KeRNEL

Kent Research Network for Education and Learning

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Kent University
MNWK
East Kent Hospitals NHSFT
OPSR Matrix

**Operational:**
Diagnostics efficiency

**Planning:**
GP referral patterns

**Strategic:**
UTC impact

**Research:**
Maternity

• Hypothesis: from which GPs can we observe unnecessary ED attendances and what interventions can we design to reduce this?

• Hypothesis: that some women, following birth, do not return to their normal weight quickly because of embarrassment about incontinence and general malaise about increased weight.

• What will the effect of the new UTC’s be on patient flow within the acute hospital sites?

• What is the impact of the diagnostic element of the ED pathway?

• Can improvements in the prioritisation of blood tests help deliver better performance against the 4 hour target?
### Background to KeRNEL

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<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>Over the last 7 years Kent has developed a leading reputation for the creation of linked data for the purposes of planning and research. This is known as the Kent Integrated Dataset (KID).</td>
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<td>2</td>
<td>The KID has been used extensively for local and national research. For example NHSE have used it to calibrate their national funding model, meaning that £28 billion of spend has been calculated using the direct input of the KID. The KID was central to the submission of the Long Term Plan (LTP) response for Kent &amp; Medway.</td>
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<td>Significant progress has been made working with Optum to develop further the capability around the use of linked data.</td>
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<td>The plan now, using the data feeds which informed the KID as one of its foundations, is to create the KeRNEL and expand its breadth and depth in the use of more clinical datasets and across more NHS and partner organisations.</td>
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Background to KeRNEL

Drivers
- PHM Wave 3 from NHSE
- ICS/ICP/PCN development
- Move towards local control and flexibility around requirements

Resources
- Analytics strategy for Kent and Medway
- Shared Health and Care Analytics Board and Joint Data Control
- Academic and industry relationships in Kent and Medway

Opportunity
- Lead the way on PHM; adverse childhood events, intimate partner violence
- Data feeds from KMCR
- Leverage local expertise and national connections
## Infrastructure: breadth & depth

### Acute

**For example:**
- Primary Care
- Community
- Ambulance
- Mental Health
- Social Care
- Public Health
- Fire & Rescue
- Police

### Depth

- PAS
- Theatre
- Pathology
- Radiology
- VitalPAC
- Maternity
- EPR

### Breadth

- KMCR
- PMI
- Staffing and Personal data (e.g. wearables)

Supplemented and/or informed by:
## KeRNEl Applications

<table>
<thead>
<tr>
<th>Analysis vs team</th>
<th>KMAP</th>
<th>Public Health</th>
<th>Providers</th>
<th>CSU</th>
<th>Universities</th>
<th>Independent Sector</th>
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</thead>
<tbody>
<tr>
<td>Operational</td>
<td>PCN profiles</td>
<td>ED dashboards</td>
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<td>Mortality monitoring</td>
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<tr>
<td>Planning</td>
<td>MSK pathway demand and capacity modelling</td>
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<td>Segmentation Outcomes analysis</td>
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<td>Strategic</td>
<td>JSNA</td>
<td>UTC development</td>
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<td>System dynamic modelling</td>
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<tr>
<td>Research</td>
<td>Health coaching evaluation</td>
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<td>AI dev.</td>
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- **Operational**
  - KMAP: PCN profiles, ED dashboards
  - Independent Sector: Mortality monitoring

- **Planning**
  - MSK pathway demand and capacity modelling
  - Independent Sector: Segmentation Outcomes analysis

- **Strategic**
  - JSNA, UTC development
  - Independent Sector: System dynamic modelling

- **Research**
  - Health coaching evaluation
  - Independent Sector: AI dev.
# KERNEL Project Plan

<table>
<thead>
<tr>
<th>Workstream</th>
<th>Action</th>
<th>Indicative timescale</th>
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<tbody>
<tr>
<td><strong>Governance</strong></td>
<td>Get K&amp;M organisations signed-up to Joint Data Control</td>
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<td></td>
<td>Complete KERNEL DPIA</td>
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<td>Register KERNEL with CAG</td>
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<td></td>
<td>Establish KERNEL operating model and allocate roles</td>
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<td><strong>Funding</strong></td>
<td>Secure STP/Central allocated funding</td>
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<td>Secure funding contributions from SHCAB member organisations</td>
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<td>Secure research funding/grants</td>
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<td></td>
<td>Transition to become self-funding (within 3 years)</td>
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<td><strong>KERNEL development - phase 1</strong></td>
<td>Implement de-id/re-id/pseudonymisation tool</td>
<td>Q1 2020 (January – March 2020)</td>
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<td>Load PMI from NHSE (NHSAIS)</td>
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<td>Implement/import geo-demographic segmentation tools</td>
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<td>Loading historic provider data (timeframe: 10 years or as historic as possible) – the same dataflows which were used to inform the KID</td>
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<td></td>
<td>Acute provider data: EKHUFT, MTW, MFT, DGT</td>
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<td>Community provider data: KCHFT</td>
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<td>Mental health provider data: KMPT</td>
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<td>Ambulance provider data: SECAmb</td>
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<td>Non-health provider data: Kent Police, Education</td>
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<tr>
<td><strong>KERNEL development - phase 2</strong></td>
<td>Load in primary care data (via KMCR)</td>
<td>Q2 2020 (April – June 2020)</td>
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<td>Loading Infoflex (cancer) data from all Acute provider Trusts</td>
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<td><strong>KERNEL development - phase 3</strong></td>
<td>Loading additional provider data (‘breadth and depth’) – could occur during Phase 2 depending on how quickly provider organisations can make this data available and how the data can be ETL’d for KERNEL:</td>
<td>Q2/Q3 2020 (April – June / July – September 2020)</td>
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<td>Acute provider data: Theatres, Radiology, Pathology, Vital Signs, Maternity</td>
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<tr>
<td><strong>KERNEL development - phase 4</strong></td>
<td>Loading additional datasets from other organisations</td>
<td>Q3/Q4 2020 (July – September / October – December 2020)</td>
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What KeRNEL Enables:
KeRNEL

Kent Research Network for Education and Learning
Additional material
Creating a Strong Data Culture to Drive Success

Key Building Blocks

- Clear Governance & Leadership
- Robust Data Governance
- Strong Data Management (collecting, storing and providing access)
- Skilled Analytical Workforce
- Supportive Clinical Engagement
- Population Health Management
- Integrated Care Management

KERNEL

Creates

- Single source integrated data across health, social care and non health services (supporting open & collaborative working)
- Data access and transparency through various tools
- Data mindset & skills across workforce (confidence finding & analysing data before presenting findings)
- Data community to continually evolve data asset & innovate

Facilitates

Population Perspective:
- Holistic and more effective approach to citizens current & future health needs (incl. wider determinants of health)
- Segmentation and outcomes focus

Strong Business Intelligence:
- System view patient flow
- Modelling to support planning
- Real time performance management and forecasting
- Better diagnose issues, respond faster and evaluate sooner

Decision support for staff:
- Risk stratification & targeted prevention
- AI and machine learning
- Pathway adherence and reduced variation
- Increasingly personalised and integrated care planning for patients

Research & Industry P/ships
- Data Research laboratory
- Place based, real world research service
- Supportive of operational and improvement work so actionable