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>100%</td>
</tr>
</tbody>
</table>
Mapping Current Hospital Donation Process:

START

Patient Intubated → Identification → Referral → Brain Testing → Family Approch → Donation

FINISH

Devastating Brain Injury

Endotracheal Intubation → Further Treatment

No Endotracheal Intubation → MINIMAL CARE

Non systematic and timely referral

*The Potential Donor is identified by Organ Donation Team the day after admission in the hospital with the ED patient database (GIPSE).
Emergency Department Potential Donors are not Identified and are not Referred to the Organ Donation Team

- Absence specific education in donation
- Unfamiliar with Role Organ Donation Team
- Absence of protocols for potential donors from the ED
- Donation is not part of EOL care planning

**Lack of training in donation**

**Donation potential not part of EOL care concept**
Barrier in donation to address:
The lack of an identification and referral system of the person with devastating brain injury to the donor transplantation coordinator.
Study Aim:

To test the introduction of a minimum notification criteria (G.I.V.E.) in the Emergency Department (ED)

Hypothesis:
The use of clinical triggers will result in a 100% referral rate from the ED.
Methods

Plan Do Study Act Cycle
1. What are you trying to Accomplish?

2. How will we know that a Change is an Improvement?

3. What change can we make that will Result in Improvement?

The “Doing Part”:

Lessons Learned
- recognize mistakes
- observe what works
- document them
- share them

The “Thinking Part”:

A MODEL FOR LEARNING & CHANGE

The Model for Improvement

San Camillo-Rome:
- Level One Trauma Center
- 870 beds
- ED admissions: 78,701*

Emergency Department
Partecipants: ED Clinical Staff
PDSA Cycle Testing: Feb-April 2014

*Adult and Pediatric ED admissions 2013: GIPSE: ED Patiente Database - San Camillo Hospital Rome
Minimum Notification Criteria

- Benchmarking & References
Minimum Notification Criteria

- Benchmarking & References
- Establish clinical and time triggers:
  - Glasgow Coma Score < 8
  - Intubation & Ventilation / End Of Life
  - Referral < 3 Hours from ED Arrival
- GIVE POSTER

Good Practice Guidelines in the process of Organ Ont, Mantesanz et al, 2012
Timely Identification and Referral of Potential Organ Donors, NHS, 2012
NICE clinical guideline 135, 2011
Shafer et al, 2006
Erle 2006
Neate S et al, 2012
THE ANZICS - 2013
Organ Donation Campagne Poster 2013 - http://www.crtlazio.org/
Have you given your patient the opportunity to G.I.V.E.?

In which you are assessing:

G
GCS < 8
Not explained by Sedation

I
Intubation

V
Ventilation

E
End of Life Care

OR

Every patient with a devastating and irrecoverable brain injury:

Traumatic Brain Injury
Cerebral Haemorrhage
Anoxia / Hypoxic Brain injury
Ischemic Brain Injury

Regardless of the age of the person

Call the Local Donation Procurement Service within 3 hours after the patient’s arrival in the ED:

Internal: 3426  Mobile: 346 2355951
Mon- Fri: h 8.00 - h 20.00  Sat: h 8.00 - h 14.00

Night and Pre/Festivities: Contact the coordinator on call as illustrated below
Have you given your patient the opportunity to G.I.V.E.?

G
GCS < 8
Not explained by Sedation

I
Intubation

V
Ventilation

OR

E
End of Life Care

Every patient with a devastating and irrecoverable brain injury:

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Data Collection

- PDSA measurement sheet*
- Improvement measures:
  - Referral Rate
  - Clinical Triggers Compliance
  - Timely Referral
- Biweekly audit PDSA Cycle results

*Adapted from: Improvement Through Collaboration: A reference guide for teams in organ and tissue donation
Canadian Council for Donation and Transplantation, 2007
PDSA Cycle Testing

• Consensus meeting with all stakeholders
• Written memo to ED Staff

Theories, hunches, best practices and change concepts

* Improvement Through Collaboration: A reference guide for teams in organ and tissue donation
Canadian Council for Donation and Transplantation, 2007
Referral Rate from the ED:
Feb – April 2014

ED Patients with Devastating Brain Injury: 24
Referred Patients: 18
### Results

**Gender Distribution**
- **Male**: 61%
- **Female**: 39%

**Potential Organ Donor Age**
- **Average Age**: 64.4 years

**Number of POD**

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of POD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>84</td>
</tr>
<tr>
<td>2</td>
<td>42</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>89</td>
</tr>
<tr>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>6</td>
<td>55</td>
</tr>
<tr>
<td>7</td>
<td>71</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>9</td>
<td>74</td>
</tr>
<tr>
<td>10</td>
<td>51</td>
</tr>
<tr>
<td>11</td>
<td>75</td>
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<tr>
<td>12</td>
<td>61</td>
</tr>
<tr>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td>14</td>
<td>68</td>
</tr>
<tr>
<td>15</td>
<td>77</td>
</tr>
<tr>
<td>16</td>
<td>73</td>
</tr>
<tr>
<td>17</td>
<td>47</td>
</tr>
<tr>
<td>18</td>
<td>68</td>
</tr>
</tbody>
</table>
Results

Referring Clinicians Potential Organ Donor

Number of Referrals

<table>
<thead>
<tr>
<th>Number</th>
<th>ED Physician</th>
<th>ED Intensivist</th>
<th>ED Nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>
Results

Compliance to Clinical Triggers

Clinical Trigger: Glasgow Coma Score < 8

Number of POD Referred

GCS
Results

Compliance to Clinical Triggers

Clinical Triggers:
Intubation & Ventilation, End of Life

<table>
<thead>
<tr>
<th>Number of POD</th>
<th>Intubation &amp; Ventilation</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>4</td>
</tr>
</tbody>
</table>
Results

Compliance to Time Trigger

![Graph showing POD Referral within 3 Hours]

- Number of POD Referred vs. Hours
- POD Referral within 3 Hours
- Key points: 5.04, 0.44, 1.19, 0.59, 2.42, 0.35, 2.55, 2.15, 1.18, 0.56, 1.11, 2.01, 4.01, 1.19, 1.37, 1.14, 0.45
Pitfalls

- Lack of motivation ED Nurses and Physicians
- Non attendance Biweekly audit of the results
- Low admission rate severe brain injury patients
- Overcrowding ED
Conclusions

- GIVE increases communication between Transplant Coordinators and Intensivists
- Education in organ donation for ED Nurses and ED Physicians is mandatory
- Improvement methodology key structure to test changes in donation
Thank you for this Opportunity

San Camillo – Forlanini Hospital
Rome