



**Government
Economic
Service**

PUBLIC SECTOR EFFICIENCY

**Presentation for the What Works Centres summit
10th June 2019
Cardiff**

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The purpose of this presentation is...

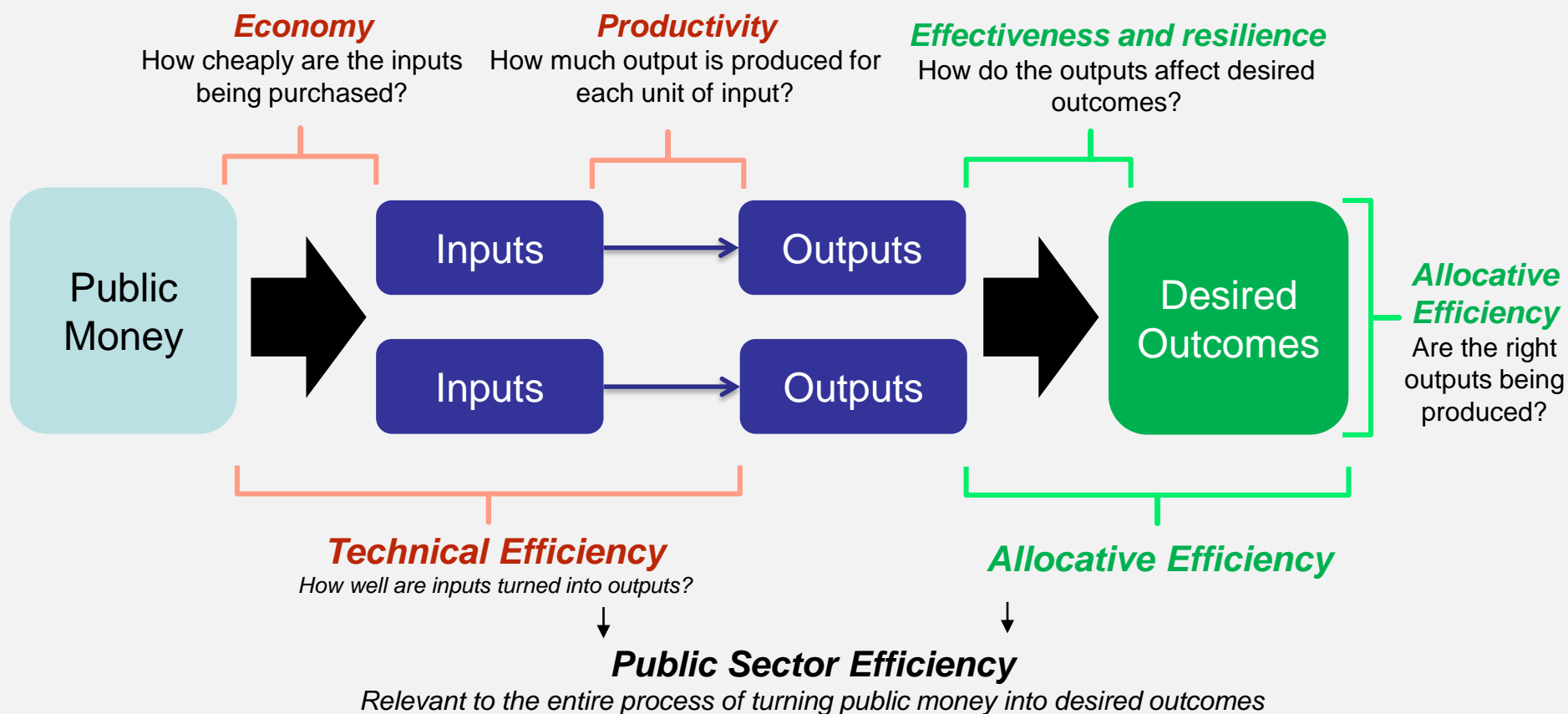
- to offer a definition of public sector efficiency
- to set out why public sector efficiency is important
- to spell out the challenges to measuring public sector efficiency
- to set out what the data show in broad terms
- to summarise the key drivers of public sector efficiency and some case studies of what can be done, and
- to offer some brief thoughts on future work

What do we mean by public sector efficiency?

Public sector efficiency refers to the process of turning public money into desired outcomes

The Public Sector/Service Production Process

A simplified model of how public money is turned into inputs, outputs and outcomes



What do we mean by public sector efficiency?

Public sector efficiency can be defined in two distinct ways: technical and allocative

Technical efficiency

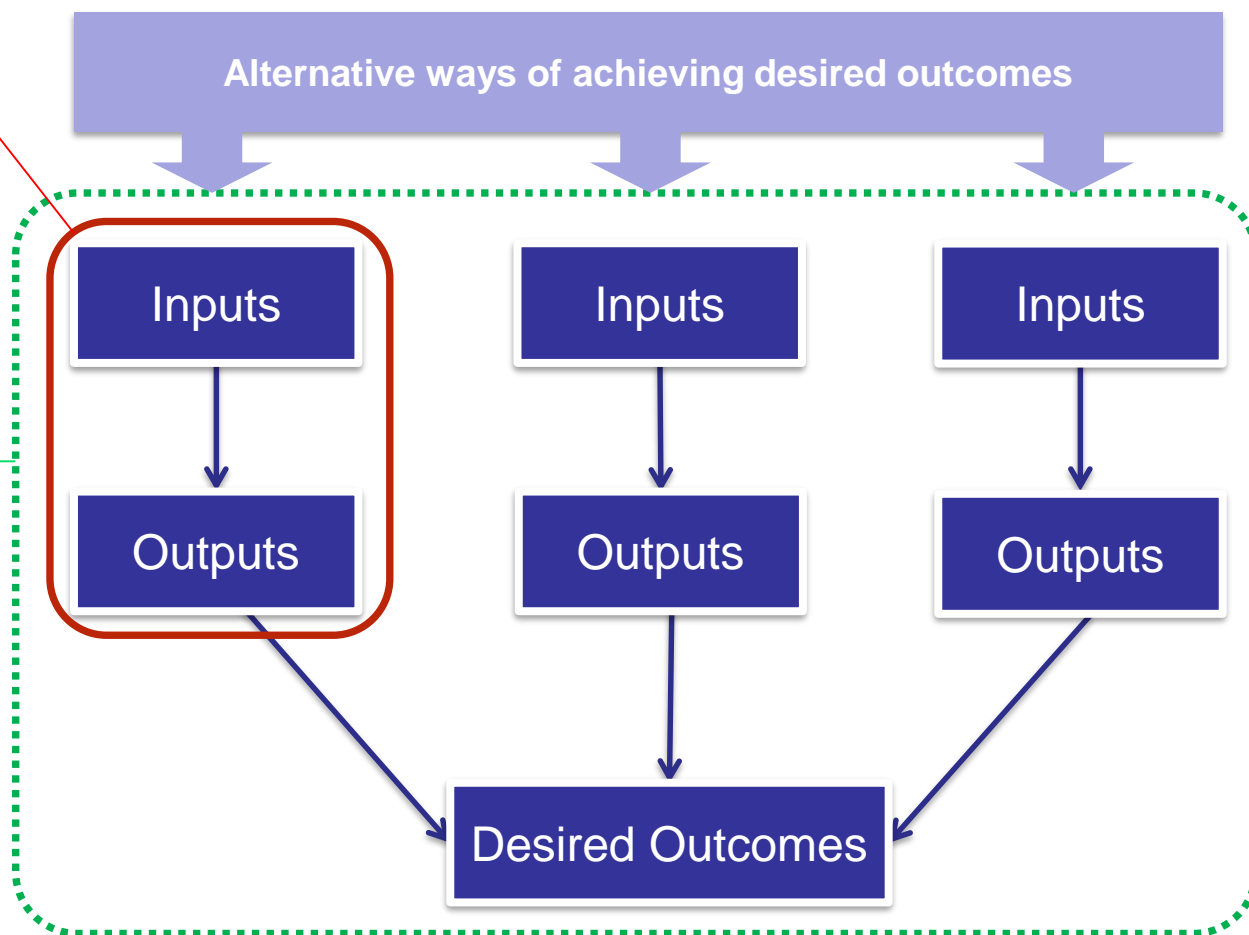
'Doing things right'

Doing the things we currently do either at less cost, **or** getting more outputs from what we currently do at the same cost, **or** some combination of the two.

Allocative efficiency

'Doing the right things'

Finding wholly different ways of achieving desired outcomes – at less or substantially less cost. Service transformation is crucial to allocative efficiency and unlocking transformational improvements in efficiency.



Why is public sector efficiency important?

It matters to the difference the public sector and public services make to outcomes the public and policy makers are concerned about:

- Health
- Educational attainment
- Public safety
- Etc.

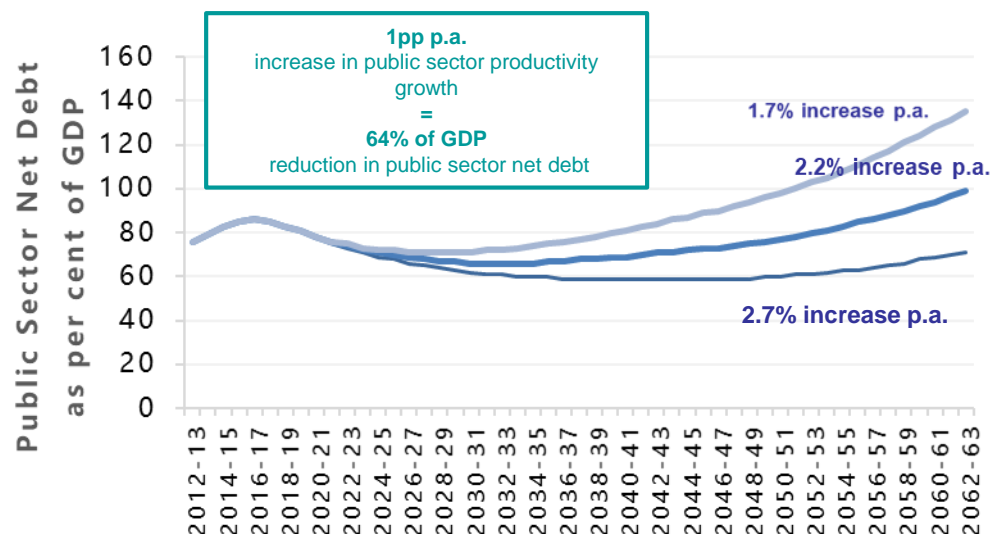
It matters to productivity in the wider economy

Giordano et al's IMF working paper suggests firms in an Italian province with above median public sector efficiency achieve higher levels of output per Euro spent on salaries (+11%)

Source: Does Public Sector Inefficiency Constrain Firm Productivity: Evidence from Italian Provinces by R Giordano, S Lanau, P Tommasino, and P Topalova, IMF Working Paper, WP/15/168, July 2015

It matters to the burden of taxation and fiscal sustainability

The more efficiently services are provided, all other things being equal, the greater the fiscal sustainability



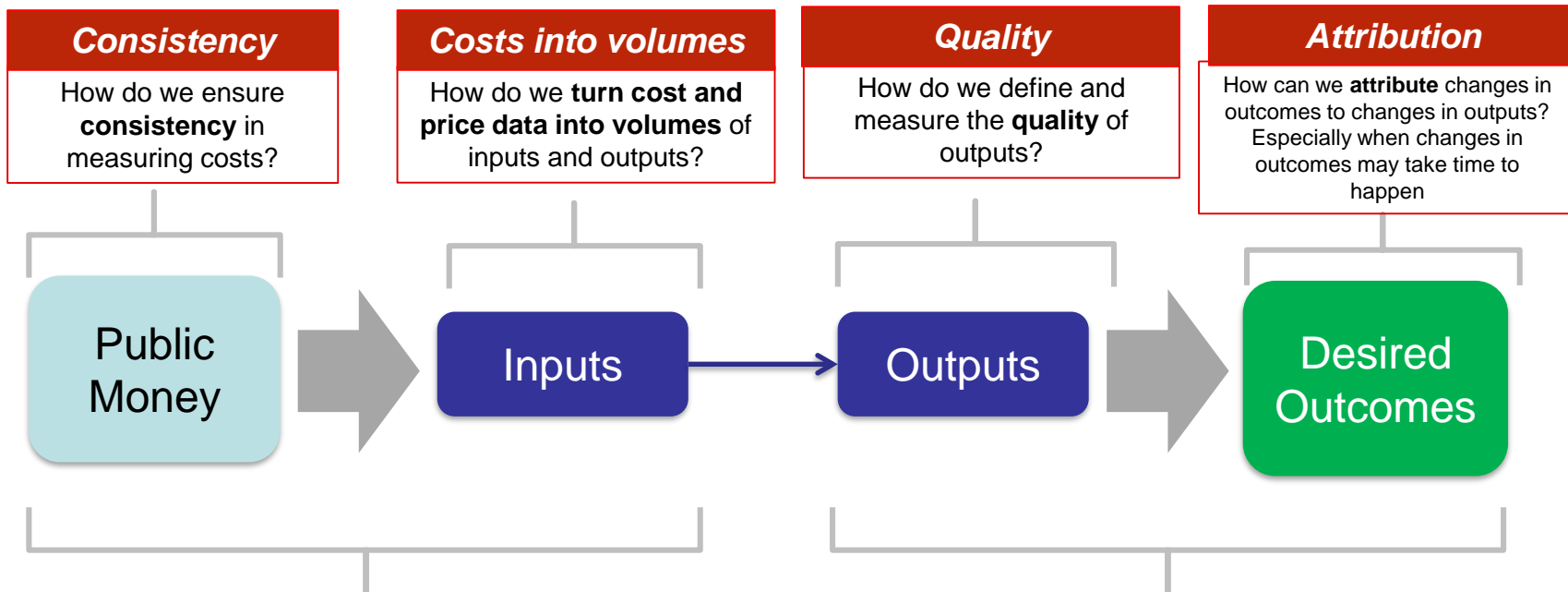
Public Sector Net Debt as a % of GDP in the UK under different rates of public sector productivity growth

Source: Office for Budget Responsibility, 2013

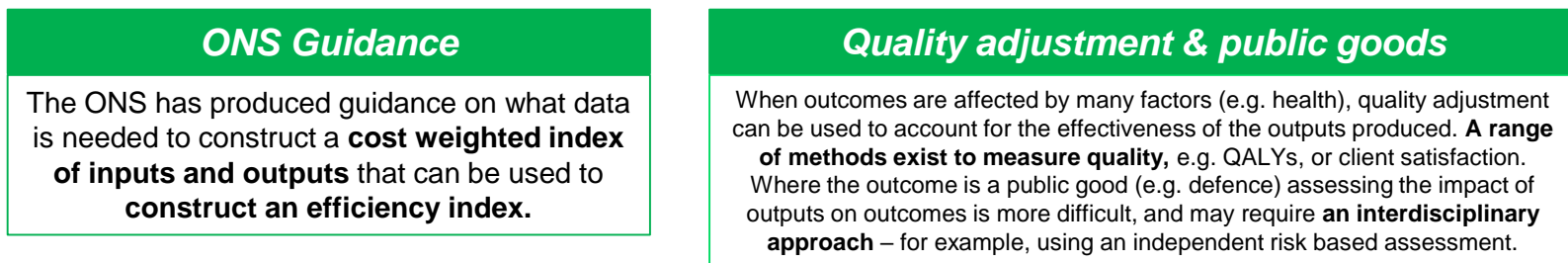
What are the challenges in measuring public sector efficiency?

Analysing public sector efficiency poses a number of measurement challenges

Problems



Potential Solutions



While all efficiency data available are imperfect and subject to caveats, none of the problems around defining and measuring efficiency are insurmountable.

What public sector activities are we interested in?

Public sector activities can be broken down into three broad categories: back office, transactional and front line

- **Back office** services including Human Resources and Finance.
- **Transactional** services including benefit administration and tax collection.
- **Front line** public services including schools, policing, health, social care, etc.

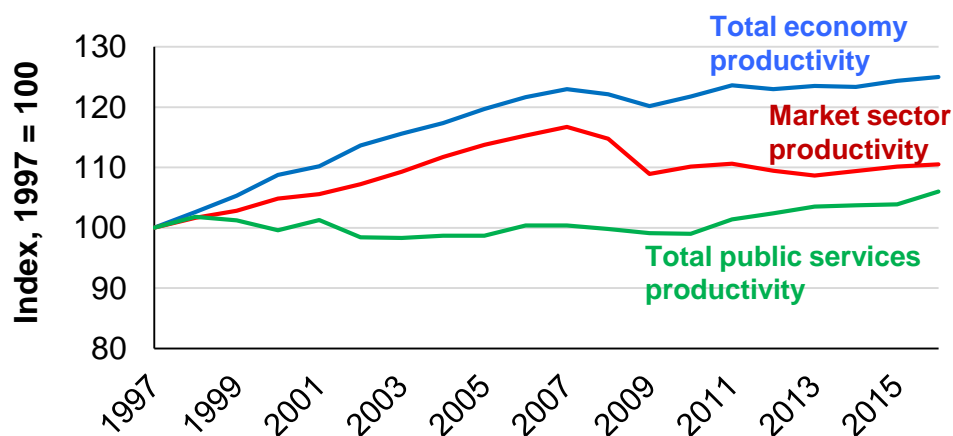
*The efficiency of back office and transactional services is more readily measurable (if not without challenges) **but by far the greatest public sector spend is on frontline services.***

What do the data show?

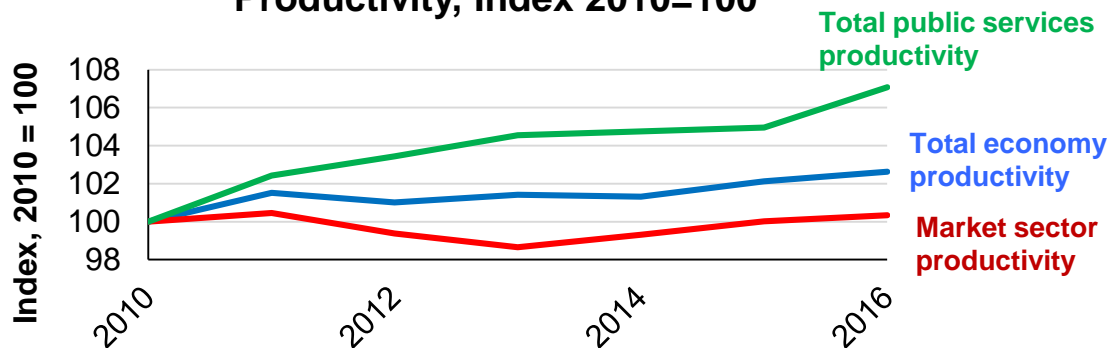
(a) Across the public sector as a whole

Over the longer term, private sector productivity has grown faster than public sector productivity, but since 2010 the reverse has been true

Productivity, Index 1997=100



Productivity, Index 2010=100



Source: ONS

<https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/datasets/growthratesandindicesfortotalpublicserviceoutputininputsandproductivitytable1>

Total economy productivity

Inputs: Hours worked

Outputs: Gross Domestic Product

Market sector productivity

Inputs: The volume of labour (adjusted for the skill mix of the workforce), and the volume of capital used.

Outputs: Total economic output of the market sector (measured by Gross Value Added, GVA).

Total public services productivity

Inputs : Inputs can be broken down into three components. They are labour, intermediate consumption (expenditure on goods and services) and consumption of fixed capital.

Outputs: are measured in one of 4 ways:

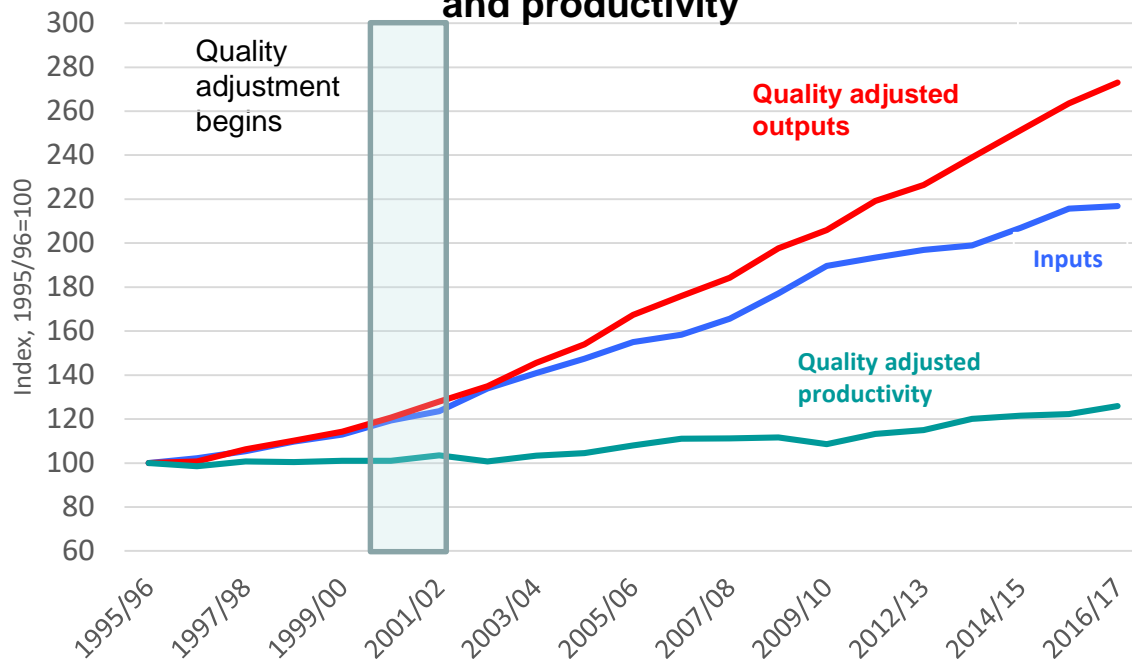
- (a) outputs are assumed to equal inputs (e.g. defence spending) – 38% of total
- (b) quality adjusted outputs equal inputs – 3%
- (c) quantity alone – 12% (e.g. social security administration and children's social care)
- (d) quality adjusted – 47%



What do the data show?

(b) Health services

UK health care inputs, quality adjusted output and productivity



Source: ONS

<https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimatesforpublicservices/2016>

Productivity growth rates (p/a)	Health	Total Economy	Public Sector
1997 to 2007	0.8%	2.1%	0.0%
2007 to 2016	1.2%	0.2%	0.6%
1997 to 2016	1.0%	1.2%	0.3%

Inputs : Inputs to publicly-funded health care have three components: labour, purchases of goods and services and consumption of fixed capital.

Outputs : Healthcare output is measured as the quantity of healthcare delivered, adjusted for changes in the quality of delivery. Outputs include hospital inpatient, outpatient and day case episodes, family health services, including General Practitioner (GP) services, prescribing – includes all drugs prescribed by General Practitioners and non-NHS provision funded by government.

Quality is measured using survival rates/health gain, waiting times and surveys of patient experience

Much of the historic productivity increase has been driven by reduced average length of hospital stay and shifting activity to day cases. This allows fewer beds and nurses per episode, though the average acuity of patients in hospital increases.

A combination of **pay restraint, improved labour productivity, centralised procurement, reduced use of agency staff, the abolition of some tiers of management and greater use of generic drugs** have delivered significant efficiency savings over the past 7-8 years.



Analysis of the technical efficiency of local government : What we've done

The Ministry of Housing, Communities and Local Government has recently analysed, in some detail, the technical efficiency of local government. This focused on local authority expenditure on different services per unit of output, adjusted for quality, i.e. a lower unit cost represents (all else being equal) greater efficiency.

The analysis compares a local authority with similar local authorities for service quality to assess the potential for efficiency savings. A 'similar local authority' is defined by controls for service quality, wage levels and property costs

The analysis controls for different local authority wage and property costs by including an Area Cost Adjustment. The quality measures include, for example: children entering a child protection plan for a second time, social care quality adjusted life years and roads considered in need of maintenance.

Analysis of the technical efficiency of local government : What we've found

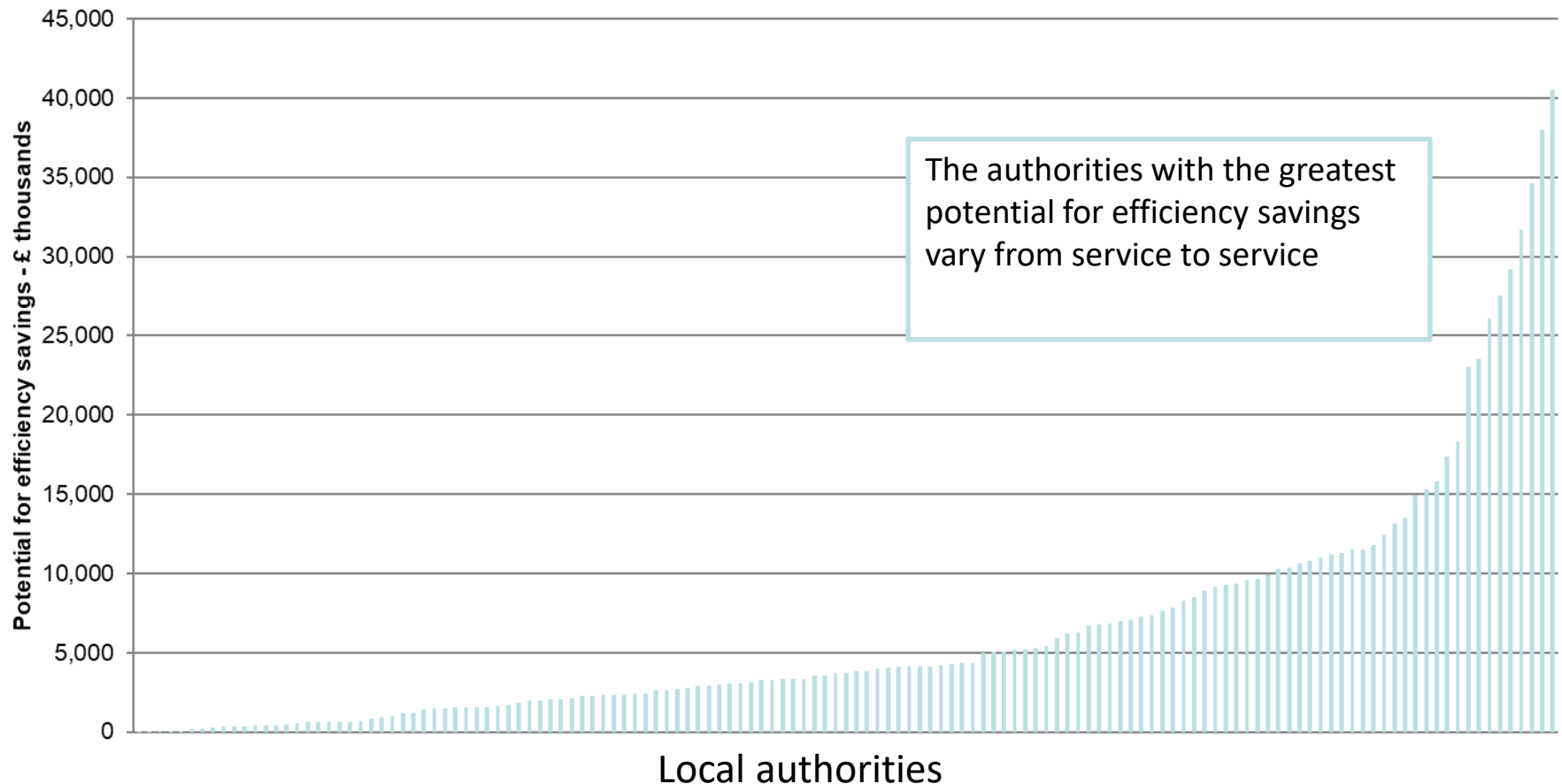
Service Area	Net current expenditure (16/17)	Share of efficiency savings
Adult Social Care	£15bn	31%
Children's Social Care	£9bn	19%
Environmental protective and cultural services excl. waste & buses*	£4bn	10%
Highway maintenance	£2bn	10%
Waste*	£3bn	9%
Planning & Development	£1bn	8%
Corporate & Democratic*	£1bn	4%
Homelessness	<£1bn	3%
Fire & Rescue	£2bn	3%
Subsidised buses	£1bn	2%

The scope for efficiency improvements has been estimated assuming all authorities operate at the median level of efficiency of similar authorities

*Does not account for quality. For the purposes of illustration efficiency estimates have been halved

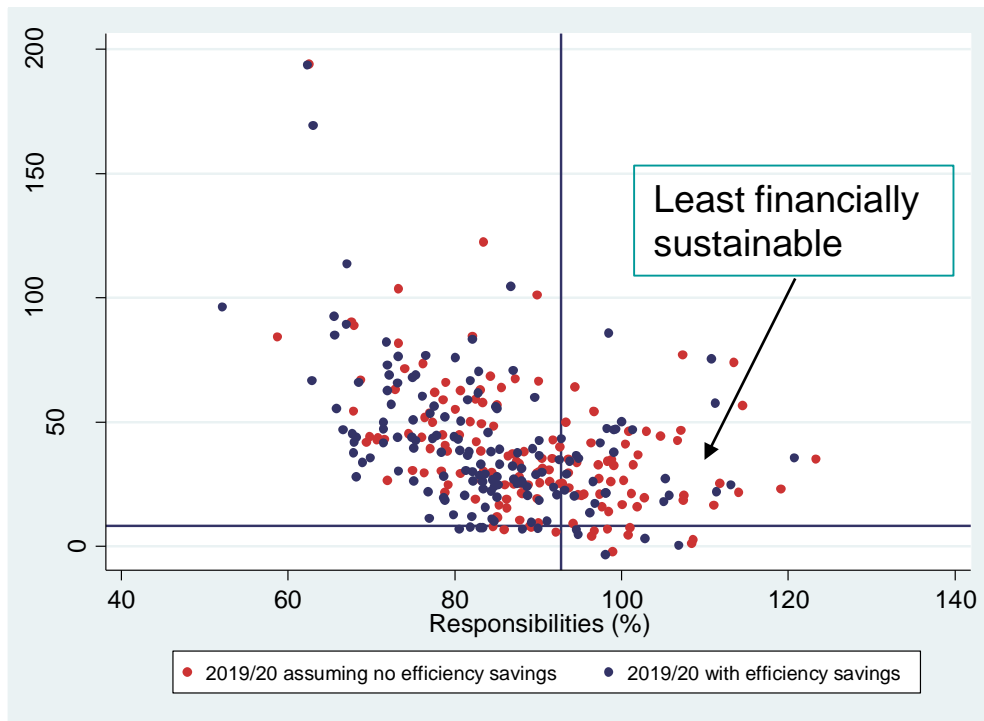
The scope for efficiency savings is not, however, evenly distributed across local authorities

Estimated efficiency savings in 2016/17 from adult social care using quality adjusted nearest neighbour median unit costs





Our analysis also suggests that those authorities that are relatively less efficient tend to be those that are less resilient in terms of financial sustainability



Local Authority financial sustainability is measured using two metrics:

- (i) Financial reserves as a % of non-discretionary spending (Reserves)
- (ii) Level of spending on non-discretionary activities as a % of total core spending power (Responsibilities)

*Core spending power measures the core revenue funding available for local authority services, including Council Tax and locally retained business rates. Spending on non-discretionary activities can exceed 100% of core spending given funding from other sources and reserves.

Drivers of public sector efficiency – the key factors

Markets & Competition

New entry competition/
market creation

Intelligent outsourcing

Strengthened incentives

Cost benchmarking

Service re-design & alternative delivery mechanisms

Prevention/
early intervention

Front-line service integration

Reconfiguring services

Empowering users: Co-production & co-design

**Hard budget constraints
+
spending flexibility**

There is no efficiency 'silver bullet.' There are many levers that need to be pulled to improve public sector efficiency.

Holding down pay

Pay systems

Shared services

Sharing best practice

Workforce capability & leadership

Organisational structure

Organisation & Workforce

Effective use of ICT

Channel shift

Technological advances

Effective use of data

Technology, Data & Targeting

Some case studies

- Public Service Data Dashboards
- Benchmarking: The Model Hospital
- The London Rough Sleeping Social Impact Bond
- The Troubled Families Programme
- Preventative Health Care
- Predictive Analytics

Public Service Data Dashboards

What are they?

A means of providing information on inputs, outputs and outcomes in one place

Numbers that Government departments recognise

Timely data drawn together by the Office for National Statistics. Incorporating impartial guidance on interpretation and comparison of statistics

Outcomes which map broadly to Government's single departmental plans

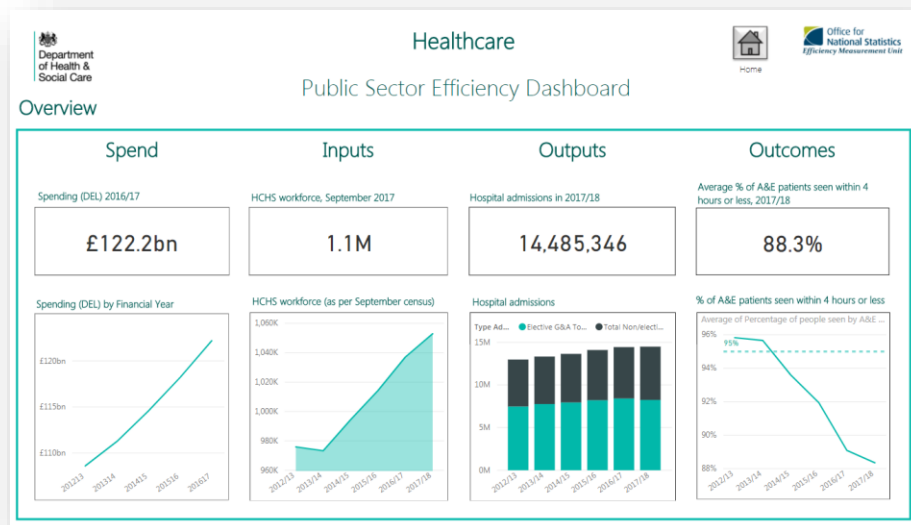
Which drivers of public sector efficiency do they address?

What do they show?

Effective use of data

Effective use of ICT

Cost benchmarking



Key data for four Departments:
Department of Work and Pensions,
Department of Health and Social Care,
Department for Education and Ministry of Justice.

Source: ONS

Benchmarking: The Model Hospital

What is it?

The Model Hospital is a free online digital service for National Health Service staff and leaders to help identify performance variation and local opportunities to improve both productivity and quality on the National Health Service front line.

It breaks down key metrics across all the activity of an NHS service provider.

Which drivers of public sector efficiency does it address?

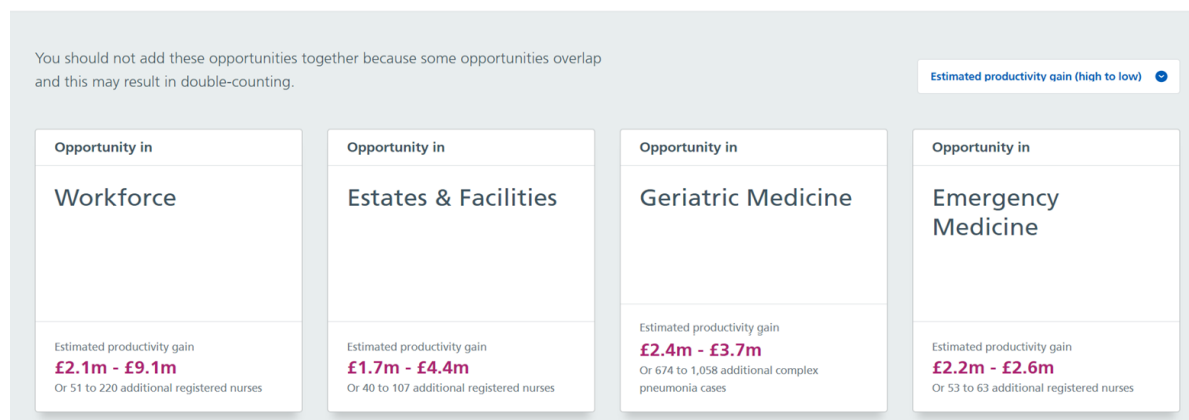
Sharing best practice

Effective use of data

Cost benchmarking

What are the benefits?

Helping to deliver an estimated £1.45bn of savings from 2017-18



The model hospital online service allows a service provider to access the efficiency gains they could realise if they performed as well as the median or better hospitals in their 'peer group' (hospitals with most similar attributes and context).



The London Rough Sleeping Social Impact Bond

What is it?

The London rough sleeping SIB was a four year programme designed to bring new finance and new ways of working to improve the outcomes for a cohort of rough sleepers whose needs were not being met by existing services.

It aimed to test if outcomes could be improved through a payment by results structure.

Which drivers of public sector efficiency does it address?

Strengthened
incentives

Front-line service
integration

Effective use of
data

How was it evaluated?

Comparison of outcomes using administrative data for SIB cohort and control group. Assessment of impact on rough sleeping and wider outcomes.

Findings

The results show that, when compared to a well-matched comparison group, the intervention significantly reduced rough sleeping over a two year period.

On average the intervention group (the SIB group) had significantly fewer episodes of rough sleeping compared to the comparison groups.

After two years: the mean number of rough sleeping contacts for the SIB group was 9.2 compared to 13.9 for the comparison group. 40% of the SIB cohort did not sleep rough at all in the two years after the start of the intervention compared to 33% of the comparison group

The Troubled Families Programme

What is it?

A programme that aims to help families placing high costs on public services.

Programme runs between 2015-2020

Reaching 400k families



Adults or children involved in crime or anti-social behaviour



Children not attending school regularly



Adults out of work



Children who need help or are in need of or subject to a child protection plan



Families affected by domestic violence and abuse



Parents and children with a range of health problems

Which drivers of public sector efficiency does it address?

Prevention/
early
intervention

Front-line
service
integration

Reconfiguring
services

Strengthened
incentives

Effective use of
data

Sharing best
practice

Workforce
capability &
leadership

How has it been evaluated?

How is it being evaluated?

Impact Analysis using linked administrative datasets to gather outcome data on both an intervention group and comparison group.

Cost Benefit Analysis, applied to the Impact Analysis findings, using unit cost data on different services and other evidence to estimate public value and fiscal benefits.

Which data is being linked?



CRIME

convictions

sentence
type

sentence
length

Police
National
Computer

pupil referral
unit

in care

educational
attainment
(KS1/2/3
scores)

National
Pupil
Database

school
absence

exclusions

special
educational
needs

type of
benefits

employment

pay & tax

Work &
Pensions
Longitudinal
Study

tax credits

pensions

nature of
health
problems

+ data from every upper tier local authority

EDUCATION & CHILD SAFEGUARDING

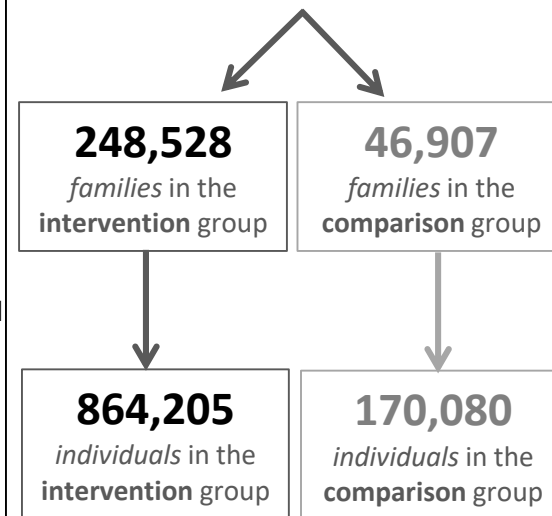
EMPLOYMENT & BENEFITS

What is the scale of the administrative linked data?

In December 2017, around 295K families were matched to administrative datasets...

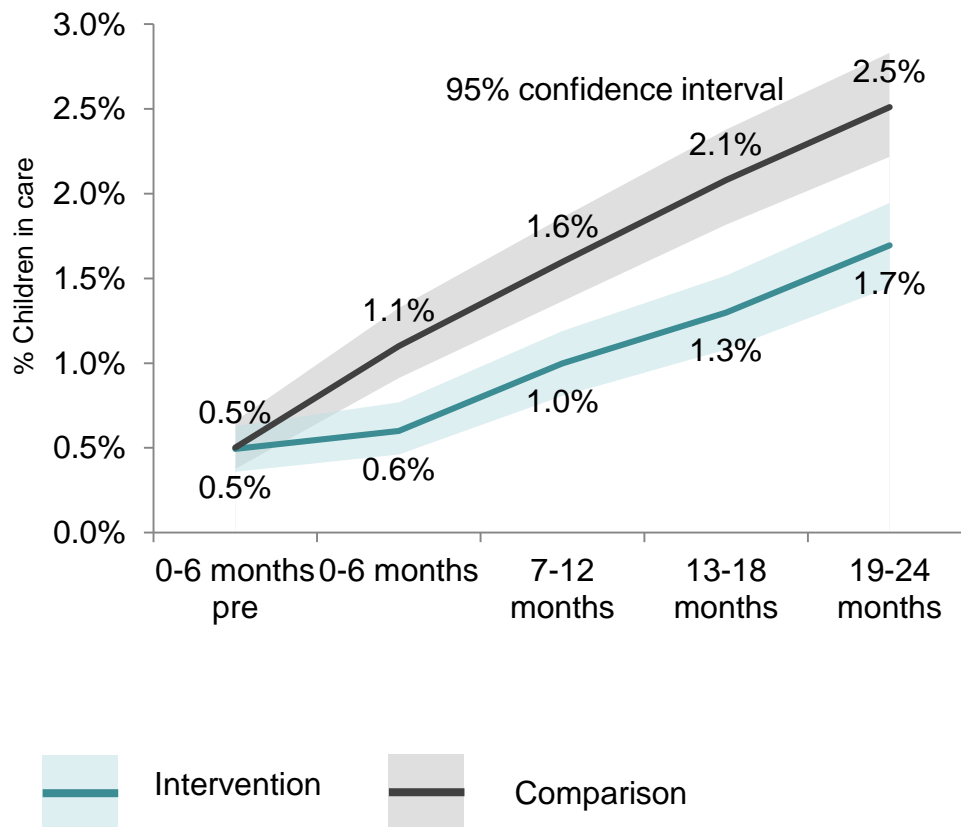


295,435 families in total



The Troubled Families Programme – Impact Analysis

Smaller proportion of Looked After Children in intervention group than comparison group.



Smaller proportion of adults given custodial sentences in the intervention group in the two years after joining the programme

Anytime within two years after programme:	Custodial sentence	Cautioned	Convicted
Proportion of adult offenders on the programme	1.2%	1.9%	5.9%
Proportion of adult offenders in the comparison group	1.6%	2.2%	6.1%
Difference	-0.4%***	-0.3%	-0.3%

Note: statistically significant difference; *** p value <0.001.

These impacts are sufficient to produce outturn monetised benefits greater than the costs

What is it?

Preventative health care is about stopping problems (e.g. by vaccination or stopping smoking); spotting problems early (e.g. screening for illness); and maintaining independence (e.g. rehabilitation). The National Health Service currently spends around £97bn on treatment and £8bn on preventative care.

Which drivers of public sector efficiency does it address?

Cost
benchmarking

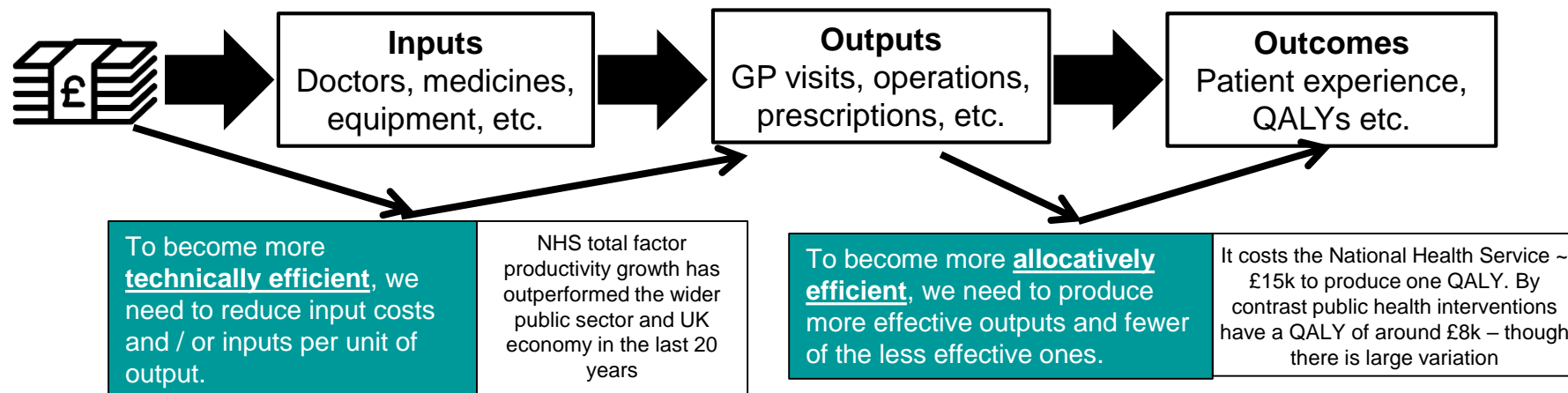
Prevention/ early
intervention

Technological
advances

Effective use of
data

What are the benefits?

It promotes improved allocative efficiency – shifting resources to more effective interventions



Predictive Analytics



What is it?

Aim

To improve the effective targeting of services towards vulnerable children and other groups

Method

Develop predictive risk modelling tools to assist child welfare screening and other decisions

Which drivers of public sector efficiency do they address?

Prevention/
early
intervention

Effective use of
data

Technological
advances

Effective use of
ICT

What are the benefits?

At least 53 local authorities and 14 police forces are using predictive algorithms in the UK for applications as varied as traffic management and identifying children at risk of neglect or abuse. By allowing earlier intervention and better targeting of interventions they help to improve outcomes for citizens, reduce costs and improve efficiency.

Photo: Cate Dingley for The New York Times

Article by Dan Hurley Jan., 2018: <https://www.nytimes.com/2018/01/02/magazine/can-an-algorithm-tell-when-kids-are-in-danger.html>

Predictive algorithms. Sky news: <https://news.sky.com/story/predictive-algorithms-hidden-revolution-taking-place-in-uks-councils-and-police-forces-11650160>

Assessment of the scope for improving efficiency further

Drivers of efficiency

Hard budget constraints and spending flexibility

Markets and competition

Service redesigns and alternative delivery mechanisms

Organisation and workforce

Technology, data and targeting

Short term

£££

££

££

£££

£

Medium term

££

£££

£££

££

££

Long term

£

££

££

££

£££

Our analysis of past trends and future scope suggests:

- Hard budget constraints and organisational and workforce changes – including pay constraint – are powerful drivers in the short run
- Service re-design and more competition matter in the medium term
- Technology and data are longer term drivers

However, there is potential for these drivers to be mutually reinforcing.

Short term: Implemented in the next 1 to 2 years

Medium term: Implemented in the next 5 years

Long term: Implemented beyond the next 5 years

£ limited scope for efficiencies,

££ some scope for efficiencies,

£££ substantial scope for efficiencies

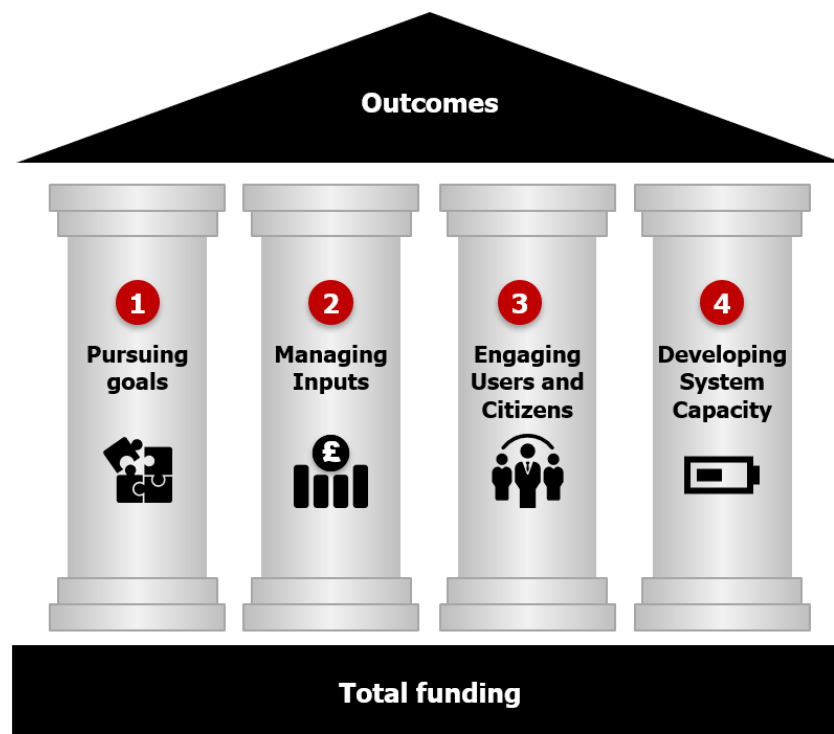
(a) Public Value and the Public Value Framework:

What is it?

A new framework to build a stronger public value and efficiency culture at all levels across the public sector. It is currently being piloted and the framework refined.

Government departments will be required to report on public value performance and the improvements they will make against the framework in their 2019/20 Single Departmental Plans.

Public value is expected to play a key role in the 2019 Spending Review



(b) Public Sector Efficiency Group

What is it?

A cross-departmental analysts' group that meets every 3-4 months, comprising of colleagues across Whitehall with an interest in public sector efficiency.

What does it do?

i) Bring together **evidence on efficiency** trends and drivers.

UK and international evidence → *Literature reviews*

Departments' efficiency stories → *Department papers*

Advice from experts and practitioners → *Experts workshops*

ii) Draws out **insights for achieving further efficiency improvements**.

iii) Disseminates findings from key pieces of analytical work and research and produces reports.

(c) Promoting data analytics and evidence of what works across the wider public sector

The Ministry of Housing, Communities and Local Government and the Cabinet Office have established a local authority what works and data analytics network. There are now also 12 Office of Data Analytics across local government.

(d) Office for National Statistics

Ongoing work by the ONS Public Sector Efficiency Measurement Unit to improve data and statistics.