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Model to reduce waste in healthcare and add value

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INTRODUCTION

The startling revelation that one fifth of health expenditure makes little contribution to good health outcomes[1] is surely a call to action to tackle waste in the delivery of care. Across member countries of Organisation for Economic Co-operation and Development (OECD) a significant share of healthcare system spending and activities are wasteful at best, and harmful to our health at worst.[1] By way of example OECD cites, 11.7% of visits to emergency departments (EDs) in England and 31.3% in Portugal are identified as 'inappropriate'—resulting in the misappropriation of scarce healthcare resources and the inappropriate use of patient time (many of whom could have been more appropriately treated in primary care, without the need for a visit to an ED). Secondly, the continuation of provision of some imaging, therapeutic and surgical procedures on an inpatient as opposed to outpatient basis further contributes to the 'wasteful' utilisation of expensive resources and inappropriate patient admissions, when such interventions could be carried out in other settings. Combine this powerful data with the global challenge of healthcare financial constraints, ageing populations and the increasing burden of chronic disease and 'more and faster' is not the answer—a new approach is needed. In order to optimise health system performance, the Institute for Healthcare Improvement (IHI) offers the triple aim[2]—improving the experience of care and the health of our populations, at the same time as lowering per capita costs.

The term 'waste' is often uncomfortable to those of us in healthcare, as somehow it seems to undermine the 'purity of purpose'—making services safer and better for patients. However, when the term is framed into meaningful components to care givers it becomes something identifiable. Work facilitated by IHI American and European Healthcare Alliances demonstrates that when the evidence of wasteful impact is well presented, it is strong motivator for change. This paper charts the journey and learning associated with the exploration of 'adding value, reducing waste' in healthcare as originated by the IHI US-based Leadership Alliance and more recently by the Health Improvement Alliance Europe (HIAE). At the time of commencing this work the HIAE was constituted from 10 member countries and 40 member organisations—all of whom are committed to the common aim of improving health and healthcare worldwide.

THE METHOD APPLIED

Step 1: defining waste

The IHI Leadership Alliance[3] define waste as '*resources expended in money, time and/or personnel, that do not add value for the patient, family or community*'. A definition adopted by the HIAE in its journey.

Step 2: articulating the scale of the problem and rationale

The Trillion Dollar Checkbook[3] developed by the Leadership Alliance offers examples of opportunities to reduce waste and cost in the US healthcare system. The Leadership Alliance estimate that US$6.2b alone could be 'paid back' associated with preventable hospital-acquired infections.[3 4]

Step 3: creating a strategic framework for removing non-value-added waste

The Leadership Alliance frame their aim of '*Systematically and proactively identifying and eliminating 50% of non-value added waste in the US health care system by 2025*'. A theory for change is presented in the form of a driver diagram (see figure 1). The driver diagram and Checkbook create the strategic framework for removing non-value-added waste.

Step 4: taking up the challenge with European partners

The HIAE applied the Leadership Alliance framework on the understanding that the 'waste reduction' approach is fundamentally different to arbitrary cost cutting. Uniting people by making clear the negative impact of waste on staff, patients and families and

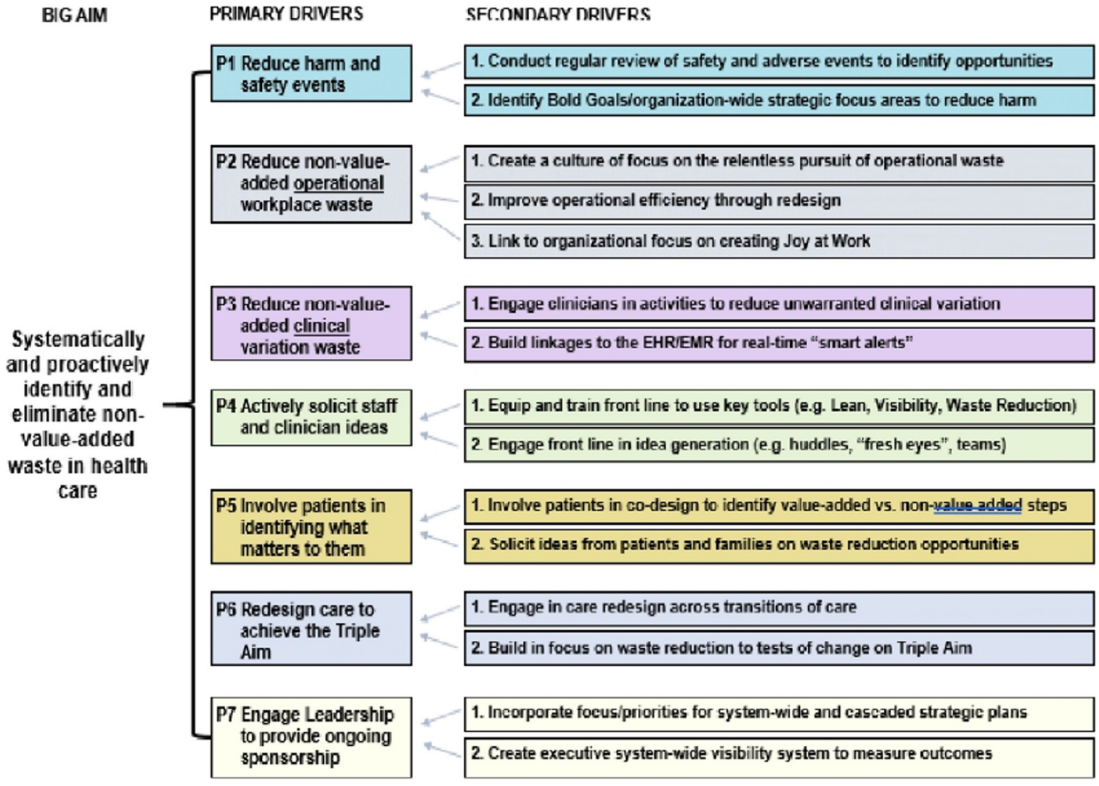

Figure 1 Leadership Alliance Driver diagram. EHR, electronic health record; EMR, electronic medical record.

demonstrating the powerful impact of reinvesting the savings to the design and spread of innovative models for better health and care. Quarterly in-person HIAE meetings, and monthly member webinars provided the opportunity for members to surface ways in which waste in healthcare presents itself in their country/organisation—and illustrated many common causes of waste across healthcare in Europe. Collectively members agreed to quantify the impact of some of these forms of waste identified through the eyes of the organisation, the staff and patients. HIAE members shared back the learning from the Alliance meetings to their individual organisations and utilised existing quality improvement fora to disseminate the 'adding value reducing waste approach'; simultaneously working across their organisations to generate practical examples of waste reduction.

Framing 'waste' in a way which is relatable to health and care staff, uniting care givers in the cause was key. The issue of 'time' as an important currency emerged as a strong theme. The importance of not wasting patient time (waiting for results, unnecessary interventions, etc), in addition to maximising the use of staff time, by deploying valuable staff skills and resources to appropriate and effective interventions. These concepts are well articulated by the OECD.[1] The concept of Muda[5] also encouraged thinking beyond Euros and Pounds.

Recognising the power of image over words to communicate important messages, the HIAE commissioned an illustrator to develop a visual representation (sketch note) entitled '*Don't waste what can't be replaced*'. This sketch note illustrated some of the expected benefits associated with reducing waste, and on testing its use with healthcare teams, the results showed that front-line staff did connect with the term waste.

One member organisation, the Northern Health and Social Care Trust (NHSCT), Northern Ireland, demonstrated examples of successful implementation of waste reduction through the application of the US Alliance developed (and HIAE adopted) framework for waste reduction, and through application of the Model for Improvement. Following successful interventions the results generated by the NHSCT were disseminated via engaging infographics. The infographics aimed to communicate key messages of waste through the eyes of the system, services and patients. The results demonstrated evidence of the suboptimal use of medicines as a contributory factor to avoidable hospital admissions—with pharmacy team input reducing patient length of stay by 2 days and readmission within 30 days by 10%; avoiding a £825 cost per patient.[6]

A second example was illustrated by the scaling up evidence-based practice with regard to an end of life (EoL) care model, which showed that patients who experienced the model had 50% fewer inpatient admissions, a 2.2-day reduced length of stay, a 20% lower presentation rate at the ED. The cost of their care was 50% less than those patients without access to the EoL care model.[7]

A further example is illustrated through the application of the *REaCH* (*R*esponsive, *E*ducation *a*nd *C*ollaborative *H*ealth Programme) for nursing home registrants. The aim

of this programme is to strengthen the skill set of nursing home registrants in 58 nursing homes, supporting the adoption of a more anticipatory model of care. In the first year of operation there was a 24% reduction in ED admissions from nursing home residents, district nursing and hospital diversion contacts were reduced by one-third and the cost avoidance associated with the interventions was £1 m. Waste was avoided through the right care, in the right place at the right time.

Step 5: the relevance of waste in the COVID-19 era

The 'waste journey' has matured, language has become less alien and the concept of waste in healthcare better understood—bringing the concept to life.

The pandemic has more recently presented us with the opportunity to build on this approach. In response to COVID-19, we have seen rapid cycles of change to adapt to new challenges and provide the appropriate response to changing circumstances.

In examining the learning from COVID-19 in the NHSCT in Northern Ireland, we explored the question '*did we remove waste in providing healthcare differently in our pandemic response and in doing so, did we create more opportunities for innovation?*' Did we 'exnovate to innovate?' The output of our lessons learnt generated from experience of wave 1 of COVID-19 (mid- 2020) in NHSCT, provided a positive response to that question, and demonstrated four main categories of changes and their associated impact of 'exnovate to innovate'—illustrated by figure 2.

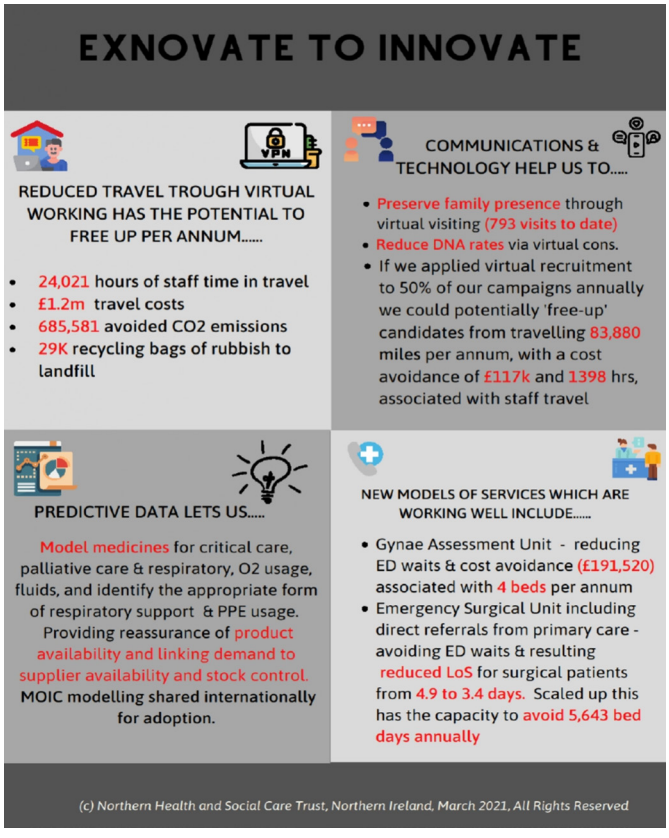

Figure 2 Main categories of learning from COVID-19. ED, emergency department; LoS, Length of Stay; PPE, personal protective equipment.

CONCLUSIONS AND LESSONS LEARNED ON THE JOURNEY

- It is possible to apply a new framework for waste reduction in healthcare that surfaces areas of opportunity to add value—the broad concept being 'Will, Ideas and Execution'.
- The term 'waste' is meaningful to healthcare staff when articulated in a manner which brings reality to the concept.
- Opportunities exist to unite in the cause of 'adding value and reducing waste', and encourage participation at all levels to remove waste to the benefit of the system, staff and patients.

The challenges presented in response to the pandemic have increased opportunities to exnovate and innovate, and previous modest investments in digital care and transformation are now paying off. The best of the innovations that have surfaced during the pandemic response need to be hardwired for the future. By continuing the journey of 'exnovate to innovate', articulating the impact of changes through data and practical examples, we might just take the next steps of 'paying back' those 'green dollars'!

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