Population Health Planning and Forecasting in Acute and Chronic Disease

Hosted by:

Jacquie White
Deputy Director for LTC, Older People & End of Life Care
NHS England

Dr. Eileen Pepler
The Pepler Group

Claire Cordeaux
Executive Director
SIMUL8 Corporation

Brittany Hagedorn
US Healthcare Lead
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Agenda

Introductions
  Jacquie White
  Dr Eileen Pepler
  Claire Cordeaux

Canada and UK Health Systems: Dr. Eileen Pepler
NHS England and New Models of Care: Jacquie White
Simulation/Population Health Modelling to inform long term conditions: Claire Cordeaux
Reflections from Canada: Dr Eileen Pepler
Discussion
How did this conversation happen?
Global challenges

**Increasing demand**
- Rise of long term conditions and multi-morbidity: physical and mental
- Ageing population
- Increasing system wide expectations: access, treatment, cure not care

**Supply pressures**
- Dependence on system
- Hospital and medico-centric care models
- Workforce – recruitment & retention, ageing, diversity and culture
- Fragmentation of care in health and to social care
- Crisis curve

**Solution – Transforming what we buy and how we buy it:**
- Person centred co-ordinated care – whole person approach to improve outcomes and value
Canadian and UK systems compared
## Canada and the UK

<table>
<thead>
<tr>
<th>Country</th>
<th>Life expectancy</th>
<th>Infant mortality rate</th>
<th>Physicians per 1000 people</th>
<th>Nurses per 1000 people</th>
<th>Per capita expenditure on health (USD)</th>
<th>% of government revenue spent on health</th>
<th>% of health costs paid by government</th>
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</thead>
<tbody>
<tr>
<td>Australia</td>
<td>81.4</td>
<td>4.2</td>
<td>2.8</td>
<td>9.7</td>
<td>3.137</td>
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<td>Canada</td>
<td>81.3</td>
<td>4.5</td>
<td>2.2</td>
<td>9.0</td>
<td>3.895</td>
<td>16.7</td>
<td>69.8</td>
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<tr>
<td>France</td>
<td>81.0</td>
<td>4.0</td>
<td>3.4</td>
<td>7.7</td>
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<td>69.0</td>
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<td>Germany</td>
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<td>3.8</td>
<td>3.5</td>
<td>9.9</td>
<td>3.588</td>
<td>17.6</td>
<td>66.9</td>
</tr>
<tr>
<td>Japan</td>
<td>82.6</td>
<td>2.6</td>
<td>2.1</td>
<td>9.4</td>
<td>2.581</td>
<td>16.4</td>
<td>61.3</td>
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<tr>
<td>Sweden</td>
<td>81.0</td>
<td>2.5</td>
<td>3.6</td>
<td>10.8</td>
<td>3.323</td>
<td>13.6</td>
<td>81.7</td>
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<tr>
<td>UK</td>
<td>79.1</td>
<td>4.8</td>
<td>2.5</td>
<td>10.0</td>
<td>2.992</td>
<td>15.8</td>
<td>70.7</td>
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<tr>
<td>US</td>
<td>78.1</td>
<td>6.9</td>
<td>2.4</td>
<td>10.6</td>
<td>7.290</td>
<td>16.5</td>
<td>45.4</td>
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</tbody>
</table>

Source: OECD
Canada and the UK

Source: OECD
Similar Challenges

• On September 16, 2004, the Canadian government announced $41 billion over the next 10 years of new federal funding in support of the action plan on health.
• That Health Accord expired in 2014 and the federal government did not negotiate funding leading up to 2015—just measurement, accountability and best practices.
• The funding is set—an increase of six percent in the first three years, and a minimum of three percent in the remaining seven years.
• In 2015 new government---another shift, new thinking, new demands for non-physician centric models, rural, aboriginal, vulnerable service improvements and workforce aging.............
Need to Reset Our Delivery System
Resetting—Shift to Population Health

- New Models of Care—strategic methodology
- Population Shifts—aging, chronic disease, etc.
- Workforce Implications---existing versus future
- Shifting dynamics between patients and clinicians
- Self-care management
- Impact of Technology enabled care
- Workforce arrangements demand co-operation between very different workforce groups
- Coordinator or ‘navigator’ roles become crucial in a complex fragmented landscape
- Thinking outside the ‘box’ and keeping the welfare of the patient at the forefront
- Learning from other jurisdictions--- NHS Long Term Conditions Program/Simulation/Funding
NHS England Approach
The NHS England programme

Definitions

• Person not patient
• Long Term Conditions not chronic disease
• Whole person not separation of physical, mental, emotional and social needs
• Co-ordinated care not integrated care
Tackling the priorities in the NHS

- Empowering patients and informal carers to be full partners in care
- Whole person focus
- Life course approach to care needs
- Strengthening Primary and Community Care
- Older people with increasingly complex needs including frailty
- New care models moving away from purely medical, hospital-centric focus
- Strengthen key enablers – IT, Workforce, Technology
- Need for a new purchaser/provider/funding model
LTC Framework: House of Care
Outcomes and benefits

• More activated patients have 8% lower costs in the base year and 21% lower costs in the following year than less activated patients
• Health coaching can yield a 63% cost saving from reduced clinical time, giving a potential annual saving of £12,438 per FTE from a training cost of £400
• Coaching and care co-ordination has shown to reduce emergency admissions by 24%
• Improved medication adherence improves outcomes and yields efficiencies, for instance in 6000 adults in the UK with Cystic Fibrosis, could save more than £100 million over 5-years
• Between 20% and 30% of hospital admissions in over 85’s could be prevented by proactive case finding, frailty assessment, care planning and use of services outside of hospital
Long Term Conditions Year of Care Commissioning Programme

- Engagement and commitment across the system
  - Patients, Clinicians, Managers, Senior leaders
  - Joint vision and narrative
  - Shared benefits
- Whole Population Analysis
  - Understanding the population
  - Risk profiling and segmentation
- Patient & Service Selection
- Planning for Change
  - Simulation Modelling
  - Workforce
  - Capitated Budget
- Delivery Models
  - Service redesign
- Contracting and performance monitoring
National Population Analysis

Prevalence:
- There are 16 million with one LTC, 10 million with two LTCs, 1 million people in England with frailty, and 0.5 million approaching end of life

Quality of life:
- The larger the number of co-morbidities a patient has the lower their quality of life
- Increasing evidence of over-treatment and harm
- Social isolation/loneliness a risk factor for mortality in over 75s
National Population Analysis

Impact on the health system:

– The average person with a LTC in the UK spends less than 4 hours a year with a health professional
– Research has shown that 33% of all GP consultations are now with people with multi-morbidity
– The number of days in a hospital bed increases strongly with age: those under 40 account for 1 million emergency bed days and those over 85 account for over 7 million emergency bed days
– Three-fold increase in health costs across all care sectors due to frailty
– 1300 people die each day and 25% of all hospital beds are occupied by somebody who is dying
Multi Morbidity is Common:

- Asthma (n=4169)
- Atrial Fibrillation (n=2716)
- Cancer (n=3486)
- Chronic Kidney Disease (n=5807)
- Chronic Obstructive Pulmonary Disease (n=2217)
- Coronary Heart Disease (n=3556)
- Dementia (n=829)
- Depression (n=5255)
- Diabetes (n=4474)
- Epilepsy (n=1041)
- Heart Failure (n=898)
- Hypertension (n=10682)
- Hypothyroidism (n=2326)
- Learning Disabilities (n=184)
- Mental Health (n=398)
- Osteoporosis (n=1619)
- Peripheral Arterial Disease (n=1194)
- Rheumatoid Arthritis (n=818)
- Stroke (n=1121)
The total health and social care cost is strongly related to multi morbidity:
People with complex health and care needs appear to demonstrate a ‘complex curve’:
Long Term Conditions Year of Care
Service Bundle:

<table>
<thead>
<tr>
<th>Mental Health</th>
<th>Acute</th>
<th>Community</th>
<th>Social Care</th>
<th>Primary care</th>
<th>Voluntary/Independent</th>
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</thead>
<tbody>
<tr>
<td>Services covered by national or cost &amp; volume tariffs, or simple to split block contracts</td>
<td>Services covered by national or cost &amp; volume tariffs, or simple to split block contracts</td>
<td>All community services</td>
<td>Reablement, adult services &amp; public health</td>
<td>GP Practice primary care services (incl. prescribing)</td>
<td>Include within capitated budget</td>
</tr>
<tr>
<td>Other relevant pathways and packages e.g. mental health care package, rehabilitation, palliative care and end of life pathways</td>
<td>Personal budgets, personal health budgets and direct payments</td>
<td>Block contracts that can’t easily be split</td>
<td>Means-tested services (incl. residential)</td>
<td>Non-GP Practice primary care (e.g. dental)</td>
<td>Include within capitated budget</td>
</tr>
<tr>
<td>Block contracts that can’t easily be split</td>
<td>Co-commissioned services</td>
<td>Continuing health care</td>
<td>Co-commissioned services</td>
<td>Co-commissioned services</td>
<td>All services (including preventive social care services)</td>
</tr>
<tr>
<td>NHS England as commissioner (specialised, offender, military)</td>
<td>High cost drugs; Critical care</td>
<td>Exclude from capitated budget</td>
<td>Exclude from capitated budget</td>
<td>Exclude from capitated budget</td>
<td>Exclude from capitated budget</td>
</tr>
</tbody>
</table>
Delivery Models

The service models being developed by our sites are essentially similar but differ to match local conditions.

Similarities include:
• Single point of access
• Care planning and shared care record
• Supported self management
• Care co-ordination
• Community multi-disciplinary team based around primary care,
• Wider neighbourhood support including specialist practitioners, therapists
• Recovery, Rehabilitation and Reablement “services”
• Care navigators and voluntary sector as a key enabler.

Differences include:
• Whole population or selected cohorts
• Formation of new organisations
• New delivery models within and across existing organisations
The role of simulation
Whole system impact of change

Scenario Generator

What if?

Demand from Demographics

Patient journeys by age/condition/need

Whole system view including costs, resources, queues

What if?
Predictive Population Analytics

HIV example

1.23m x HIV 0.465% = 2531
Scenario Generator Functional Map

Pathways
- Maternity
- Planned
- Urgent
- Mental Health
- Social Care

Scenarios
- Population
  - Demography
  - Prevalence

Whole system model
- Referral patterns
- Capacity
- Duration

Simulation results

Service points, flows & waits

Service models

Constrained resources

Population
Demographic weighting
Prevalence/Influencing factors

Logo (SIMUL8 Healthcare and Pepler Group)
Example: North Staffordshire and Stoke on Trent Simulation

• What does current unscheduled care flow look like?
• What will it look like in 5 years with ageing population?
• What is the impact of increasing referrals to home care direct from hospital?

Age-banded population projections → Disease prevalence → Demand → Pathway process flow
Initial Model
Baseline Results – 10 run trial

- Ran the model through with the received population data
- Set routing percentages so model matches activity data.

<table>
<thead>
<tr>
<th>Aea</th>
<th>NHS data</th>
<th>Scenario Generator</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+E</td>
<td>108,472</td>
<td>125,302 (17,026 out-of-area)</td>
<td></td>
</tr>
<tr>
<td>A&amp;E out of area (5% S Staffs)</td>
<td>17,000</td>
<td></td>
<td>0.99864512</td>
</tr>
<tr>
<td>Total NEL Admissions</td>
<td>84,297</td>
<td>84,470</td>
<td>1.00205227</td>
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<tr>
<td>Elective admissions</td>
<td>12,674</td>
<td>12,710</td>
<td>1.00284046</td>
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<tr>
<td>Daycase</td>
<td>49,983</td>
<td>49,895</td>
<td>0.9982394</td>
</tr>
<tr>
<td>Discharges to Community Hospital</td>
<td>4560</td>
<td>4507</td>
<td>0.98837719</td>
</tr>
<tr>
<td>Discharge to social care teams (Stoke)</td>
<td>2183</td>
<td>2203</td>
<td>1.0091617</td>
</tr>
<tr>
<td>Discharges from Community Hospital</td>
<td>4347</td>
<td>4430</td>
<td>1.01909363</td>
</tr>
<tr>
<td>Intermediate Care (admission avoidance)</td>
<td>590</td>
<td>581</td>
<td>0.98474576</td>
</tr>
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</table>
## Cost and Length of Stay Assumptions

<table>
<thead>
<tr>
<th>Item</th>
<th>£</th>
<th>LOS</th>
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<tbody>
<tr>
<td>Hospital Bed</td>
<td>£500 a day</td>
<td>AMU/SAU/CDU Inpatient</td>
</tr>
<tr>
<td>Community Hospital Bed</td>
<td>£263 per day</td>
<td>21 days</td>
</tr>
<tr>
<td>Intermediate care</td>
<td>£47 per hour</td>
<td>30 hours</td>
</tr>
<tr>
<td>A&amp;E</td>
<td>£105.5</td>
<td></td>
</tr>
</tbody>
</table>
In 5 years

With population increase

Increase in A&E and admissions +5% over 9 years

+ £11.3m (£1m domiciliary care)
(1% annual inflation)
Home care scenario

- Average 6 week package for rehabilitation
- Other packages average 48 weeks

Scenario:
- Increase direct referrals from hospital – 30% of community hospital referrals
- Average 2 additional days in hospital
- Referrals 10% to complex, 38% maintenance, 51% reablement (North Staffs only)
Home care scenario results

- **£2.6m savings overall**
  - Plus £4m social care
  - Plus 1.3m additional LOS, max bed occupancy + 10, +1% utilisation
  - £7.6m savings community hospital, utilisation reduced by 25%, max bed occupancy minus 90
A Year of Care

9%

39%

40%

22%
A Year of Care – next level

13%

62%

56%

40%
How it works

Long Term Conditions Year of Care Simulation

Patient States

- Low: Current Patients
- Medium: Current Patients
- High: Current Patients
- Very High: Current Patients

Selected Population
NHS BARNET CCG

Simulation Controls
- Population
- Data
- Run Simulation
- Results
- Scenarios
- Help

Total Number of Contacts

<table>
<thead>
<tr>
<th>Acute</th>
<th>Community</th>
<th>GP</th>
<th>Mental Health</th>
<th>Social Care</th>
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</thead>
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<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
What drives the model?

Patients with long term conditions by acuity

- Group patients by level of acuity
- Increasing numbers of long term conditions
Results

Number of Patients

Cost per Patient (£)

Comparison of actual, tariff and reference cost

[Bar charts showing the number of patients, cost per patient, and comparison of actual, tariff, and reference costs.]
Example Results: ED activity

- Activity
- Resource
- Number of Patients in Each State
- Costs
Acute to Rehabilitation

Acute Phase

Higher cost Medical care

“R” point:
Decision to discharge to recovery bed
Transitioning

“L” point
Point of discharge “liberation”

RRR facility
Bed in recovery
- hospital
- community
- Home with support

Discharge
RRR audits identify the point in the acute patient pathway that patients are medically fit for discharge.

“change the tariff at the point when the patients’ needs change and not when they change institution”

Assessment – prescription for recovery primary care, community social care and patient – the “R” point

1 crosses secondary – community, 2. unlocks rehab resource for different models
3. Puts primary care and social care at earliest point in rehab, 4. sustainable discharge
RRR audit - results

- R-point – can be a medical, community/social or patient reason for delay
The Simulation

Rehabilitation, Recovery and Reablement (RRR) Simulation

AM Saturday Week 1

- Stroke
- COPD
- Heart Failure
- Diabetes

Acute Care

Consultant Decision to discharge (R Point)
Actual discharge (L Point)

Home With Support
Community Hospital
Acute Phase Recovery

% of beds available
Acute Phase Beds 700
Recovery Facility Beds 100

SIMUL8 for Healthcare

The Pepler Group

NHS

NHS England
LTC Resources and Tools:

- LTC Improvement Programme
- End of Life Care and LTC Toolkit
- LTC Information Dashboard
- Sign up to LTC Bulletin
- Navigating Health and Care

- LTC Year of Care Commissioning Programme
- The Better Care Exchange
- LTC Stakeholder Map
- My Declaration

- Frailty
- Fire Service as an Asset
- Healthy Ageing Guide
- Care Homes Quick Guides
- Commitment to Carers

Simulation model
Unbundling recovery simulation model
Over to Canada…
Lessons & Applicability to Canada
Scenario Planning – ’what-if’ considers future uncertainties: Enables the linking of strategy to service delivery

While Long-Range Forecasts…
- Extrapolate the impact of known trends and assumptions
- Are important for one year plans
- Are unable to capture the potential impact of key events (e.g., technology breakthrough, capacity and demand changes, government regulatory changes) that could significantly change the system environment for delivery services
- Unable to capture ‘true costs’ for delivering health and social care services

Scenarios…
- Provide a plausible range of future outcomes and help identify the key "trigger" factors/events that can significantly alter the future
- Take a long view over time, usually 5-10-20 years
- Helps to question consensus and "past to future" linear thinking
- Provide options not a single answer
Impact of whole system change – workforce implications

- Using new tools to explore…

- Demand from Demographics
- Patient journeys by age/condition/need
- Whole system view including costs, resources, wait list
Using Predictive Population Analytics to get in Front of the cost curve

Age-banded population projections

Age-banded disease prevalence

3 out of 5 Albertans 18+ are either overweight or obese

Adult w/overweight + Obesity

Over weight 35.2%

Obesity 23.9%

Est. 1,732,000

Source: HCQA Overweight & Obesity in Adult Albertans: A Role for Primary Healthcare July 2015
‘What if’ Scenarios

1. How many children aged 1-15 years with complex needs, stress, anxiety, obesity, diabetes, and mental health, may need to access primary pediatric care services in 2020, 2025 and 2030?

2. What impact do different care stage durations have on cost and resource use for patients with 3+ comorbidities associated with obesity across the continuum of care?

3. What percentage of the population with Type 2 Diabetes had access to a primary care hub and to one-on-one or group sessions led by a nurse practitioner, LPNs, dietitians, or peer coaches in person or virtually?

4. How may increasing population and obesity rates affect future incidence and resource demand over time and what are the workforce implications??
High-Level Overview of Scenarios

1. Pediatrics and Children with Chronic Conditions (1-15 years)
2. Emerging Adults with Addictions/Mental Health Challenges (16-24 years)
3. Adults with Multiple Chronic Conditions (25-64 years)
4. Seniors with 2+ Chronic Conditions, High Risk (65+ years)
5. Frail Seniors with Chronic Conditions, High Risk (75+ years)
6. End of Life
## Business Challenge

- In 2011, the client wished to begin laying the groundwork for a strategic transformation in response to potential reforms to providing care to immigrant women who had were without ‘papers’ and had no status, and no care cards or waiting for deportation,
- Due to the inherent uncertainty around reform and future developments to the change in immigrant status and the ‘high risk pregnancy’ population that the organization served, the client required a scenario planning approach that allowed for different strategic directions given various future scenarios
- The key objective for Project 2011 was to provide a longer-term vision of the costs and possible strategic options

## Project Approach

- Developed a long-term vision of partnerships between downtown hospitals for delivering immigrant and refugee care services
- Provided an assessment of new capabilities compared to future capabilities needed
- Developed a portfolio of strategic options for responding to changing federal government conditions over the next decade through stakeholder workshops
- Created a critical decision path for choosing among the strategic options

## Client Benefits

- Increased strategic planning to address funding issues, loss revenue, physician collaboration
- Comprehensive understanding of immigrant and refugee needs served for future service delivery development
- Path to transformation that accounts for and adjusts to changing federal government regulations, provincial government, and local provider/funder conditions
- Provincial government committed funding for future immigrant and refugee care
Type of Project: Future Scenario Planning
Linking Food Banks to Chronic Disease

Business Challenge

- Increased awareness of people using Food Banks and the link between health behaviours and health outcomes. Moreover, from a local perspective the report highlights that health behaviours and health outcomes, regarding mental illness, addictions, obesity, diabetes, smoking and cardiovascular disease, oral care.
- A multi-organization partnership explored the link between food banks and chronic disease and could a new way of delivering services to this population group change behaviours and improve outcomes.
- Specifically if a change to access to primary care health services could show a reduction in emergency room visits, hospitalization, a decrease in obesity and improved self care management for diabetes.

Project Approach

- Activity from population projections, age-related, immigration and ethnic factors, income, and prevalence based data for chronic diseases are all factors shown to influence demand. Thus, a review was conducted of the global, national, provincial and local literature using search terms such food insecurity, food distribution, homelessness and poverty, housing affordability, income and food bank users.
- Several scenarios developed and socialized with providers and community stakeholders

Client Benefits

- A demonstration of the scenario tool (Scenario Generator) was given to the project team highlighting the economic benefits of implementing a Nurse Practitioner Led Clinic. Additionally, a power point presentation
- Identification of partnerships and possible marketing solutions to key stakeholders and potential community and corporate partners.
Demonstration Pilot Goals: Improving Individual and System Health Outcomes

- Incidence of chronic disease is driven by:
  - Non-modifiable factors (age, gender, family history, and ethnicity)
  - Modifiable factors (individual behaviours + environmental factors)

Project Focus:

- Improving Outcomes by managing chronic disease risk factors, dietary patterns, physical and primary care services

- Unhealthy diet (elevated cholesterol, high blood pressure)
- Physical Inactivity (Energy Imbalance & Food Intake)
- Limited Access to primary health care services
- Pre-Diabetes and Type 2 (obesity & weight gain)
- High-risk alcohol, substance abuse and tobacco use
Create a simulation that projects the resource cost savings related to PCS and shows the impact on ED visits.
Family Health Team + Nurse Led Practitioner Clinic Pilot – 12 months
Type of Project: Future Scenario Planning
Improving Outcomes for Children & Youth Mental Health Services

Business Challenge
To increase access to children, youth and their families to mental health and addiction services across SW Ontario.
Evaluate the duplication of resources, activities and eliminate and/or reduce the fragmentation and hand-offs between providers to ensure continuity of services for families accessing mental health services.
Identify opportunities for new models of care and partnerships
Explore opportunities for leveraging resources and workforce optimization
Additionally, the system wide costs were difficult to measure given the disparate data systems, multiple organizations, vast array of providers and funding streams (e.g. health, justice, education, social services, housing)

Project Approach
- Multi-provider (30 CYMH agencies) + 2100 front line staff + 9 Children Aid Societies, + 7 inpatient psychiatric hospitals/units + 5 emergency departments
- Technology enabled collaboration (Think Tank) used to collect front line staff challenges, family experiences and prioritization of challenges
- Scenario planning explored and implemented to drive mind-set shifts to explore resetting their model of care
- Used SG to test new approaches and improvements

Client Benefits
- Increased awareness for the need to rethink partnerships, services and delivery mechanisms
- Five agencies amalgamated to deliver centralized services leveraging resources, funding and workforce
- System-wide standardized approach to assessments across government agencies (e.g. health, social services, education and justice)
- Increased use of tele-health for access to psychiatric assessments and evaluations
### Intake Process Timings

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Timing (mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
<td>7</td>
</tr>
<tr>
<td>Case Creation</td>
<td>3.5</td>
</tr>
<tr>
<td>BCFPI</td>
<td>40</td>
</tr>
<tr>
<td>Case Assignment</td>
<td>7.5</td>
</tr>
<tr>
<td>Appropriateness of Fit</td>
<td>15</td>
</tr>
<tr>
<td>Red Flags</td>
<td>10</td>
</tr>
<tr>
<td>CFT Case Assigned</td>
<td>12.5</td>
</tr>
<tr>
<td>F2F Appointment Coordination</td>
<td>7.5</td>
</tr>
<tr>
<td>Case Close out</td>
<td>5</td>
</tr>
</tbody>
</table>

### Initial Assessment Process Timings

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Timing (mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial F2F Meeting at Agency</td>
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</tr>
<tr>
<td>Assessment Meetings</td>
<td>67.5</td>
</tr>
<tr>
<td>Red Flag Follow Up</td>
<td>30</td>
</tr>
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### Pre-Admission Process Timings

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Timing (mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Admission Case Conference</td>
<td>90</td>
</tr>
<tr>
<td>Admin Support</td>
<td>30</td>
</tr>
<tr>
<td>Clinical Formulation Report and Update</td>
<td>60</td>
</tr>
<tr>
<td>MDT Meeting</td>
<td>90</td>
</tr>
<tr>
<td>Other Clinical Services or Consultations</td>
<td>67.5</td>
</tr>
<tr>
<td>Documentation</td>
<td>20</td>
</tr>
<tr>
<td>Admission Meeting</td>
<td>60</td>
</tr>
<tr>
<td>Placement Discussion</td>
<td>20</td>
</tr>
<tr>
<td>Parental Decision</td>
<td>0</td>
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<tr>
<td>Family Accepted</td>
<td>6</td>
</tr>
<tr>
<td>Orientation Meeting</td>
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</table>

### Admission Process Timings

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Timing (mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of Admission Package</td>
<td>90</td>
</tr>
<tr>
<td>Child in Room</td>
<td>37.5</td>
</tr>
<tr>
<td>Admin Documentation</td>
<td>165</td>
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</table>

### Treatment Delivery Process Timings

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Timing (mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>12.5</td>
</tr>
<tr>
<td>Document Mgmt</td>
<td>90</td>
</tr>
<tr>
<td>Med Admin</td>
<td>15</td>
</tr>
<tr>
<td>Child Daily Routine</td>
<td>10</td>
</tr>
<tr>
<td>Facility Mgmt</td>
<td>90</td>
</tr>
<tr>
<td>Medical Appts</td>
<td>60</td>
</tr>
<tr>
<td>Case Reviews</td>
<td>18</td>
</tr>
<tr>
<td>Case Mgmt</td>
<td>25</td>
</tr>
<tr>
<td>Other Referrals</td>
<td>10</td>
</tr>
</tbody>
</table>

### Discharge, Transition, Follow-up Process Timings

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Timing (mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Planning</td>
<td>120</td>
</tr>
<tr>
<td>Discharge Case Conference</td>
<td>75</td>
</tr>
<tr>
<td>Discharge Documentation</td>
<td>37.5</td>
</tr>
<tr>
<td>Day of Discharge</td>
<td>30</td>
</tr>
<tr>
<td>Follow Up</td>
<td>30</td>
</tr>
</tbody>
</table>
# Potential Opportunities for System Reinvestment

<table>
<thead>
<tr>
<th>Process</th>
<th>Evidence</th>
<th>Possible Solutions</th>
<th>Potential Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referral</td>
<td>Multiple Eligibility Criteria</td>
<td>Shared Records</td>
<td>Integrated Service Processes</td>
</tr>
<tr>
<td></td>
<td>Distinct Records</td>
<td>Agreed Standards</td>
<td>Reduced Waiting Times</td>
</tr>
<tr>
<td></td>
<td>Data Disparity</td>
<td>Common Data Set</td>
<td>Optimized Resources</td>
</tr>
<tr>
<td></td>
<td>Service Fragmentation</td>
<td>Collaborative Practices</td>
<td>Shared Resources</td>
</tr>
<tr>
<td></td>
<td>Service Duplication</td>
<td>Standardized Decision</td>
<td>Alignment of Capacity and Demand</td>
</tr>
<tr>
<td></td>
<td>Multiple hand-offs</td>
<td>Making</td>
<td>Appropriate Referrals</td>
</tr>
<tr>
<td></td>
<td>Significant bottlenecks/delays</td>
<td>Standardized Care</td>
<td>$500K</td>
</tr>
<tr>
<td></td>
<td>Multiple Access Points</td>
<td>Pathways</td>
<td></td>
</tr>
<tr>
<td>Entry Points average 22</td>
<td><strong>20-30% non-value activities</strong></td>
<td><strong>Agreement to vision for client pathways</strong></td>
<td><strong>Cost-Avoidance of approximately 8%</strong></td>
</tr>
<tr>
<td>1300 Children Placed in</td>
<td><strong>Variation in Screening Tools</strong></td>
<td><strong>Standardized eligibility and prioritization criteria</strong></td>
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<tr>
<td>Residential Services</td>
<td></td>
<td><strong>Common metrics</strong></td>
<td></td>
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<tr>
<td>Est. 53K days of service</td>
<td></td>
<td><strong>Standardized approach to waiting times and reporting</strong></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Increased accountability and transparency</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Responsiveness to families, children and youth</strong></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Cross-sector approach to appropriate use of resources</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Reduced wait times</strong></td>
<td></td>
</tr>
<tr>
<td>Intake</td>
<td>Variation between services (e.g. community versus residential placements)</td>
<td>Agreement to vision for client pathways</td>
<td><strong>Potential savings – 28% intake activity steps considered non-value</strong></td>
</tr>
<tr>
<td>Average wait time 2-4 wks</td>
<td>Data collection of MCYS screening and assessment tools not standardized</td>
<td>Standardized eligibility and prioritization criteria</td>
<td></td>
</tr>
<tr>
<td>Skill Variation Exists</td>
<td>Resource duplication across the continuum</td>
<td>Common metrics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silos Professions and practices</td>
<td>Standardized approach to waiting times and reporting</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Single Point Access – 2-4 hours per Agency reviewing planned cases add 4-6 weeks to service user waiting time</strong></td>
<td><strong>Increased accountability and transparency</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>40% of resource time attributed to non-direct activities/documentation</strong></td>
<td><strong>Responsiveness to families, children and youth</strong></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Cross-sector approach to appropriate use of resources</strong></td>
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Learning from the collaboration