From Connected Care to Integrated Care: A Work In Progress

CONNECARE – Assuta - Maccabi

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• One of the most problematic interfaces, with perhaps the greatest chance for catastrophic consequences due to lack of communication and coordination, is the hospital-community care interface.

• In the US nearly one in five Medicare patients discharged from a hospital—approximately 2.6 million seniors—are readmitted within 30 days, at a cost of over $26 billion every year.

• When effectively performed, transitions of care present an opportunity to decrease patient suffering, reduce complication and lower the cost of care

• "Integrated Care" purports to address the problem, although, to date, a comprehensive solution has not yet been achieved.
Personalised Connected Care for Complex Chronic Patients

*Horizon 2020 Research and Innovation Project*

**CONNECARE** aims to develop and deploy a new model for ICT supported Integrated Care for Complex Chronic Patients that will address the Hospital-Community Divide.
A Digital Health Platform

2 Major ICT Components

• Smart Adaptive Case Management (SACM) for professionals
  • Adaptive planning of clinical processes tailored to each patient
  • Collaborative management of all involved actors in each step
  • Management of patient’s information to better handle her/his case
  • Decision support to clinicians in each step of the process

• Self-Management System (SMS) for patients
  • Patient’s monitoring (e.g., health status, activities, next tasks)
  • Interaction and communication between patient and professionals
  • Smart support to training, recommendations and alerts
The CONNECARE “System” will be implemented in 3 Countries; Spain, Israel and the Netherlands.
Some of the building blocks for the new Integrated Care Model are already in advanced stages of implementation by some Consortium Partners.
The first public hospital built in Israel in 40 years – opening in June 2017
INTEGRATED CARE VISION

“A Community that has a hospital”

● Innovative, advanced general public hospital, affiliated to a medical school
● Full integration with the community’s medical services, meeting the special needs of the patients and their families, both within the hospital and at home
● Integration with Social Services and other support services in the municipality
● All 4 HMOs in Israel have agreed to participate in this model
● The Municipality and the Department of Social Services are committed to this vision
System for Insuring Seamless Information Exchange Between the Hospital and the Community

- **Patient PHR**
- **EMR INTEROPERABILITY**
- **Transfer and Exchange of Information - PROBLEM LIST**
- **System for data exchange between EMRs**

**HOSPITAL**
- **EMR Hospital**

**COMMUNITY**
- **EMR Community**
- **Video Consulting**
- **Coordinate Discharge**
PARTNERS

**Basic Principles**
- Communication among Partners
- Technology Infrastructure
- Telecare
- Appropriate and Timely Monitoring
- Real time Data Flow
- Enabling Decision-Making
“Compass”
Continuity of Care Program
Integrating the Hospital - Community Transition
Integrated Transitional Care for All Complex Patients Discharged from Hospital

The Compass Program

- 5 Regional Compass Units
- 700 monthly referrals
- One address for all community providers
- Multidisciplinary staff

Compass Overview
- A care framework for complex patients in the community in partnership with the primary care doctor
- Coordination of care among all community providers
- Initiate contact with the patient within 48 hours
- Home visit when needed

At Risk population
- Proactive identification of the population
- Development of an intervention plan according to patient needs

Mental Health
- Intervention plan from hospital discharge until absorption of the patient in mental health services in the community
- The staff includes nurses and social workers with mental health expertise
- The staff coordinates and provides care, according to need
Project Goals

Assure Continuity of Care
For Patients discharged from hospital to the community

Improve Quality of Care
For complex patients at risk of deterioration and repeat hospitalizations

Standardize Work Processes
Care for Complex patients with emphasis on Home care services

Improve the Service Experience
For the patient, the family and the caregiver

Intelligent Use of community Resources
Prevent duplication in coordination and care
Continuity of Care Model

Hospital Discharge

- Complex Patient (2500)
- Uncomplicated Patient (5000)

Review nurse

- Compass
  - Initiate
    - At risk Population
    - Continuity of Mental health services
  - Respond
    - Home Care
    - MOMA
    - Post discharge visit

Continuity Nurse

Community
The Added Value

Primary Care doctor

- A single and clear address for the doctor in caring for complex patients
- Efficient work processes
- Regulate load in clinic
- Professional support in caring for complex patients

Patient

- Improve quality medical care
- Prevent deterioration in medical/functional status
- Prevent hospitalization
- Improve service experience

Organization

- Intelligent use of community resources
- Quality appropriate medical care
- Standardized work processes in caring for complex patients
- Integration among all providers
System Architecture
### Post Hospitalization estimation

**Release Date** 02/09/2015  
**Hospitalization Reason**

<table>
<thead>
<tr>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-demographic details update needed</td>
</tr>
<tr>
<td>Medical release letter</td>
</tr>
<tr>
<td>Nursing release letter</td>
</tr>
<tr>
<td>Support and care system exist</td>
</tr>
<tr>
<td>Recommendations for medication changes</td>
</tr>
<tr>
<td>Continuing Care needed at Nurse’s clinic</td>
</tr>
<tr>
<td>Reference for further multidisciplinary treatment</td>
</tr>
</tbody>
</table>

**Result:**

**Home Care suitability**

<table>
<thead>
<tr>
<th>Details</th>
<th>YES</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to leave his home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support and care system exist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex treatments Needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High frequency treatment needed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Result:**
Tasks Coordination

Compass Assesses and coordinates

- Home care unit
- Stoma
- IV
- ...

Medical Record DB

Tasks Table

Compass

Home Care

Doctor

Nurse

Hospital
RESULTS

Readmission Rates

- Compass Care
- No Compass Care
- All Maccabi

10.0% 12.0% 14.0% 16.0% 18.0% 20.0% 22.0% 24.0% 26.0%

15 July 15 Aug 15 Sep 15 Oct 15 Nov 15 Dec
### RESULTS

July-Dec 2015

<table>
<thead>
<tr>
<th>Region</th>
<th>No Contact Readm</th>
<th>Compass Care readm</th>
<th>% Contacted</th>
<th>Percent Hospitalizations</th>
<th>Hospitalizations /1000</th>
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</thead>
<tbody>
<tr>
<td>J’slem-Valley</td>
<td>19.0%</td>
<td>17.3%</td>
<td>64.6%</td>
<td>17.9%</td>
<td>7.9</td>
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<tr>
<td>Sharon</td>
<td>20.3%</td>
<td>18.2%</td>
<td>68.8%</td>
<td>18.9%</td>
<td>7.6</td>
</tr>
<tr>
<td>Center</td>
<td>26.0%</td>
<td>19.3%</td>
<td>67.7%</td>
<td>21.4%</td>
<td>7.1</td>
</tr>
<tr>
<td>South</td>
<td>22.8%</td>
<td>16.2%</td>
<td>64.3%</td>
<td>18.5%</td>
<td>9.2</td>
</tr>
<tr>
<td>North</td>
<td>20.4%</td>
<td>16.5%</td>
<td>62.6%</td>
<td>17.9%</td>
<td>10.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>21.5%</strong></td>
<td><strong>17.5%</strong></td>
<td><strong>65.5%</strong></td>
<td><strong>18.9%</strong></td>
<td><strong>8.3</strong></td>
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</tbody>
</table>

Patients receiving integrated transitional care by Compass Units had 4% fewer readmissions
## Costs - 6 months pre and post Intervention

<table>
<thead>
<tr>
<th>Total costs</th>
<th>Mac Clinics</th>
<th>Pvt clinics</th>
<th>Drugs</th>
<th>Hospital</th>
<th>Dr visits</th>
<th>Number</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>₪ 2,392</td>
<td>₪ 77</td>
<td>₪ 153</td>
<td>₪ 589</td>
<td>₪ 1,335</td>
<td>₪ 164</td>
<td>13,480</td>
<td>No Intervention</td>
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<tr>
<td>₪ 4,427</td>
<td>₪ 213</td>
<td>₪ 316</td>
<td>₪ 643</td>
<td>₪ 2,966</td>
<td>₪ 163</td>
<td>6,490</td>
<td>Home visit only</td>
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<tr>
<td>₪ 3,439</td>
<td>₪ 239</td>
<td>₪ 306</td>
<td>₪ 668</td>
<td>₪ 1,964</td>
<td>₪ 155</td>
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<td>Doctor Clinic only</td>
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</tbody>
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Percent Difference
-22% 12% -3% 4% -34% -5%

<table>
<thead>
<tr>
<th>Total costs</th>
<th>Mac Clinics</th>
<th>Pvt clinics</th>
<th>Drugs</th>
<th>Hospital</th>
<th>Dr visits</th>
<th>Number</th>
<th>Population</th>
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</thead>
<tbody>
<tr>
<td>₪ 2,863</td>
<td>₪ 95</td>
<td>₪ 196</td>
<td>₪ 498</td>
<td>₪ 1,778</td>
<td>₪ 200</td>
<td>648</td>
<td>Pre intervention</td>
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<tr>
<td>₪ 2,348</td>
<td>₪ 95</td>
<td>₪ 191</td>
<td>₪ 557</td>
<td>₪ 1,217</td>
<td>₪ 191</td>
<td></td>
<td>Post intervention</td>
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</tbody>
</table>

Percent Difference
-18% 0% -2% 12% -32% -4%

<table>
<thead>
<tr>
<th>Total costs</th>
<th>Mac Clinics</th>
<th>Pvt clinics</th>
<th>Drugs</th>
<th>Hospital</th>
<th>Dr visits</th>
<th>Number</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>₪ 5,207</td>
<td>₪ 223</td>
<td>₪ 302</td>
<td>₪ 734</td>
<td>₪ 3,575</td>
<td>₪ 215</td>
<td>760</td>
<td>Home Visit + Doctor Clinic</td>
</tr>
<tr>
<td>₪ 4,221</td>
<td>₪ 267</td>
<td>₪ 363</td>
<td>₪ 784</td>
<td>₪ 2,444</td>
<td>₪ 210</td>
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</tbody>
</table>

Percent Difference
-19% 20% 20% 7% -32% -3%

**Reduction of hospital costs of 32% for complex co-morbid patients receiving integrated transitional care**
Assuta Ashdod will open its doors in this Summer
CONNECARE will be implemented in Assuta and Maccabi in the Fall
Assuta Ashdod Hospital

Community-Maccabi
Patient Self Management System
The CONNECARE pilots in Israel, Catalonia and the Netherlands will enable a robust evaluation of the integrated care model, thus providing the foundation for a potentially transferable solution.
Some Concluding Insights

• The journey from connected care to integrated care requires a cultural transformation
  • Patient Centered Holistic Approach
  • Commitment to eliminating organizational barriers
  • Hospital and Community health and social care staff are one inseparable team

• All of the partners need to work together to put new work and communication processes in place

• ICT is a crucial enabler – not only for transfer of information – but for ongoing collaboration and integration

• Despite the heterogeneity of different healthcare systems, medical and healthcare professionals’ behavior and attitudes and the basic processes required for integration are surprisingly similar

• Patients and their families are ultimately the true integrators in the long run – they need to be a recognized part of the healthcare team
Thank You!