Health Services

A new processor for
patient- and work-flows

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# SUMMARY

- **Costs and cost growth is unsustainable while more services are wanted.**

- **Mortality rates from avoidable medical errors are unacceptable.**

- **Clinicians are increasingly frustrated due to excess bureaucracy.**

- The main culprits are:

  - Clinicians are wasting time on non-clinical admin and duplicate work.

  - Broken patient-, information-, responsibility-, and work-flows.

- A national/regional patient-, information-, and work-flow system can offer:

  - Up to a tripling of the core clinical capacity.

  - Dramatic reduction in mortality rates due to avoidable medical errors.

  - Dramatic reduction of frustration among clinicians and patients.

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# CURRENT SOLUTIONS

Currently the principal "solutions" are:

1. Increase staffing levels.

2. Increase implementation of electronic medical records (EMR/EHR).

3. Trying to solve communication using "links", "SOA" or "bridges".

4. Adding more ICT pieces to the jumble.

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# SYMPTOMS ARE VISIBLE

**The root cause is seldom visible…**

- Visible problems are almost always symptoms.

- Even unsustainable costs, unacceptable quality and frustration are symptoms.

- Fixing symptoms equals temporary relief.

- The only way forward is to identify the root cause.

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# HEALTH IT

Current Healthcare IT:

- Sells to healthcare providers, one at a time.

- Is thus provider centric by design.

Patients:

- Are provider agnostic, moving from provider to provider.

- Need a patient centric solution - a nation- or area wide support system.

Hence the need for a shift towards a nation- or area wide patient centric solution.

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# THE EMR FALLACY

Electronic records do not deliver as expected:

1. 50 - 80% of implementations are deemed to be a failure.

2. In addition implementation always leads to an increase in overall costs with only a slight decline for some hospitals after three years.

3. Costs are exorbitant at up to £ 40,000 per physician and year.

4. Systems are provider focused rather than patient centric.

5. It does not address the major costs and quality issues rooted in work and patient flow problems.

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# THE LINKING FALLACY

Linking disparate systems is like Band-Aiding a broken leg:

1. Different systems will always have different data models, dramatically reducing information-value for each transfer while introducing errors.

2. Signals from system to system is bucket passing, views or activities will never be real time. A flow requires a single structure - like a riverbed.

3. Transfer of patient-case ownership is easily broken, the completeness of the information is not assured. 51% of US clinicians do not trust handovers, possibly the biggest contributor to avoidable medical errors. A study points to 80% of serious Preventable Medical Errors having its root cause in imperfect communication during handovers.

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# DIGITALISATION MYTH

Digitalisation of information solves nothing by itself.

The only effect is faster movement of data. This creates new problems:

1. Faster scattering of data to different locations; server, email clients, document handling systems and a multitude of application files.

2. The result being distribution of different versions of the same data and hence a dramatic increase in complexity.

3. This leads to reconciliation needs, errors and above all, diminishing data quality.

4. Finding the right information becomes harder and harder over time.

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# DOCUMENT HABIT

A document based data model is a disaster:

1. A document tries to "represent" a real world object at the same time trying to "present" the same. This made sense in the days of quills and scrolls, but not when we have ICT that can produce presentations (reports) on the fly from singular representations in any way you want.

2. A document usually holds representation of many different real world objects which increases complexity tremendously while making access to the full and true information extremely hard, sometimes impossible.

3. Context and knowledge, how objects relates to other objects, is semantically represented in text format which is not very useful for ICT systems. Knowledge and context is therefore lost.

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# THE ARCHITECTURE FALLACY

The architecture is out-of-date:

1. It assumes that the current organisational and manual methods is the only way to move the patient- and work-flow forward. Wrong: A new approach where the process is the core will be able to handle that.

2. It assumes that organising results can produce better results. Wrong: Only organising activities can produce better results. And with organised activities the results and their context would be captured automatically.

3. Real context as in who, what, when, why, related to who and what - is almost always lost thus dramatically reducing information value.

4. It assumes that any unpredictable "process" cannot be modelled and hence not run nor controlled. Wrong: This is now possible and it is crucial for the unpredictable nature of healthcare.

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# THE ALTERNATIVE

- Riverhealth is the first patient-, information-, and work-flow system that puts patient and care activities first. It automates administration, removes duplicate work while leaving the care worker to focus on the patient.

- Patient handovers are ironclad and accountability is total, ensuring unbreakable patient-, information-, and work-flows nationwide.

- Real time reports, including medical records and research interfaces, are automatically created.

- Clinical pathways, libraries and other support tools.

- Interfaces for patients and next of kin include patient-controlled third party access to personal records and communication tools.

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# THE NEW WORKPLACE

- A place without administration nor duplicate work, only focus on bettering outcomes.

- A place where all tasks, information, and required tools appear at the right time.

- A place that creates all reports automatically.

- A place where handovers and responsibilities are indisputable and transparent.

- A place that you can bring with you.

- A place where you will not be disturbed.

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# SOME BENEFITS

- Dramatic reduction of non-clinical work originating from communication, disrupted flows and reporting which can be converted to more patients seen, more time for patients, and arresting growth in staff costs.

- Significantly reduced risk of errors thanks to total accountability, ironclad handovers and unbreakable flows.

- Focus on autonomy, purpose and mastery for highly motivated care workers.

- Any level of transparency for patient satisfaction and all-important peer- recognition and pressure.

- Patient centric - empowering and adding real world practical functionality.

- All the associated benefits of a single nationwide medical record system.

- Transfer of knowhow and practical control of system to avoid vendor lock in.

- Unprecedented data security and privacy by dynamically relating data objects with any user allowing access to data to be governed by simple semantic rules.

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# NATIONWIDE

- A patient will always see many different healthcare providers.

- All that happens to him must be recorded in the same place so it's available to the next healthcare worker without disruption, in real time and without any effort.

- To reduce risk for errors, handovers must be ironclad without a glitch:

  1. Responsibility must be singular, accountability total.

  2. Information transfer must be complete and automatic.

  3. Everything must be captured automatically.

- Central government, researchers and funders must have real time and full overview to measure results and to be able to address issues when and where.

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# TIME IS OF ESSENCE

- The majority of clinicians claim that they "spend at least half their time on administration and duplicate work". This indicates a potential doubling of available resources if they were relieved of this work.

- Indeed, research indicates that knowledge workers (clinicians are a typical example) spend between 55% and 75% of their time on activities that do not 'add value' for their clients or patients.

- McKinsey found that an 'interaction worker' now spends 28% of her/his time on email and 19% on searching and gathering of information. If this alone could be rectified one would increase available resources by 89%.

- In fact many meetings, the majority of ad-hoc communications, all report writing, all waiting or time spent looking for stuff are wasted activities from a value-creation perspective.

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# RECOVER THE TIME

- A patient-, information- and workflow system automates the effort required to move the flows forward freeing clinicians from the non value-add work mentioned above.

- The time released has the same effect as increased staff levels and can be used for one, or any combination of:

  1. More clinician time for patients.

  2. Increase number of patients seen, i.e. increase in overall capacity.

  3. Lower staff levels or same staff levels for far higher capacity and quality delivered.

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# REAL OWNERSHIP

Split ownership is equal to no ownership and wreaks havoc:

1. Riverhealth assures singular and real time ownership to any situation or patient to assure focus on the right activity, minimising confusion, errors and time-waste. No staff increase alone can deliver this.

2. Singular ownership equals responsibility, accountability, and peer recognition - crucial elements for a smooth patient- and work-flow.

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# NO INFRASTRUCTURE

- One system delivering via http for browser-only clients.

- Wifi and mobile data networks are ubiquitous and cost-effective.

- Simple tablets with sim card and mobile data subscriptions for zero support, maximum sturdiness and total mobility.

- Low bandwidth optimised data transfer to work even with GPRS/EDGE.

- Browser based for no installation or maintenance issues.

- No other infrastructure needed. (Local wifi networks can distribute if available.)

- Step by step and logical activity sequences with simple-as-possible interfaces minimises any need for training.

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18

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# Thank you for taking the time!

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