Chapter 1

Ineffective spending and waste in health care systems: Framework and findings

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This chapter presents the overall framework and approach that guided development of the report as well as its main findings. Starting with a simple and pragmatic definition of waste, the first section identifies and groups various categories of waste. This framework is later used to identify policy levers to tackle these different types of waste. The next three sections provide an overview of the report's findings regarding wasteful clinical care, operational waste and governance-related waste, respectively. The concluding section points to the benefits of tackling different categories of waste and presents the organisation of the overall report.

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Introduction: Why tackling waste is an effective value-enhancing agenda for health care systems

Most people involved in the health care system – policy makers, managers, workers and even patients – have opinions on how additional resources could be used efficiently to deliver better health services. Health Technology Assessments (HTAs) reveal which new treatments are better than old ones and should be accessible. Operational data indicate where services are overstretched. Investments in e-infrastructure are postponed due to lack of funding. Give a health minister an extra billion euros, a hospital administrator an extra 10 million, or a general practitioner (GP) an extra 10 000, and each will – probably – spend the money wisely and improve health services.

But it is a different matter when the same people are asked to take money *out* of the system to prevent the escalation of health expenditure. Introduction of new treatments is rarely accompanied by disinvestment in older inferior ones. Regional authorities or managers struggle to close down or merge hospitals to realise the economies of scale that could improve quality and reduce costs. Patients insist on extra tests or prescriptions just "to be sure", just to get back to work faster, ignoring the risks to their own health and despite the lack of evidence that they would make a difference. Yet to keep public budgets in check, policy makers have to decide how to curb health expenditure.

Analysts – especially in the context of the response to the global financial crisis of 2008 – often distinguish between cost-cutting measures and structural reforms (Clements et al., 2014). The former may have proven effective but can be unsustainable or even detrimental to outcomes. For instance, cuts in public health expenditure undermine efforts to prevent the onset of diseases; increases in co-payments have impoverishing effects. On the other hand, structural reforms are expected to increase efficiency and eventually "bend the curve" of public expenditure growth (Coady et al., 2014; OECD, 2015a). Without denying their necessity, the reality is that many structural reforms require complex changes on multiple fronts and sustained efforts, and evidence on their impact, especially in the short run, is weak.

This report contends that in the current debate on the choice between cost-cutting measures and structural reforms, an often missing piece is tackling ineffective spending and waste. In fact, cutting waste is an intermediate objective worth pursuing as it can: i) bring strategic savings; ii) support a transformative focus on value in health care systems; and iii) substantially contribute to enabling long-term structural reforms.

Health care systems should deliver care that maximises value for patients. The vast majority of OECD citizens can access the care they need, in a timely way, without incurring disproportionate out-of-pocket costs. Life expectancy at birth is now over 80 years and OECD citizens are far less likely to die after a heart attack or stroke than they were a decade ago. Although the prevalence of chronic conditions like diabetes is rising, health care systems are getting better at effectively managing them and reducing harmful complications.

Yet a significant share of health spending makes only a modest contribution to improving patient outcomes. Worse, some health resources are not just spent on low-value care, they are wasted (Box 1.1 presents country-specific estimates). Acknowledging this may not be easy for health care system actors but this report highlights the positive corollary to this difficult admission: opportunities most certainly exist to release resources within the system to deliver better-value care. In other words, cutting ineffective spending and waste can produce significant savings – a strategic move for policy makers. In addition, it mobilises stakeholders around the transformative value-based agenda many commentators argue must drive reforms (Porter and Teisberg, 2006). The report highlights that many "waste-tackling" policies are consistent with – and in fact pave the way for – longer-term structural reforms.

Box 1.1. **Country-specific estimates of potential savings from eliminating waste**

- A conservative estimate suggests that waste represents more than 20% of total expenditure in the United States, with an upper bound nearing 50% (Berwick and Hackbarth, 2012).
- An investigation suggested that nearly one-third of total health expenditure in Australia could be deemed wasteful (Swan and Balendra, 2015).
- A study in the Netherlands estimated that 20% of the budget for acute care could be saved by reducing overutilisation and increasing integration of care (Visser et al., 2012).

This chapter presents the overall framework and approach that guided the report's development as well as its main findings. Starting with a simple and pragmatic definition of waste, the first section identifies three main categories of waste. This framework later helps to identify policy levers to tackle these different types of waste. The next three sections provide an overview of the report's findings regarding wasteful clinical care, operational waste and governance-related waste, respectively. The final section briefly concludes and presents the organisation of the overall report.

1. Framing "waste": Definition, classification of wasteful activities, and policy options

The case that a significant share of health care spending can be deemed wasteful was first systematically argued less than ten years ago (New England Healthcare Institute, 2008; Bentley et al., 2008; Berwick and Hackbarth, 2012). But these US-centred analyses, or subsequent ones, provide neither a simple definition of waste nor a consistent classification of wasteful activities conceptualised in a way that can be transposed across health care systems. Moreover, no agreement exists among authors about how waste and efficiency relate. This brief section defines waste and presents three main categories of wasteful activities; these are identified by linking health care system actors involved in generating waste to reasons why they might do so. This approach helps organise categories of policy options to tackle waste.

This report pragmatically deems as "wasteful":

- services and processes that are either harmful or do not deliver benefits
- costs that could be avoided by substituting cheaper alternatives with identical or better benefits.

This characterisation covers health care spending that could be eliminated without undermining achievement of health care systems' objectives. At the level of the health care system, this roughly corresponds to the notion of "productive efficiency", which describes a situation where a given result is obtained at the lowest possible cost. Tackling waste – as defined here – thus does not require rationing or systematically reallocating resources from one category of patients to another or even from one category of care to another. In other words, the "waste" policy agenda does not expand to the broader question of whether a different combination of inputs could bring better aggregate results (allocative efficiency and redistribution). Waste is a category of inefficiency but not all inefficiencies constitute waste.[1]

Wasteful activities involve different stakeholders in the health care system and occur for various reasons. Using these two dimensions to characterise each type of wasteful activity, the framework proposed distinguishes three categories of waste. Actors potentially involved in generating waste fall into four categories: patients, clinicians, managers (who operate at the level of a facility or at a more macro level – e.g. in health care system administration)[2] and the system regulator (this can be a single entity or many). These actors have different objectives and incentives but overall the health care system's organisation should align their behaviours so they contribute to achieving the health care system's goals.

Four main reasons can explain why individual actors might contribute to wasting resources:

- First, they do not know better: cognitive biases, knowledge deficits, risk aversion and habits lead to suboptimal decisions and errors and deviations from best practice.
- Second, they cannot do better: the system is poorly organised and managed and co-ordination is weak.

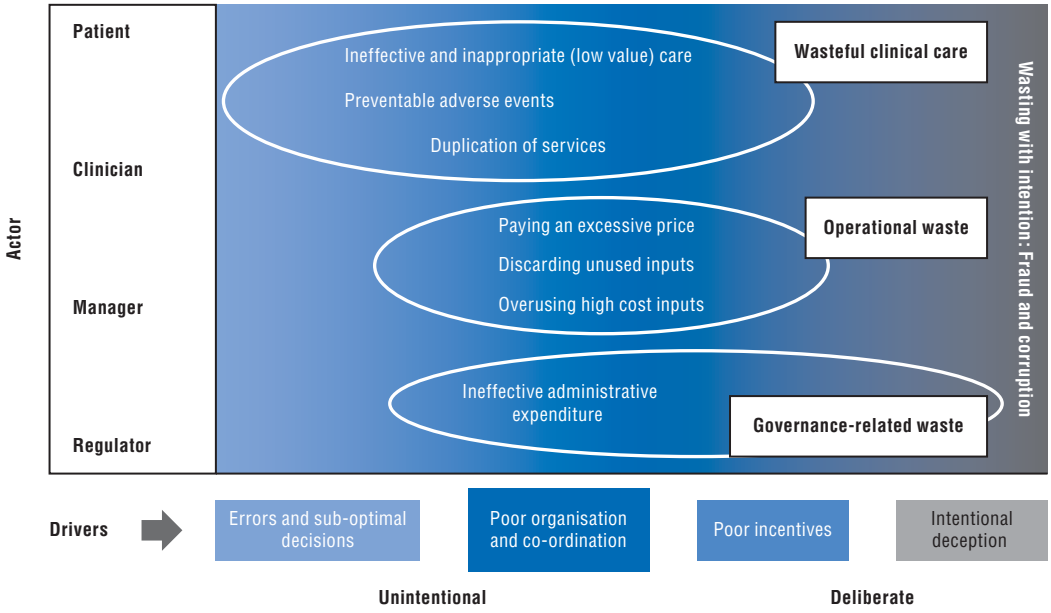
In these first two situations, for the most part, actors do not intend to generate waste and are doing their best but the outcome is suboptimal:

- Third, actors could stand to lose by doing the right thing; this occurs when economic incentives are misaligned with system goals – for instance, when clinicians are paid for providing services irrespective of whether the services add value.
- Fourth, all categories of actors might generate waste intentionally, with the sole purpose to serve their self-interest. This last driver is in fact a variation on the third (poor incentives) but it more explicitly points to fraud and corruption.

Linking actors and drivers, Figure 1.1 helps identify three categories of waste: wasteful clinical care, operational waste and governance-related waste:

- Wasteful clinical care covers instances when patients do not receive the right care. This includes preventable clinical adverse events, driven by errors, suboptimal decisions and organisational factors, notably poor co-ordination across providers. In addition, wasteful clinical care includes ineffective and inappropriate care – sometimes known as low-value care, mostly driven by suboptimal decisions and poor incentives. Last, wasteful clinical care includes the unnecessary duplication of services.
- Operational waste occurs when care could be produced using fewer resources within the system while maintaining the benefits. Examples include situations where lower prices could be obtained for the inputs purchased, where costly inputs are used instead of less

Figure 1.1. **Three categories of waste mapped to actors involved and drivers**



expensive ones with no benefit to the patient, or where inputs are discarded without being used. This type of waste mostly involves managers and reflects poor organisation and co-ordination.

- Governance-related waste pertains to use of resources that do not directly contribute to patient care, either because they are meant to support the administration and management of the health care system and its various components, or because they are diverted from their intended purpose through fraud, abuse and corruption. It thus comprises two distinct types of waste. The first is administrative waste, which can take place from the micro (manager) to the macro (regulator) level. Again, poor organisation and co-ordination are the main drivers. Second, fraud, abuse and corruption, which divert resources from the pursuit of health care systems' goals, are also wasteful. Any of the actors can be involved, and in fact, a comprehensive analysis of the topic requires the inclusion of businesses/industries operating in the health sector. In any case, the intention to deceive is what primarily distinguishes this last type of waste.

At a strategic level, two broad options are available to tackle waste: i) stop doing things that do not bring value; and ii) swap when equivalent but less pricy alternatives of equal value exist.[3] Presenting evidence-based options for governments to release misspent resources is challenging. Countries' experiences and track records in identifying, measuring and explicitly dealing with the various types of waste reviewed are very uneven and not systematically documented. To fill this gap, a policy questionnaire was sent to OECD countries.[4] The report draws heavily on the countries' responses, as well as on published documents from all OECD countries. In many instances though, evidence on the impact of policies remains limited or mixed and is highly context-specific.

Operationalising the waste-tackling agenda requires more generation, publication and use of information. Information is the basis of evidence-based leadership but is also important in the design of specific policies that use other policy levers.

In parallel, policies that target the actors involved in the generation of waste and address the drivers of their behaviours are needed. Four categories of policy levers are relevant:[5]

- Economic and financial incentives that seek to influence the behaviour of patients, clinicians or managers; these are most relevant when poor incentives are the root cause of the wasteful behaviour.
- Behaviour change policies and information support – including education, persuasion and training – to address barriers to optimal decisions.
- Organisational changes, which include policies that modify the location, role, number, co-ordination and tools available to accomplish specific tasks of various stakeholders.
- Regulations to mandate changes in behaviour, organisation or information.

The following sections of this chapter present the main findings of the report on wasteful clinical care, operational waste and governance-related waste in turn. Each section clarifies and provides examples of waste, elaborates on the root causes, and summarises available evidence on the magnitude of the problem and the challenges related to measuring it. Finally, it highlights strategies to tackle waste and groups them using the categories of levers they involve.

2. Wasteful clinical care: When patients do not receive the right care

Wasteful clinical care refers to situations when patients do not receive the right care, for reasons that could be avoided. It comprises preventable adverse events that lead to patient harm as well as low-value care.

2.1. Care that adds little value or is even harmful is not rare

Adverse events are devastating for patients, wasteful for health care systems and often preventable

Adverse events threaten patient safety. The Harvard Medical Practice Study (Brennan et al., 1991) defined an adverse event as "an injury that was caused by medical management (rather than the underlying disease) and that prolonged the hospitalisation, produced a disability at the time of discharge, or both". In a similar vein, the Institute for Healthcare Improvement defined an adverse event as "unintended physical injury resulting from or contributed to by medical care (including the absence of indicated medical treatment), that requires additional monitoring, treatment, or hospitalisation, or that results in death" (*www.ihi.org*). A "clinical error" may lead to an adverse event or may not, if detected in time or simply through good fortune (Reason, 2000).

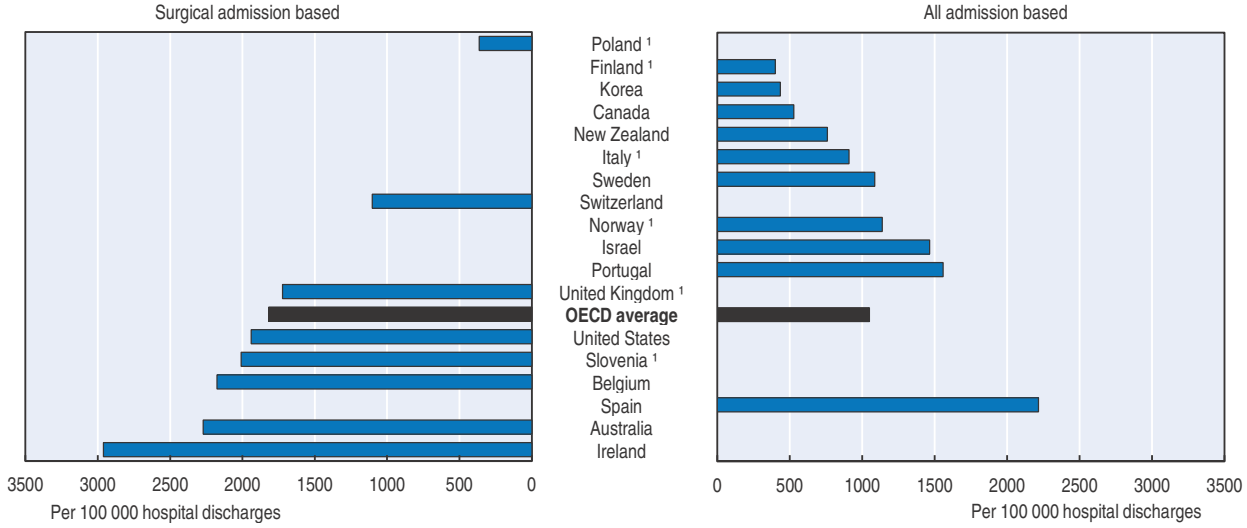
Despite providers' best intentions, preventable adverse events persist in health care systems. The delivery of care inherently involves risk and, as such, may lead to adverse events. Some unexpected or undesirable outcomes are not avoidable and should not be defined as waste. However, adverse events are frequently preventable. The most striking occurrences of avoidable adverse events are the so-called "never events" or "sentinel events", which should never occur and are always preventable. These rare events include the failure to remove foreign bodies after surgery and operating on the wrong site on a patient's body, such as removal of the wrong kidney. However, health care-associated infections, medication errors and post-operative complications such as blood clots are much more frequent and, to a large extent, preventable. Preventable adverse events often lead to morbidity and mortality in patients as well as costs to payers for additional health care services.

Available numbers suggest that the magnitude and costs of adverse events are significant:

- A recent report suggesting that medical errors might be the third cause of death in the United States starkly calls attention to the problem (Makary and Daniel, 2016).
- International studies indicate that adverse events in hospitals add between 13% and 16% to hospital costs (Jackson, 2009) and that between 28% and 72% of them are considered avoidable upon expert examination (Brennan et al., 1991; Rafter et al., 2016, among others).
- Data on primary care are scarce, but the Primary Care International Study of Medical Errors showed that approximately 80% of errors could be classified as "process errors", the vast majority of which are potentially remediable (Makeham et al., 2002).

The OECD collects data on four adverse events (Figure 1.2). Numbers show close to a ten-fold variation in the reported rates across health care systems. It is extremely unlikely that these figures reflect "real" variations; rather they illustrate the enormous differences in the willingness of individuals in different systems to admit that mistakes were made.

Figure 1.2. **Postoperative sepsis in abdominal surgeries, 2013 (or nearest year)**



Note: Rates have not been adjusted by the average number of secondary diagnoses. The OECD average includes eight countries (left panel) and ten countries (right panel).

1. The average number of secondary diagnoses is < 1.5.

Source: OECD Health Statistics (2016), *http://dx.doi.org/10.1787/health-data-en.*

StatLink http://dx.doi.org/10.1787/888933443941

Avoidable adverse events are driven by errors and suboptimal decisions as well as organisational shortcomings that allow them to happen. Examples include clinicians' failures to follow standard practice (negligence) that are not detected early enough, or organisations' failure to establish such practices and familiarise personnel with them. Similarly, failures in communication between medical staff can lead to adverse events but only in the absence of systems that make such failures visible and then intercept them.

Low-value care can occur at all stages of the care pathway

The vast majority of clinicians strive to select the care best adapted to each patient and ideally they are mindful of cost. Low-value care refers to situations when these

objectives are not met. Low-value care comprises ineffective care, i.e. interventions not proven to bring clinical value, and interventions for which the risk of harm exceeds the likely benefit. It extends to inappropriate care: interventions that can be effective for specific patient groups but are performed in a way that either does not conform to evidence-based clinical guidelines or does not reflect patients' preferences. Factoring costs in, low-value care also includes interventions that provide marginal or no health benefit over less costly alternatives and more broadly, care whose benefit is disproportionately low compared to the costs – in other words, not cost-effective.

Low-value procedures can be found at all stages of the care pathway, starting with overtesting, which refers – for instance – to the excessive or premature use of imaging (for low back pain, headaches). It can lead to overdiagnosis – the diagnosis of a person with a condition that will not cause harm. For instance, a Cochrane review found for every 2 000 women invited for breast cancer mammograms during ten years, one will have her life prolonged and ten healthy women will be treated for cancer unnecessarily (Gøtzsche and Jørgensen, 2013), implying that a more targeted approach to screening may be necessary. Other instances of low-value care include unnecessary surgical interventions (e.g. unwarranted caesarean sections, knee arthroscopy for osteoarthritis). An analysis of Australian hospitals revealed that five procedures not supported by clinical evidence took place more than 100 times a week. The five "do-not-do" procedures were: vertebroplasty for painful osteoporotic vertebral fractures; knee arthroscopy for osteoarthritis; laparoscopic uterine nerve ablation for chronic pelvic pain; removal of healthy ovaries during a hysterectomy; and hyperbaric oxygen therapy for a range of conditions including cancer, Crohn's disease and cerebrovascular disease (Duckett et al., 2015). Medicines can also be involved. The prescription of antimicrobials[6] is a perfect example of a life-saving treatment whose inappropriate use is not only wasteful but poses a systemic threat to society's health (Box 1.2).

Low-value care is nowhere fully quantified, but the extent of the problem is undeniable. Geographical variations in clinical patterns are the main and most powerful tool offering insights into the magnitude of waste due to low-value care. Indeed, the considerable variations observed in the quantity of care delivered to patients cannot be explained by demand factors, such as morbidity and socio-economic differences, or by supply factors, such as accessibility of particular interventions or diagnostic tools. A 2014 OECD study reviewed geographical variations within and between 13 countries for ten procedures. Rates of cardiac procedures varied more than three-fold between countries and up to six-fold within-country. Rates of knee replacements varied more than five-fold between different regions in Canada, Portugal and Spain (OECD, 2014). It is difficult to imagine that these variations reflect differences in need. Rather, individuals in some regions must receive interventions that in other regions are considered unnecessary, or else severe underprovision of services occurs in those regions with the lowest intensity of interventions.

The drivers of low-value care are primarily suboptimal decisions interacting with incentives that are misaligned with health care systems' goals. Discrepancies between how care should be delivered as prescribed by guidelines and how care is delivered in practice can be driven by knowledge deficits, cognitive bias, or resistance to changing traditional practice, despite evidence that an old practice is outdated. The rise of defensive medicine, driven mainly by fear of missing a low-probability diagnosis and fear of litigation, can also fuel overtreatment, notably the ordering of unnecessary tests. Patients' requests for

Box 1.2. **Low-value care with high stakes: Tackling overprescription of antimicrobials**

The inappropriate use of antimicrobials has a detrimental impact:

- Antimicrobial therapies play an essential role in modern medicine but their inappropriate use – a form of low-value care – is the most important factor responsible for increasing levels of antimicrobial resistance (AMR). Excess use in agricultural livestock constitutes another significant portion of the total inappropriate consumption of antimicrobials.
- In recent years, total antimicrobial consumption stabilised or even decreased in some countries but it continues to grow in others, despite growing concerns.
- Inappropriate use of antimicrobials represents about 50% of all antimicrobial consumption by humans (Wise et al., 1998). In long-term care and general practice, however, inappropriate consumption may be as high as 90% of all prescriptions (Wang et al., 2014). Medical conditions at higher risk for inappropriate use include viral respiratory tract infections and urinary tract infections, due to empiric prescribing.
- The economic consequences of inappropriate use of antimicrobials are significant. Large negative externalities are incurred by society as a consequence of the development of AMR. Patients infected with AMR organisms suffer from prolonged and severe morbidity, and increased risk of mortality. In 2007, this expenditure summed to EUR 940 million in Europe while the Centers for Disease Control and Prevention (CDC) calculated that in 2012 AMR cost USD 20 billion in the United States (ECDC and EMEA, 2009; CDC, 2013). Modelling predicts that compared with a world with no AMR, the economic impact associated with current rates of AMR may reach 0.03% of gross domestic product (GDP) in 2020 and 0.16% of GDP in 2050 in OECD countries, a cumulative loss of USD 2.9 trillion (Cecchini et al., 2015).
- Inappropriate antimicrobial consumption is predominantly driven by human factors underpinning the behaviour of physicians (prescription habits) and patients (who insist on an antimicrobial prescription or self-medicate). Organisational barriers, for instance insufficient availability of rapid diagnostic tests (RDTs), might also result in inappropriate prescription of antimicrobials (Cabana et al., 1999).

More rational antimicrobial consumption can be achieved by combining four policy levers.

- Interventions can trigger behavioural changes in the actors involved:
  - Development and implementation of evidence-based clinical guidelines that allow clinicians to benchmark their prescribing in a larger framework of good medical practices and rationalisation of antimicrobial use.
  - Antimicrobial stewardship programmes combining multidisciplinary activities to regulate and persuade both prescribers and the public towards appropriate use of antimicrobials. Activities can include guidelines, monitoring, education and campaigns. Well-designed stewardship programmes can decrease both antibiotic prescription rates (median change up to -40%) and AMR (median change up to -68% of resistance) (Davey et al., 2013). For example, the Kaiser Permanente group in the United States achieved a 45% decrease in some antibiotic prescriptions after implementation of a multifaceted programme targeting prescribers (Epson, 2015).
  - Multimedia campaigns help inform care-seekers of the effects of inappropriate use of antimicrobials. Belgium implemented mass media campaigns targeting the general population as part of a broader strategy aimed at rationalising use of antimicrobials. Between 2000 and 2015 antibiotic use decreased by 39%, producing cumulative savings of about EUR 642.2 million (Goossens, 2015).

Box 1.2. **Low-value care with high stakes: Tackling overprescription of antimicrobials** *(cont.)*

- Organisational changes can help clinicians better target their antibiotic use:
  - Mandating the use of RDTs whenever available allows physicians to make evidence-based judgement on the use, selection and duration/dosage of antimicrobials, and to manage patient expectations on prescription of treatment. According to a Cochrane systematic review and meta-analysis, the use of point-of-care tests can reduce antibiotic prescription by 22% compared to empiric prescribing (Aabenhus et al., 2014). In France, the increase in RDT use produced a 39% decrease in antibiotic prescriptions by participating primary care doctors (Michel-Lepage et al., 2014).
  - Re-organisation of procedures to enforce delayed prescription can be implemented in primary care and outpatient settings to reduce prescribing for cases that can be managed without immediate antimicrobial use.
- Economic incentives targeting providers and care-seekers can steer appropriate antimicrobial consumption:
  - Perverse incentives, such as concurrent prescribing and sales by physicians or pharmacists, should be eliminated by dissociating these functions. Pay-for-performance (P4P) schemes can motivate adherence to specific, tangible and measurable good practice targets. In Sweden, a modest performance incentive closed a third of the gap between existing and targeted prescription rates (Anell et al., 2015).
  - Raising the out-of-pocket cost to patients of antimicrobials that are more likely to be used inappropriately can help but this intervention needs a careful design to avoid unintended impacts. For instance, introduction of a reimbursement cap for fluoroquinolones in Canada produced an 80% decrease in the number of fluoroquinolone prescriptions that was partially offset by an increase in prescriptions for other antibiotics (MacCara et al., 2001).
- Finally, countries should continue to maintain and support development of effective surveillance systems in two directions: monitoring: i) the prevalence of AMR; and ii) trends of antimicrobial consumption. Policy makers should understand how to interpret data depending on the collection strategy (sales versus drug reimbursement), and aim to obtain representative information on the volume, cost and temporal and geographical patterns of antimicrobial use across all relevant disciplines of health care.

additional treatments are another important driver of low-value care. In the patient's mind, "doing nothing" or "doing less" may be indistinguishable from doing harm. The provision of low-value care is driven also by financial incentives, such as case-based payments or fee-for-service (FFS) to providers or coverage of procedures irrespective of the value they bring to patients. Insured patients and providers, represented by both clinicians and facilities' managers who are paid for their services, have no incentive to avoid low-value care.

2.2. Changing behaviours is central to the promotion of high-value care

More and better information is required to scope and curb the incidence of adverse events and low-value care

The transparency and quality of reporting of adverse events remain limited on average. When it comes to adverse events, overcoming the instinct – or even incentives – to underreport incidents is complex. Moving to a culture of transparency requires trust – that

the objectives of data collection are not to assign blame but to learn – and confidence – that lessons will be drawn and corrective actions taken to prevent future occurrences. Such changes require strong and sustained leadership so data collection improves with its use. Not all OECD countries have implemented adverse event reporting and learning systems, and systems usually do not capture adverse events beyond inpatient hospital care – that is, those occurring in outpatient care, in nursing homes or at home. The culture of reporting and learning could usefully be extended to other providers, as in New Zealand, where ambulance services, hospices, and aged residential care organisations and other non-hospital providers are included (Health Quality & Safety Commission New Zealand, 2015).

In the domain of low-value care, substantial progress on data collection has been achieved. At least ten OECD countries use atlases to identify variations in health care activities and outcomes across geographical areas. Overall though, countries are at varying stages of developing indicators and consensus is needed on which indicators to use and how to standardise and interpret numbers. An additional constraint is that assessing the appropriateness of a specific procedure often requires information on conditions (disease codes) and other patient characteristics. Administrative databases seldom include enough details. The OECD is working with the *Choosing Wisely*® campaign (see below) to develop internationally comparable indicators of inappropriate care.

Finally, better integrating patients' perspectives in data systems, and ultimately in decision making, is needed. Identifying wasteful clinical care requires understanding and rating the benefits and negative outcomes of clinical procedures. This is traditionally done from a clinical perspective, but clinicians and patients may have different views and both should be incorporated in decision making. Collecting data directly from patients in the form of Patient-Reported Experience Measures (PREMs), Patient-Reported Outcome Measures (PROMs) and Patient-Reported Incident Measures (PRIMs) can facilitate this. Information from PREMs and PROMs can be used to ensure that patients get care that is aligned with the outcomes that matter to them – which is fundamental to appropriate care. PRIMs can help patients assure the safety of their own health care (Box 1.3). Filling such information gaps is crucial for awareness-building and subsequent development of an evidence-based toolbox of policy levers and for bringing about change.

Box 1.3. **Improving patient safety in OECD health care systems: Patient Reported-Incident Measures in Norway**

As part of Norway's patient safety campaign that began in 2011, the Patient-Reported Incident in Hospital Instrument was included in the national patient experience survey. The instrument asks 13 questions about patient-perceived safety in hospitals, including staff handwashing and medication errors. Rates of patient-reported incidents were found to correlate well with objective measures of patient safety, such as the Global Trigger Tool (Bjertnaes et al., 2015). More information can be found in Box 2.7.

Behaviour change policies and incentives both matter when it comes to tackling wasteful clinical care

For low-value care, soft policy levers designed to change behaviour include public reporting, audit and feedback, and providing doctors and patients with guidelines and information to encourage dialogue between them. For example, a combination of

enhanced feedback and educational reminder messages was associated with a reduction of more than 20% in test ordering by doctors in Scotland (Thomas et al., 2006). Clinical guidelines have the potential to improve the process and outcomes of care, reduce the use of unnecessary interventions and save costs. In the United States, an evaluation of a programme for patients with non-small cell lung cancer found outpatient costs were 35% lower for those who followed a programme using evidence-based guidelines compared to patients not in the programme (Neubauer et al., 2010).

Eliminating low-value care requires that clinicians' and patients' perceptions of inappropriate care are aligned. This can be achieved through intensive dialogue between them, which can be facilitated. Tools to support shared decision making between clinicians and patients can help patients understand, for instance, that the desire to detect harmful cancer early may result in harm due to unnecessary treatment of non-threatening cancers. Such decision aids have been shown to improve decision-related outcomes for breast cancer treatment including surgery, radiotherapy, endocrine therapy and chemotherapy (Zdenkowski et al., 2016). They have also been shown to reduce rates of hip and knee replacement by 20-40% (Arterburn et al., 2012). Building on these principles, the *Choosing Wisely*® campaign aims to reduce low-value care (Box 1.4).

Box 1.4. **Reducing low-value care in OECD health care systems: The *Choosing Wisely*® initiative**

The *Choosing Wisely*® campaign, initiated by clinicians, aims to reduce low-value care by encouraging patient-provider conversations about whether certain treatments add value. The campaign began in the United States in 2012, and subsequently spread to several other countries. An analysis of early trends among seven services subject to *Choosing Wisely*® recommendations in the United States found a modest decrease in the use of two services. Use of imaging for headache decreased from 14.9% to 13.4%. Cardiac imaging for low-risk patients decreased from 10.8% to 9.7% (Rosenberg et al., 2015). However, the use of two other services increased and trends were stable for three other recommendations. This suggests that *Choosing Wisely*® should be used in conjunction with other interventions. More information can be found in Box 2.8.

In terms of safety, ensuring the systematic use of fairly simple checklists has proven effective (Bliss et al., 2012), as well as initiatives targeting health workers' hand hygiene to reduce health care-acquired infections (Box 1.5). To be effective, however, checklists and similar tools need to be embedded within broader educational, monitoring and feedback activities. The end goal must always be to sustain a *culture* of quality and safety improvement, rather than to merely implement several disconnected initiatives.

In addition to soft policy tools, modifications to existing economic incentives as well as organisational changes can support delivery of high-value and safe care. Some OECD health care systems have experimented with different reimbursement approaches, including blended payment systems that add a pay-for-performance (P4P) element to the existing case-based payments or FFS. In Denmark, under a pilot initiative, selected hospitals are reimbursed according to patient outcomes, instead of the diagnosis-related group (DRG) payment system. France sets financial sanctions for doctors who are outliers in prescribing practices and a P4P scheme in ambulatory care rewards appropriate prescribing of

Box 1.5. **Improving patient safety in OECD health care systems: Encouraging handwashing in Australia and the United States**

In audits of Australia's *National Hand Hygiene Initiative*, which encourages health care workers to practice hand hygiene, compliance rose from 63.5% in 182 participating hospitals in August 2009, to 83.2% in 890 participating hospitals in October 2015 (Hand Hygiene Australia, 2015). A US-based trial evaluated health workers' hand hygiene in an intensive care unit with the use of remote video auditing, with and without feedback. Cameras with views of every sink and hand sanitiser dispenser were used to record hand hygiene activity. During the 16 weeks before feedback, hand hygiene rates were less than 10.0%. In the 16 weeks after feedback, the rate rose to 81.6%. This increase was maintained 75 weeks later, at 87.9% (Armellino et al., 2012). More information can be found in Box 2.10.

benzodiazepines. These initiatives have not yet been systematically evaluated. To improve patient safety, some health care systems impose financial sanctions if adverse events occur. For example, Israel defined four "never events" for which hospitals cannot bill health insurers. Financial incentives can also be directed at patients by introducing co-payments for care that is considered low-value or by excluding it from coverage.

Organisational changes include measures such as improved use of technology and improvements to care co-ordination. Computerised physician order entry (CPOE) improves safety by overcoming issues such as poor handwriting, ambiguous abbreviations or lack of knowledge on the part of clinicians when medications or tests are prescribed (Bates et al., 1998). CPOE can be combined with guidelines or decision support tools to avoid low-value care. A systematic review found that using CPOE was associated with improved compliance with guideline advice, fewer tests, a significant reduction in the median time to appropriate treatment, and reduced cost (Georgiou et al., 2007). Many countries are working towards implementation of electronic health records (EHRs) that will contain all relevant information about each patient. Technical, legal and cultural challenges mean that many systems are years from full implementation, however. In the meantime, some countries have established more targeted information-sharing systems, focused on medications (e.g. Germany and Denmark) or specific diseases (e.g. SveDem, the Swedish dementia registry).

These policy levers can be accompanied by more forceful regulatory measures. This may include requiring provider accreditation as a tool to limit adverse events caused by organisational shortcomings, as in Australia. In the domain of low-value care, tools such as pre-authorisation for certain overused interventions were tried in Israel. More importantly, disinvestment in obsolete technologies and the mandatory use of tools such as HTA are needed to gauge the effectiveness of interventions before they are funded through public means. On another front, some countries moved from a tort-based system to compensate medical harm to a government-funded, no-fault system to discourage low-value care driven by defensive medicine.

Table 1.1 summarises the findings on wasteful clinical care. For each category, it highlights actors involved and main drivers (relatively less important ones are shown in grey). The "information" column points to information systems and data that can be used to better capture and monitor the problem. The next column provides a summary of policy options, organised around the four categories of policy levers. In the final two columns, examples of policy impact and good practice are given where possible.

Table 1.1. **Who, why and what to do? Summary of findings on wasteful clinical care**

Category of waste	Actors	Main drivers	Information systems required	Policy levers	Policy impact	Country examples
Preventable adverse events		Organisational shortcomings, suboptimal decisions, poor incentives	Adverse event reporting systems, PRIMs	**Behaviour change:** clinical guidelines, checklists, standards of practice, safety campaigns	+	**Spain:** A five-point checklist is used in intensive care units to reduce catheter-related bloodstream infections
				Organisational change: improved co-ordination and use of ICT	+	**Germany, Denmark and Sweden:** More targeted information-sharing systems focused on medications or specific diseases
		Organisational shortcomings, poor incentives		**Incentives:** financial penalties for "never events", change in tort law towards no-fault systems	+	**Israel:** The Ministry of Health defined four "never events" in which hospitals cannot bill health insurers
				Regulation: mandatory accreditation of providers	+	**Australia:** All hospitals must meet ten national standards as part of mandatory accreditation
Low-value care		Suboptimal decisions, poor incentives	Atlases of health care variation, PREMs and PROMs	**Behaviour change:** audit and feedback, guidelines (do-not-do lists), campaigns promoting dialogue between patient and clinician (Choosing Wisely®, advanced directives, decision aids)	+	**United States, Netherlands, Italy, Canada, Australia, New Zealand, United Kingdom (and others):** Choosing Wisely® campaign
		Suboptimal decisions, poor incentives		**Incentives:** bundled, performance- and value-based payments, patient co-payments for low-value interventions, disinvestment from low-value care, change in tort law towards no-fault systems	?	**England:** Maternity Pathway Payment removed the financial incentive for caesarean section **United States:** Value-based programmes link payment to quality and value **France:** Rates of reimbursements for drugs based on their effectiveness for a given indication and condition severity
		Poor incentives		**Regulation:** systematic HTA, pre-authorisation of certain procedures	+	**Israel:** Pre-authorisation centre for heart catheterisation reduced unnecessary stenting
Overprescription of antimicrobials		Suboptimal decisions, organisational shortcomings, poor incentives	Prescription monitoring systems	**Behaviour change:** guidelines, campaigns	+	**France** implemented a continuing medical education (CME) programme for communicable diseases
		Suboptimal decisions, poor incentives		**Organisational change:** rapid diagnostic tools, stewardship programmes	++	**Belgium** one of the few countries to carry out a full cost-benefit analysis of its mass media campaign
				Incentives: performance-based payments, patient co-payments	+	Stewardship programmes were widely implemented and proved to be effective in the **United States, France** and other countries

 Manager;  Clinician;  Patient.

+ Some evidence of positive impact but limited and system-dependent; **++** Positive impact; **?** Impact so far unknown.

3. Operational waste: When care could be produced using fewer or cheaper resources

In contrast to wasteful clinical care, operational waste covers instances when the care patients receive is what they need but the same (or superior) benefit could be achieved using fewer resources.

Health care requires human and capital resources such as medical professionals, pharmaceuticals and other medical supplies, technology and equipment as well as buildings. Inefficiencies arise when any one of these resources is:

- purchased at an overly high price, which can occur for instance when procurement is poorly organised
- purchased but not used and subsequently discarded (pharmaceuticals) or simply underused (fixed assets)
- used to treat patients when less expensive and equivalent alternatives exist; examples include treating patients in the hospital when equally suitable outpatient alternatives exist, prescribing originator brands instead of generics, or using highly specialised health staff to provide basic care.

In keeping with the general definition of waste, the focus is on activities that could be stopped or for which opportunities to use a cheaper alternative may be found within any given system's prevailing architecture. A review of countries' experience identified two main domains in which such operational waste can be reduced: pharmaceuticals and the use of hospital services.

3.1. A range of opportunities exist to spend less on pharmaceuticals

Across OECD countries, one out of every five health dollars is spent on purchasing pharmaceuticals (Belloni et al., 2016). This section starts with a discussion of waste that occurs when purchased pharmaceuticals (or other medical supplies) are unused and discarded. Next, the section proceeds to opportunities for substituting originator medicines with cheaper and therapeutically equivalent generics. Finally, the discussion moves to the complex issue of procurement.

Discarding unused medical supplies is more often than not unnecessary

The value of discarded medical supplies is difficult to capture but is probably underestimated since in most countries, only data on returns to authorised collection points are reported. Even less is known about the value of medical supplies discarded by hospitals. Some amount of discarding is inevitable because patients recover before the dispensed medicines have all been taken or their therapies are changed. Nevertheless, approximately 50% of the value of discarded pharmaceuticals is likely to be avoidable cost (Trueman et al., 2010).

- In Australia, a 2013 audit revealed that the annual value of medicines returned to collection points by patients is around AUD 2 million (Monash University, 2013).
- When prescription medicines discarded by patients at home are included, as is the case for National Health Service (NHS) England's estimates, the annual cost could be as high as GBP 200 million (Trueman et al., 2010).

- Among large US academic medical centres, which represent 4% of all hospitals nationwide, every year medical supplies worth at least USD 15 million are discarded despite being recoverable (Wan et al., 2015).

Patients and providers are primarily responsible for wasting medicine. For instance, excessive volumes are dispensed for repeated prescriptions that are not effectively reviewed by physicians or pharmacists. Some patients do not complete their course of medication due to lack of knowledge, doubts or confusion, with potential detrimental effects for themselves or beyond (e.g. in the case of antibiotics, this contributes to AMR). Organisational shortcomings in management of supplies and stocks might play a role at health care facilities but these are less studied.

Tackling the problem requires changing behaviours through guidelines, education initiatives and campaigns. To motivate health professionals and patients to prescribe/use medicines as cost-effectively as possible, these tools must emphasise the benefits of medication rather than waste alone (see Box 1.2 on AMR). Such a strategy involves encouraging good communication between clinicians and patients, aimed at enabling as many patients as possible to resolve medication-related concerns (Trueman et al., 2010). Trial-based evidence from England and Sweden suggests that providing face-to-face or telephone support to patients starting new treatments can cost-effectively reduce the volume of discarded medicines (Clifford et al., 2006; Schedlbauer et al., 2007). Also, e-prescription or other prescription review systems (Denmark, the United Kingdom) can improve the monitoring of dispensed medicines. Evidence on their effectiveness is less clear, however.

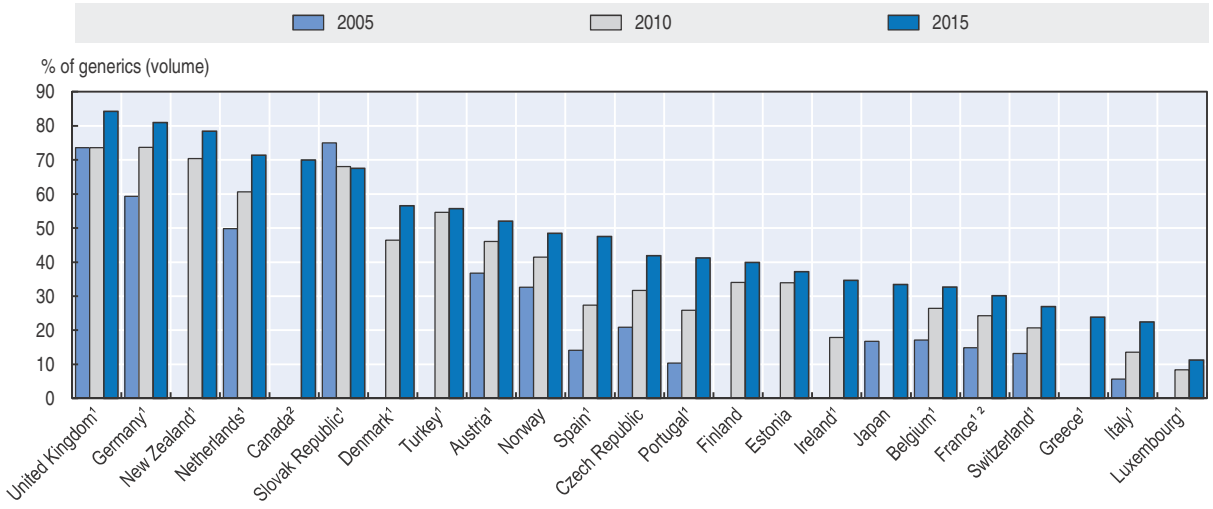
The potential for generics substitution is still underexploited

The use of generic drugs is a good opportunity to free up resources within health care systems. In the United States where the generics market is very dynamic, the price of a generic drug is on average 80-85% lower than that of the originator (IMS Institute for Healthcare Informatics, 2013). In fact, the shift to generic drugs and the so-called "patent cliff" (a large number of drugs losing patent protection) are responsible for the recent decline in overall pharmaceutical spending observed across OECD countries (Belloni et al., 2016). Yet some OECD countries do not fully exploit this potential (Figure 1.3) – the share of generics in pharmaceuticals covered by basic health benefits varies between 10% and 80%.

Efforts to increase the use of generics can be hampered by suboptimal decisions and regulatory obstacles. The former include the established practice of using the originator drug among clinicians and patients. The latter exist when physicians are not allowed or mandated to prescribe using International Non-proprietary Name (INN), which is still the case in some OECD countries (Belloni et al., 2016). Moreover, entry-level legislation might delay the launch of generics onto the market (Vogler, 2012).

Policies to promote the use of generics start with regulatory adjustments to increase opportunities for generics entry and substitution. This includes early-entry legislation, which allows generic drug producers to complete the regulatory requirements prior to the patent expiry of the originator, as well as promoting substitution for all classes of drugs where the option exists. In addition, facilitating drug prescriptions using INN can further enhance substitution of originator drugs with generics. Several OECD countries (Denmark, Finland, Spain and Sweden) implemented regulatory measures mandating pharmacists to substitute the medicine prescribed with the cheapest generic (Vogler, 2012).

Figure 1.3. **Trends in generics market shares by volume in OECD countries between 2005 and 2015 (or nearest year)**



1. Data refer only to reimbursed pharmaceutical market.
2. Most recent available data are for 2013.

Source: OECD Health Statistics (2016), *http://dx.doi.org/10.1787/health-data-en.*

StatLink http://dx.doi.org/10.1787/888933443952

These regulatory policies can be accompanied by financial incentives. For clinicians, France introduced a P4P scheme rewarding prescription of generics while Japan introduced bonuses linked to the share of generics in prescribed medicines. In most countries, patients are incentivised to choose generics through lower co-payments (Belloni et al., 2016).

Other measures targeting patients include information campaigns explaining generics' equivalence to originator drugs (Denmark, France, Portugal and Spain). In Norway, pharmacists are obliged to inform patients about the possibility of a cheaper alternative (Medicines for Europe, forthcoming; Belloni et al., 2016).

While no formal evaluation is available, policies associated with patent expiries certainly contributed to the significant increase in generics market share observed over the past decade in most countries (Figure 1.3).

In parallel with generic drug competition, health care systems could realise significant savings by opening the market to biosimilar competition. Biosimilars are generic versions of biological medicines (i.e. medicines made by or derived from a biological source, such as a bacterium or yeast). A growing number of conditions are treated with biological medicines. In particular, these innovative medicines opened a new era of precision therapies for cancer, although these are very expensive (e.g. USD 25 000-200 000 per year) (Belloni et al., 2016). Hence, the emergence of biosimilars brings the promise of more affordable therapies and relief for health care budgets. Adoption of biosimilars faces the same obstacles that had to be removed to realise the potential of generics, however (Box 1.6).

Between and within-country price variations are partially unwarranted and amenable to improved procurement

Comparing prices of pharmaceuticals, especially across countries, is not straightforward. Prices can be measured at different stages (from ex-factory to retail); and differences in prices – which are in part determined by market forces – may also reflect the

Box 1.6. **Current and future savings from the use of biosimilars**

In parallel with generic drug competition, opening the market to biosimilar competition could realise significant savings for health care systems. For example, between 2016 and 2020 eight key biologics are scheduled to lose patent protection. Analysis of data available for five European countries (France, Germany, Italy, Spain and the United Kingdom) and the United States suggests that a 20% reduction in price per treatment-day across these eight products could result in cumulative savings exceeding EUR 50 billion in aggregate by the end of 2020 (IMS Institute for Healthcare Informatics, 2016). In 2015, following the introduction of biosimilar competition in one of the most often used classes of biologics – erythropoietins (EPOs) – the observed price reduction (across the class, i.e. for originators as well as biosimilars) varied from 39% in France to 55% in Germany (IMS Institute for Healthcare Informatics, 2016).

Regulation of market entry for biosimilars varies significantly between countries. The European Union approved the first biosimilar in 2006 and is the leader in the number of approved products: 20 as of June 2016. Yet biosimilars' use shows wide variation in the EU. Even the first biosimilar still has little or no uptake in some countries (e.g. Greece, Ireland and the Slovak Republic), while in Poland it is used in almost all relevant therapies (Ekman and Vulto, 2016). The United States adopted the legislative framework for licensing biosimilars in 2010, but the first biosimilar was approved only in March 2015 (Belloni et al., 2016).

Some policies discussed in this chapter to increase uptake of generics can also be applied to biosimilars. For example, physicians and patients often worry that biosimilars will compromise quality of treatment (IMS Institute for Healthcare Informatics, 2016). Thus regulators should communicate their knowledge more actively and, most importantly, strive to take clear positions on interchangeability between biologics and biosimilars. In Norway and Denmark, where physicians are at the heart of decision making, uptake of biosimilars was rapid and sustained. Similarly, biosimilar competition is strong in Germany, where insurance funds invested in communication with physicians on the subject and subsequently introduced prescribing quotas for biosimilars (IMS Institute for Healthcare Informatics, 2016). A number of countries took a clear position on allowing a switch to biosimilars in the course of treatment, including Denmark, Finland, France, Germany and Norway (Ekman and Vulto, 2016).

different values countries attach to health outcomes in relation to their income. Further, official and actual prices may differ, as manufacturers can provide discounts to countries subject to non-disclosure agreement. In sum, not all price differences are measurable or unwarranted. Yet large variations within a country and between similar countries can be a sign of inefficient procurement:

- Prices of the same hospital pharmaceutical differ by up to 23% between geographical areas in Italy (Baldi and Vannoni, 2015).
- The price paid for a simple patient identification wristband by different NHS England trusts varies more than two-fold (NHS, 2014).
- Studies in the past decade show that Denmark, Germany, Sweden, Switzerland and the United States tend to be high-priced countries for originator drugs, whereas prices for originator drugs in Greece, Mexico, Portugal, Spain and, more recently, the United Kingdom rank at the lower end. For example, for a number of cancer drugs, differences in ex-factory prices between the highest- and lowest-priced country vary between 28-388% (Vogler et al., 2016).

Relatively high prices can reflect passive procurement practices that do not fully exploit the potential for building market power through bulk purchasing. This occurs either because small insurers or providers contract separately for limited volumes of medicines or large buyers do not actively use their market power. The latter means that buyers, for example, do not engage in negotiations with suppliers and/or cover all products within a therapeutic class equally (often not distinguishing between more and less cost-effective medicines). In consequence, none of the suppliers has prospects for selling relatively higher volumes. In other words, buyers simply do not induce competition between suppliers of similar products.

Indeed, in many OECD countries, individual health care providers, notably hospitals, or local government units carry out procurement separately. This not only precludes volume-related discounts but also creates unnecessary task repetition by each buyer. Individual buyers have limited leverage to negotiate more innovative contracts or, in the case of tenders, to develop more advanced product specifications and auction designs that support moving from predominantly price-based towards value-based procurement. In other countries, large regional or national insurers are not permitted to actively negotiate with suppliers or cannot choose a preferred supplier among products within the same therapeutic class (this is the case for Medicare and Medicaid in the United States) (Kesselheim et al., 2016).

With the aim of improving procurement, several OECD countries (e.g. Denmark, Greece, Italy, Mexico, New Zealand and Norway) adopted various forms of collaborative procurement and report considerably reduced prices (Box 1.7). Collaborative procurement (consortia buying, group purchasing, etc.) increases buyers' market power and supports lower prices, understood not only as price per item but also as better value for money. Moreover, collaborations support the development of buying strategies tailored to a situation in a specific market segment. The various legal frameworks and organisational structures of health care systems led to development of a wide range of collaborative procurement forms. These forms range from national and regional government-led agencies or private consortia, which legally bind collaborating members, to public or private hybrid collaborations that are voluntary. The most recent examples include three government agencies established at national level:

- A central procurement agency created in Mexico saved around USD 2.8 billion between 2007 and 2010 compared to the budget planned based on the performance of the former decentralised system (OECD, 2013).
- Italy's central purchasing agency (46 employees) paid on average 20-23% lower prices than the remaining decentralised buyers between 2009 and 2012 (Baldi and Vannoni, 2015).
- Greece's centralisation of procurement in one agency (26 employees) created savings of EUR 180 million compared to the expected budget for 2011 (Kastanioti et al., 2013).

Transparent information sharing is another powerful tool to promote better procurement. Countries should try to systematically capture and publish data on within-country price variations, as is done in Australia and England. Consideration could also be given to sharing price information internationally. At the very least, the question should be asked whether any "private" discount a country receives is actually meaningful in light of the actual price other countries may pay.

Box 1.7. **Collaborative procurement's benefits: Reduced prices, improved stock management and expertise**

Mexico – Until 2007, the procurement function of the Mexican Institute of Social Security (IMSS) was embedded in 60 separate entities. The IMSS's centralisation efforts, undertaken gradually since 2007, resulted in price reductions of pharmaceuticals and other medical supplies, improved stock management and creation of a centre of excellence in procurement that currently serves all public health care stakeholders. This resulted in cumulative savings of USD 2.8 billion between 2007 and 2010 (OECD, 2013).

Greece – In 2010, government undertook efforts to unify the annual tenders for pharmaceuticals and medical devices carried by public hospitals. In the first year of operations, the centralised agency – the Health Procurement Committee (EPY) – consisting of only 26 employees, achieved 10% overall price reduction for pharmaceuticals and 20% price reduction for selected medical devices. Additionally, payment times were significantly shortened (previously exceeding three years on average) and stock management improved, allowing for transfer of redundant stocks between hospitals (Kastanioti et al., 2013).

New Zealand – Since 1993, PHARMAC, a New Zealand government agency, has been the sole purchaser of publicly funded pharmaceuticals. According to PHARMAC estimates, based on pharmaceutical prices in 2005 mapped onto actual prescribing activity, joint procurement allowed for cumulative savings of about NZD 5.1 billion between 2005 and 2015, including about NZD 1.9 billion in 2014/15 (PHARMAC, 2015).

Denmark and **Norway** – For more than two decades, both countries have operated single procurement agencies for hospital pharmaceuticals (including pharmaceuticals for home therapies) and report significant annual savings, ranging from 30% to over 60% compared to list prices or average wholesale prices in a group of neighbouring countries. Notably, these mature collaborative procurement agencies are based on voluntary participation; i.e. they do not have any legal tools to influence member hospitals' decision making. Their success appears to be linked to the fact that clinicians remain at the heart of decision making. In consequence, these collaborative procurement agencies became leaders in strategic selection of preferred suppliers (within a class of therapeutic products), which not only induces competition but also facilitates rapid and large-scale adoption of generics and biosimilars.

3.2. Use of resource-intensive hospital care can be better targeted

Hospitals should focus on their mission to provide highly technical services in the most efficient way. Yet various opportunities exist to reduce instances when patients could be treated equally well without draining such expensive resources. In particular, effective treatment at the primary care level could replace a substantial share of the workload in emergency departments (EDs) and prevent hospitalisations for chronic conditions. Furthermore, an increasing number of minor surgeries can be performed on a same-day instead of an inpatient basis. Indications also suggest that some patients are discharged from hospitals with an unnecessary delay.

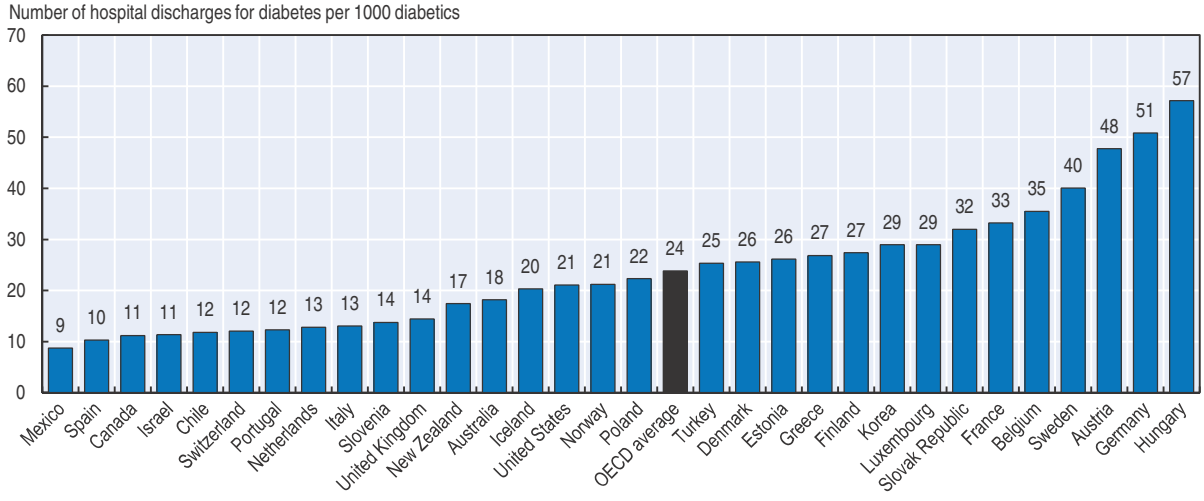
Emergency department visits, hospital admissions and length of hospital stay can be reduced

A substantial portion of ED visits are inappropriate. Similarly, OECD data reveal large cross-country variations in hospital admissions for chronic conditions such as diabetes, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and asthma.

For these diseases, early and appropriate primary care treatment has been proven to prevent hospital admissions (Longman et al., 2015), indicating the potential to reduce the use of hospital care. Finally, advances in medical technologies make it possible for an increasing number of surgical procedures to be performed on a same-day basis for most patients, reducing the need for inpatient stays (Fischer and Zechmeister-Koss, 2014):

- Inappropriate ED visits account for nearly 12% of ED visits in the United States and England, 20% in Italy and France, 25% in Canada, around 30% in Portugal and Australia, and 56% in Belgium (Berchet, 2015).[7]
- In England the cost of inappropriate ED visits was estimated at nearly GBP 100 million between 2011 and 2012 (McHale et al., 2013), and in the United States at around USD 38 billion yearly (NEHI, 2010).
- A nearly six-fold cross-country variation exists in rates of hospital discharges per 1 000 patients with diabetes (Figure 1.4) (OECD, 2015b).
- Large cross-country variations exist in the share of minor surgeries delivered on a same-day basis. For example, on average 83% of cataract surgeries are provided on a same-day basis but the rates vary from 27% to 100% between countries (OECD, 2015c).

Figure 1.4. **Diabetes-related admissions per 1 000 patients with diabetes, 2011 (or nearest year)**

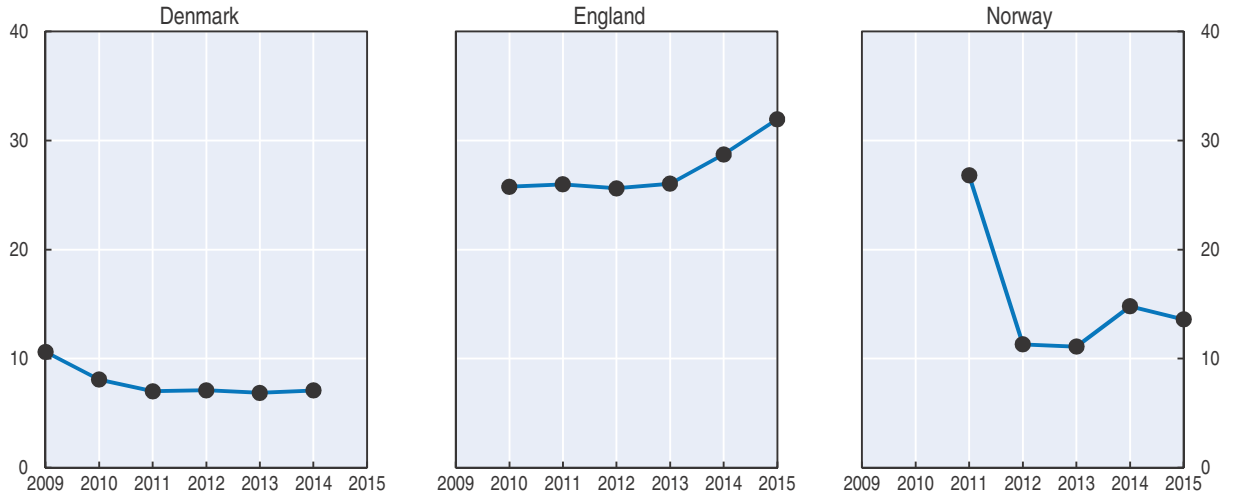


Note: The OECD average includes 31 countries.
Source: OECD (2015), "Improved Control of Cardiovascular Disease Risk Factors and Diabetes: The Central Role of Primary Care", *Cardiovascular Disease and Diabetes: Policies for Better Health and Quality of Care*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264233010-7-en*.

StatLink http://dx.doi.org/10.1787/888933443962

Even when inpatient hospital admission is necessary, poor care co-ordination creates situations when patients who are ready to leave hospital cannot do so because ongoing care has not yet been arranged. Some countries (e.g. Canada, Denmark, Norway, Sweden and the United Kingdom) collect data on situations when a patient remains in hospital after a doctor declares him ready to be discharged (Figure 1.5). Additional time spent in hospital is, according to the doctor's opinion, not beneficial for the patient – and may even be harmful if he could be treated more effectively in another setting – yet it has a significant cost. While data may not be strictly comparable, significant variation arises in the scope of delays in hospital discharges: Denmark reported around 10 additional bed days per 1 000 population

Figure 1.5. **Delays in transferring patients from hospitals in three OECD countries (total number of days per year per 1 000 population), 2009 to 2015**



Source: OECD analysis of data from NHS England, the Norwegian Directorate of Health and the Danish Ministry of Health. Please note that data from different countries may not be comparable.

StatLink http://dx.doi.org/10.1787/888933443975

in 2014 and England more than 30. Some countries have seen notable changes over time: Norway saw a significant drop in 2012, which coincided with introduction of reforms to improve care co-ordination, while England has seen an increase in delays since 2013, largely caused by people waiting for social care services to be arranged.

Drivers of hospital overuse are varied and complex

The complex and interlinked drivers of unwarranted use of hospital care include behavioural factors of clinicians and patients, financial incentives misaligned with system objectives, and shortcomings in organisation and co-ordination. The latter cover two sets of issues: i) a lack of alternatives to hospital care (such as primary care or community care); and ii) failures in co-ordination of care between hospitals and other settings.

Lack of access to alternative options, in particular primary and community care, is a key driver of unnecessary hospital use. A significant proportion of patients face barriers in access to primary care either because of a lack of out-of-hours (OOH) services or because of long waiting times (Berchet and Nader, 2016). Others stay in hospital for longer than necessary due to lack of community care. Even when alternative services exist, poor communication and co-ordination between hospitals and other care settings can unnecessarily extend hospital stay. One reason for this may be a misalignment of financial incentives between providers (often mirrored by misalignment of funding sources). For instance, typically, if the ongoing care provider (financed by the social care system) causes the delay, the cost is borne by the hospital (financed by the health authority).

Inappropriate ED visits and avoidable hospital admissions also relate to the quality of services delivered within primary care settings. Primary care provider variation from evidence-based care guidelines is associated with increased patient complication rates and inpatient admissions at hospitals. The evidence is particularly marked for chronic conditions where suboptimal monitoring is shown to be a cause of preventable hospitalisations (Freund et al., 2013).

Co-payments for outpatient care create incentives for patients to seek free care in EDs, as in Greece and Portugal (Eurofound, 2014). Poverty, minority status, low educational attainment and lack of social support are additional factors positively associated with excess hospital admissions and ED visits (Nishino et al., 2015). Patient preferences for seeking emergency care have also traditionally been high because a full range of medical services is accessible 24 hours a day, 7 days a week (Durand et al., 2012).

Policy levers can reduce hospital overuse

Policy options aiming to change how patients move around the system range from simple, incremental changes – such as putting a stop to wasteful activities – to transformative policies around system redesign and disease management. The discussion here purposely focuses on the first group of policies.

A first category of policies consists of availing the less costly option, including primary care, community care services or intermediate care facilities, in the right place at the right time (Box 1.8).

Box 1.8. **Making alternatives to hospital care more widely available**

Many people in OECD countries are admitted to hospital for care that could be delivered just as effectively in other settings, and at a lower cost. Often this is because the other care settings do not exist or are not accessible when needed. OECD countries are trying to address this by: i) increasing the availability of existing primary and community care, and ii) introducing new models of care that can serve as an alternative to hospitals:

- Some people end up in hospital simply because their primary care provider is closed at certain times of the day. *Out-of-hours (OOH) primary care* aims to address this gap. In the Netherlands, large-scale organisations of OOH primary care, such as general practice co-operatives, effectively improved timely access to appropriate primary care services while increasing patient and physician satisfaction (Giesen et al., 2011).
- *Locating primary care services within hospitals* can redirect non-urgent patients to primary care settings and speed up their discharge. Fast-track systems in **France**, the United Kingdom, the United States and **Canada** reduced inappropriate use of cost-intensive EDs by treating non-urgent patients in a dedicated area staffed by professionals with the competencies to make discharge decisions (Cour des Comptes, 2014; Rogers et al., 2004). In the Netherlands and **Switzerland**, primary care practitioners are placed within EDs to assess and redirect non-urgent patients. This cost-effectively lowered the use of emergency services (Thijssen et al., 2013, Wang et al., 2013).
- *Different types of care settings* can offer alternatives to hospital care. Community care centres in **Australia, Ireland, Italy** and the United States led to a reduction in ED visits and hospitalisations (Bruni et al., 2013). Intermediate care services provide short-term care for patients who are at risk of hospitalisation, or who have just been discharged. Evidence from **Norway** suggests that these services can benefit patients and save money (Garåsen et al., 2007), but experiences in **England** and the Netherlands highlight the importance of ensuring that these new models of care are well-integrated with the existing system (Mur-Veeman and Govers, 2011, Plochg et al., 2005). The "hospital at home" model is an interesting initiative to offer patients the option of receiving hospital-level care at home for conditions that can be safely treated there. Evidence from the United States shows that providing hospital at home is not only cheaper but also leads to improved health outcomes, reduced mortality rates and increased satisfaction rates (Klein et al., 2016).

Reductions in operational waste can be achieved by improving the efficiency of internal processes within hospitals. In this respect, health providers have begun to learn from other sectors. "Lean Management" was first developed to improve the efficiency of car factories, but applying its techniques in health care – for example, by clearly defining standard procedures or implementing more efficient stock replenishment systems – has led to higher productivity and less waste (Mazzocato et al., 2010; D'Andreamatteo et al., 2015).

A shift in financial incentives can support development or choice of less resource-intensive care. In Japan, additional fees are provided to hospital EDs to encourage patient discharge to primary care clinics (Japanese Ministry of Health, Labour and Welfare 2014). Hungary reduced payments for inpatient admissions for minor surgeries to incentivise greater uptake of same-day surgery. On the demand side, removing co-payments at the point of care for outpatient primary care visits improves patients' access (as seen in Canada, Denmark, Germany, Italy, Poland, Spain and the United Kingdom) (Berchet, 2015).

Financial incentives are used in some countries to target specific failures of co-ordination at the interface between hospital care and other services. In Norway, Denmark and England financial sanctions apply to local authorities in case of delays in discharging patients from hospital. In Norway, this approach significantly reduced delayed discharges after 2011 (Figure 1.5).

Soft tools are important to increase the quality of primary care and convince patients to change their care-seeking habits. Evidence-based clinical practice guidelines support clinical decisions and reduce unwarranted variation in care, particularly for chronic conditions. Improved adherence to clinical practice guidelines for asthma, COPD and diabetes by primary care providers is associated with fewer hospital admissions (AHRQ, 2001). For example, targeted incentives on compliance with clinical practice guidelines had favourable effects on diabetes outcomes in the United Kingdom (Latham and Marshall, 2015). Education programmes and counselling can help patients develop a better understanding of their own health conditions, and the appropriate place to seek care.

Table 1.2 summarises the policy options to reduce operational waste.

4. Governance-related waste

4.1. Spending on administration is unavoidable but needs to be well targeted

Spending on administration is often seen as one of the first areas from which to cut waste. Administrative costs are incurred at the regulatory (macro) level, as well as all levels of administration and management, including by individual health care staff at the provider (micro) level. Administrative waste occurs when administrative tasks do not add any value, are unnecessarily repeated, or are performed in a way that is more expensive than required (for instance, reporting obligations that do not translate into actual monitoring, duplication of competencies across agencies, or physicians taking on administrative tasks that could be done by non-medical staff). In other words, administrative waste comprises activities that can be either eliminated or executed using fewer and/or less expensive inputs. At the health provider level, one element of the latter is waste in human resources through suboptimal organisational management and staff absenteeism; this combines elements of administrative and operational waste and is an issue for all industries including the health sector.

Table 1.2. **Who, why and what to do? Summary of findings on operational waste**

Category of waste	Actors	Main driver	Information systems required	Policy levers	Policy impact	Good practice examples
Discarded pharmaceuticals and other medical supplies		Suboptimal decisions	Monitoring of patient adherence to medication Monitoring of prescriptions Monitoring of stocks in health care facilities	**Behaviour change:** guidelines, training and campaigns	+	**England:** Pharmacists provide face-to-face or telephone support to patients starting new treatments
		Organisational shortcomings		**Organisational change:** e-prescription systems, improved management of stocks in health care facilities	?	**Denmark, United Kingdom:** Physicians receive periodical reviews of prescriptions
		Organisational shortcomings				
		Inadequate regulation				
Expensive originator drugs used instead of generics		Inadequate regulation	Monitoring of prescriptions and the use of generics	**Regulation:** prescription by INN, early-entry legislation, mandatory substitution of a prescribed medicine with the cheapest generic	?	**Denmark, Finland, Spain, Sweden:** Mandatory generics substitution by pharmacists
		Inadequate regulation, poor incentives		**Incentives:** P4P, patient co-payments, internal reference pricing	?	**France, Japan:** P4P for prescribers based on share of generics in prescribed medicines
		Suboptimal decisions, poor incentives		**Behaviour change:** guidelines, campaigns	?	**Denmark, France, Portugal, Spain:** Information campaigns on generics for patients
Overly high prices paid for pharmaceuticals		Organisational shortcomings, inadequate regulations	Atlases of price variations Price disclosure programmes Market intelligence	**Organisational change:** collaborative purchasing, advanced contracts and auction designs, user friendly e-procurement platforms, analysis of price variations	++	**Greece, Mexico:** Central procurement agency replaced decentralised system
		Organisational shortcomings				**Denmark, Norway:** Pooled procurement through voluntary collaboration of purchasers
High-cost hospital care used where less expensive alternatives exist		Organisational shortcomings, poor incentives	Monitoring of inappropriate and avoidable hospital admissions Monitoring of variations in primary care practice	**Organisational change:** development of OOH primary care, community and intermediate care services, improved co-ordination of services, better hospital discharge management	++	**Norway:** Larger primary care centres (intermediate care facilities) with 24-hour, 7-day a week access
		Suboptimal decisions		**Incentives:** bundled and performance-based payments, payments encouraging same-day surgery, co-payments (removing outpatient co-payments, charging for unnecessary use of emergency)	++	**United States:** Stronger community care centres
		Poor incentives, suboptimal decisions				**France, United Kingdom, United States, Canada:** Fast-track systems for emergency services
		Inadequate regulation		**Behaviour change:** guidelines, patients' education and campaigns	++	**Hungary:** Removed budget caps for same-day surgery

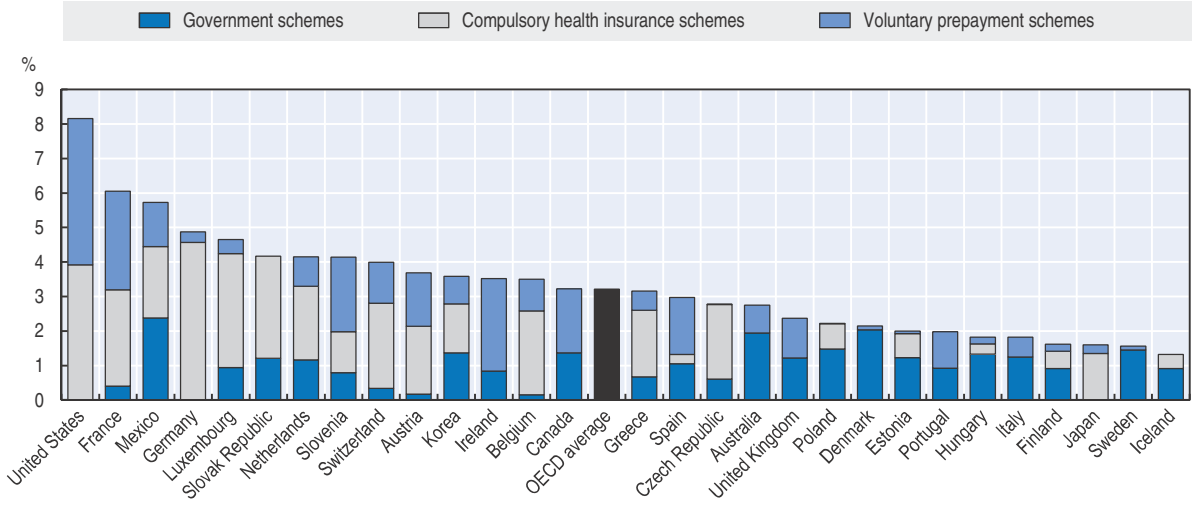
 Regulator;  Manager;  Clinician;  Patient.

+ Some evidence of positive impact but limited and system-dependent; **++** Positive impact; **?** Impact so far unknown.

Administration represents a modest share of total expenditure but opportunities to increase efficiency exist

Administrative expenditure includes the resources that go into administration of the financing, governance and service delivery of a health care system. At the system level, spending on administration comprises a modest share of overall health spending: OECD countries spent an average of 3% of total health spending on administration in 2014. The share was double that level in France and even higher in the United States. On the other hand, a number of countries report administrative expenditures at less than half of that level (Figure 1.6) (OECD, 2016).

Figure 1.6. **Administration as a share of current health expenditure by financing scheme, 2014 (or nearest year)**



Note: Compulsory health insurance schemes predominantly refer to social health insurance funds but can also refer to compulsory health insurance provided by private insurers. Voluntary prepayment schemes mainly refer to voluntary health insurance schemes. The OECD average includes 30 countries.
Source: OECD Health Statistics (2016), *http://dx.doi.org/10.1787/health-data-en.*

StatLink http://dx.doi.org/10.1787/888933443984

The level of administrative expenditure depends, to some extent, on the nature of a country's health financing schemes. Figure 1.6 suggests that systems organised around social health insurance (SHI) funds or some kind of compulsory insurance might generate higher administrative expenditure than those in which the general government manages coverage. Further mapping of the data to organisational features shows instead that single-payer systems (whether the payer is a social security fund or a government entity) tend to have comparable levels of administrative spending, lower than those of multiple-payer systems, especially when payers compete and consumers can choose their source of coverage (Mossialos et al., 2002). Moreover, private insurance generates a relatively high share of total administrative expenditure, especially in light of its limited role in pooling in most countries. The possibility for insurers to generate profit from their operations can also explain some of the observed variation. Variations across financing schemes can be partly explained by the differences in resources that schemes devote to specific administrative functions, such as collection and pooling of funds or marketing.

Differences in administrative expenditure at the level of individual health care providers, such as hospitals and individual clinicians, are less studied. Of those nations where data allow for a comparison of administrative costs in health care organisations, Scotland reported the lowest share, at 11.6% of total hospital costs, whereas this figure was more than double in the United States (Himmelstein et al., 2014). Demarcating costs related purely to administration in health care facilities is challenging, though, because many functions have both an administrative and a clinical purpose. Administrative costs of health providers also vary within countries. For instance, a recent report analysing variations in productivity and performance in NHS England finds that costs for corporate and administrative staff vary between 6-11% of total income among NHS England trusts (Department of Health, 2016). Regarding individual clinicians, observational studies conducted across settings in different countries found that physicians' time spent on "documentation" ranges from 8% to as much as 27% (Ammenwerth and Spötl, 2009; Mache et al., 2011; Arabadzhiyska et al., 2013; Westbrook et al., 2008). In that context, waste occurs when relatively simple administrative activities are carried out by highly qualified clinicians whose time could be better used to treat patients.[8] Extending the notion of "administrative waste" to include missed managerial opportunities to optimise the use of human resources raises the question of staff absenteeism, which can be an issue of concern. For instance, across NHS trusts in England the average level of sickness absence is around 4%, higher than both the public (2.9%) and private (1.8%) sector averages. Reducing the sickness absence rates in NHS England trusts by 1% could save GBP 280 million in staff costs (Department of Health, 2016).

Administrative expenditures are often seen as the first target areas when implementing austerity measures. The common view is that excessive bureaucracy and "red tape" are burdensome (Morra et al., 2011; Cutler et al., 2012). Comparing how countries differ in the way they administer their health care system can serve well in identifying policy pointers. But simple international comparisons of the level of spending on administration can be misleading, since such comparisons reflect differences in governance and financing structures of health care, and only illustrate the costs, not the potential benefits of administrative expenditures.

It needs to be stressed that administration *per se* should not be seen as "bad". Paying for performance, for instance, can be expected to generate a higher administrative burden for providers and payers as it typically involves the reporting and analysis of additional data for a substantial number of indicators of health care quality (OECD and WHO, 2014). In the same manner, HTA generates costs but promotes more informed decisions on coverage of new and current services. Likewise, elaborate follow-up of clinical recommendation adherence by inspectorates is not free of cost but might improve clinical practice. What is important is to balance out the costs of administrative activities against their potential benefits, which are difficult to measure.

Despite the complexities in establishing the magnitude of administrative waste, its drivers are relatively straightforward to conceptualise. Administrative waste can be caused by the usual organisational deficiencies and incongruous regulation, which lead to efforts being spent on tasks that bring no added value or to duplication of activities. Additionally, poor co-ordination of administrative tasks between different actors within or between organisations leads to waste in a manner similar to the way that poor co-ordination between different health care providers underpins operational waste.

System-specific investigations are required to identify possible administrative efficiency gains

At all levels of the health care system, strategies to reduce administrative waste are centred on organisational changes identified through detailed investigations of administrative activities. In particular, comprehensive functional analyses of organisations or in-depth stocktaking of the administrative burden of health providers are promising approaches to identify areas where action is required to cut wasteful spending:

- Australia commissioned a functional and efficiency review of the Commonwealth Department of Health. Efficiency gains of around AUD 106 million were found in operations, partly by removing duplication of administrative activities.
- In Germany and the Netherlands, different bottom-up approaches involving all major stakeholders including providers were taken to measure administrative spending and identify potential wasteful activities. In Germany, the review identified EUR 4.3 billion of administrative costs related to documentation and reporting and recommended 20 measures to improve administrative efficiency (Statistisches Bundesamt, 2015).

The key recommendations with regard to organisational changes emerging from these reviews are typically country- and system-specific and range from small adjustments to re-organisation of regulatory functions. They can be broadly clustered into the following categories:

- making better use of information and communications technology (ICT) in communication between payer and provider
- simplifying administrative procedures
- finding the right size of administrative bodies.

ICT solutions can reduce paperwork, particularly in the interaction between payers and providers. Upfront development costs can be high but efficiency gains are expected in the long run. Measures of this kind were taken in a number of countries, including Belgium, France, Norway, Slovenia, Switzerland and Estonia (see Box 1.9). This can refer to electronic reporting of performance measures, implementation of e-prescription and/or e-referrals, development of electronic patient records, or more generally, use of a digital platform to exchange information between providers and payers. In many cases, higher-quality data and improved patient safety are secondary aims of the increased use of ICT at the provider level. Regulatory processes too can be simplified with the help of ICT. In Israel, for example, the move towards digitalised procedures for medical graduates to receive their medical licenses and to apply for compulsory clinical internships sped up these processes considerably. It also led to a better matching of hospitals and interns, who are now more likely to work in the hospital of their choice. Other simplification measures may include the streamlining of forms used by physicians for billing purposes or prescription forms.

Recommendations to improve administrative efficiency can include a merger or a separation of administrative institutions. Whether agencies are merged or separated depends on the country-specific context but countries are trying to find the most appropriate organisational size to achieve efficiency gains.

Box 1.9. **E-prescription in Estonia**

Estonia embarked on a comprehensive e-health strategy, with e-prescription as one element to improve efficiency. E-prescription was launched in 2010 and is integrated in a platform that also incorporates electronic health records (EHRs), a digital image archive, a patient portal, an e-laboratory and e-emergency care solutions.

All e-prescriptions issued by physicians are sent to a national database that can be accessed by pharmacies, other physicians and the health insurance fund. Patients can pick up their medication at any pharmacy by identifying themselves with their ID card. Repeat prescriptions can be issued by physicians after an email or a phone call, no longer requiring physical visits to the doctor. Digitalisation reduced the administrative workload of pharmacists; the health insurance fund gained better information about the pharmaceutical market and can now monitor prescription habits more effectively. It also improved efficiency for the Estonian health insurance fund: staff costs related to administering incorrect prescriptions reduced by more than 90% between 2009 and 2015. The database can provide an overview of all prescriptions issued for a patient and help signal possible interactions between different pharmaceuticals. By May 2011, 84% of all prescriptions were issued digitally and over 95% of pharmacies were ready to process e-prescriptions. Over 90% of patients are satisfied with these services.

Source: Estonian Health Insurance Fund (2016), *www.haigekassa.ee/en/digital-prescription*.

Many countries try to improve administrative efficiency through a variety of regulatory levers. Levers vary a lot in scope and range from measures that increase transparency to budget ceilings set for administrative spending:

- Germany and the Netherlands introduced a legal requirement to estimate any additional administrative burden associated with each new piece of legislation discussed in parliament.
- Ceilings/efficiency targets were defined to strengthen governance of health expenditures in Denmark and France (for the main public insurer, CNAMTS).
- The Swiss Office of Public Health (FOPH), the oversight body for statutory health insurance, surveys the financial records of health insurance companies and can require insurers to reduce their administrative costs below a defined limit if they are deemed excessive.
- In the United States, the Affordable Care Act (ACA) stipulates a Medical-Loss-Ratio requiring insurers to spend at least 80-85% of premiums on medical claims. After its introduction in 2011, the share of non-medical overhead costs in net premiums decreased, resulting in accumulated savings of USD 3.7 billion by 2013. The extent to which these savings can be attributed to the new regulation remains unknown (McCue and Hall, 2015).

Finally, depending on their managerial autonomy, health care providers may themselves engage in reducing administrative costs without involvement of payers or the regulator. Like other industries, providers can strive for leaner management structures and more flexibility in staff sizes or better organisation of hospital management to cut administrative costs. Relying on e-solutions to optimise hospital staff can save money by limiting the use of additional temporary staff. To address costly staff absenteeism, a recent report in England made a number of recommendations both at the national and regional level, mainly centred on improvements in staff health and well-being (NHS Employers, 2014).

4.2. Wasting with intention: Fraud, abuse, corruption and other integrity violations in health

The final category of waste reviewed in the report essentially comprises resources illegitimately and deliberately diverted from health care to serve the self-interest of a few. From this report's perspective, it is easy to conceptualise these behaviours as wasteful. Depending on the system and culture, the behaviours range from morally reprehensible, to legally sanctionable, to part of the normal way of doing business; they may be small or large, rare or systemic. Terms to designate these behaviours include fraud, abuse, corruption, patronage and bribery depending on the specific circumstances. To avoid semantic debates, the report coins them "integrity violations", an umbrella term for various types of dishonest behaviours that divert resources from their intended purpose. People or entities engaging in these behaviours may commit them in their own self-interest or in the interest of the business or even the industry they work for. Finally, any of the key stakeholders listed in the waste framework can be involved (Figure 1.1). In addition though, integrity violations may involve any business operating in the health sector that produces or distributes goods and services, both specific to the sector (e.g. pharmaceuticals or medical equipment) and not (e.g. construction, software, insurance services, etc.).

Building on Savedoff (2006), who linked transactions that can be corrupt to various stakeholders in the sector, a comprehensive mapping exercise of integrity violations in health care systems suggests that they take place in the context of: i) service delivery and financing; ii) procurement and distribution; or iii) the pursuit of general business objectives. Integrity violations in service delivery and financing mainly involve patients, payers and providers. Problems in procurement and distribution involve suppliers or manufacturers at the expense of payers or providers and may even, in the case of counterfeit medicine, originate from criminal organisations and pose a threat to health in addition to being wasteful. The last category of integrity violations can involve any "business" operating in the health sector, including those delivering services or developing, producing or selling medicines. All of these operators have legitimate business objectives that some may, in practice, seek to achieve in unethical and ultimately wasteful ways. Table 1.3 provides some examples for each of these three categories.

How corrupt is the health sector?

A number of theoretical considerations suggest why the health sector might be particularly prone to integrity violations (European Commission, 2013). In particular, and perhaps more than other sectors, health is characterised by a multiplicity of stakeholders with complex interrelationships, a high degree of uncertainty, and a vast range of transactions that are often based on delegation of responsibilities between actors with diverging interest who have access to different information and knowledge. To give a few examples, health care providers have specialised knowledge to decide on the treatment of any given patient; patients may not share all the information about their health; and industries have information about the cost of development of a new pharmaceutical product and its potential benefit. The combination of these characteristics makes it difficult to standardise services, monitor behaviours and ensure transparency in the health care system. Consequently, integrity violations can occur.

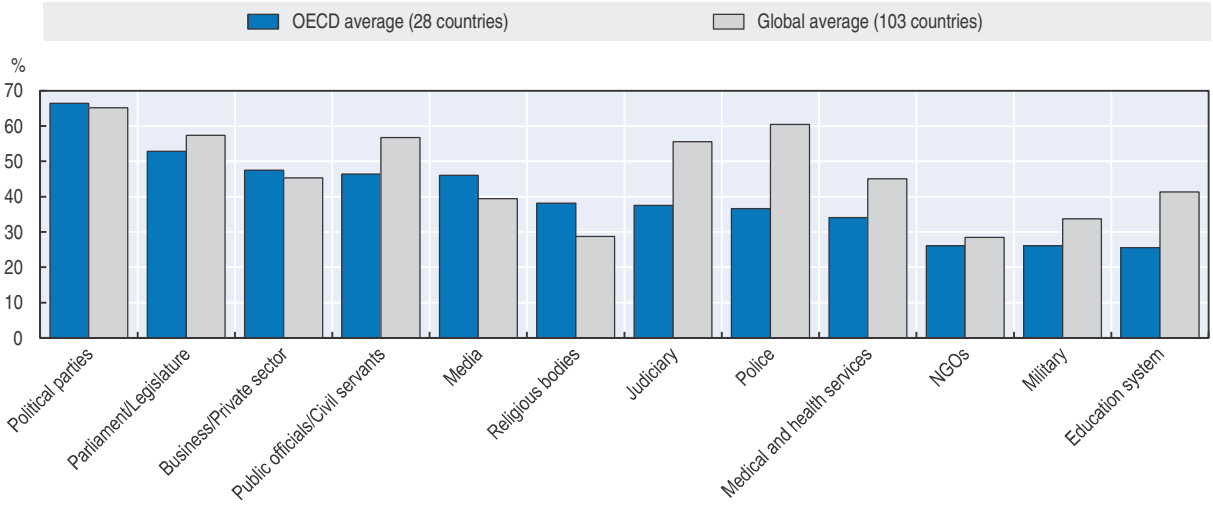
Integrity violations in health, as in any sector of the economy, are notoriously difficult to measure and compare across systems. A first reason is the lack of a uniform understanding of what constitutes fraud, abuse and corruption. More importantly, since most activities are

Table 1.3. **Examples of integrity violations in health linked to potential perpetrators**

Service delivery and financing	
Patients	Fraud to obtain unjustified coverage; wrongful claims; bribery
Payers	Unjustified denial of coverage, benefits or payments; misuse of resources
Providers	Informal payments; overprovision; overbilling; phantom care; misuse of resources; absenteeism/payroll fraud
Procurement and distribution	
Suppliers/manufacturers	Inappropriate influencing of procurement processes; wrongful bidding; collusion
Suppliers	Counterfeiting; falsified or substandard medical products
Inappropriate business practices (in relation to legitimate business objectives)	
Businesses operating in the sector seeking to influence payer, regulator, prescriber or patient: • directly • through other institutions (patients' associations, research institutions, scientific journals, medical societies, opinion leaders)	Inappropriate promotion of a business-friendly regulatory environment: Revolving door; political corruption; financing of political campaigns, parties or candidates to influence legislation Inappropriate influence to gain market entry: Provision of erroneous information (diploma/characteristics of facility); distortion of evidence on safety, efficacy or effectiveness (clinical trial methodology, selective publication of results); exertion of direct influence on decision-making authorities (inspectorates, advisory committees, etc.) Inappropriate methods to increase demand for products or services: Medicalisation of new health problems; inappropriate detailing, kickbacks, self-referrals

reprehensible and some at least can be sanctioned, they naturally tend to be covert. Surveys capturing perceptions of corruption are among the only tools available to gauge the scale of integrity violations in health. Transparency International (2013) provides a recent cross-country comparison of the perceived level of corruption across a range of sectors, including health. Figure 1.7 shows that although in OECD countries the health sector is ranked in the bottom third of corrupt institutions, a third of citizens nevertheless deem the sector as corrupt or extremely corrupt (versus 45% globally).

Figure 1.7. **Percentage of global and OECD countries' population that considers various sectors corrupt or extremely corrupt**



Source: Transparency International (2013), "Global Corruption Barometer", *www.transparency.org/gcb2013/report*.

StatLink http://dx.doi.org/10.1787/888933443997

When it comes to levels of spending wasted on integrity violations, published numbers tend to be quite low, if only because while detecting anomalies might be fairly simple, establishing intent is often a lengthy legal process. To give a couple of examples, the French CNAMTS recovered EUR 200 million lost in health care fraud in 2014, representing 0.1% of health insurance benefits. The US Centers for Medicare & Medicaid Services (CMS) recovered USD 2.3 billion in restitution and recoupment for fraud in 2014 (HHS and DOJ, 2015), corresponding to 0.2% of the total amount of expenditures on these programmes. But these numbers refer to detected and proven integrity violations, which are difficult to separate out from simple errors. A yearly publication purportedly reporting data from methodologically sound measurement exercises subjected to external validation from seven OECD countries estimates that the loss from fraud and error combined is an average 6% of related health expenditure, with most estimates ranging between 3% and 8% (Gee and Button, 2015). As countries are only able to recoup much lower percentages, there are reasons to improve measures that aim to prevent and tackle integrity violations in health within OECD countries.

Policy levers can mitigate integrity violations in health

This final section focuses on strategies to tackle integrity violations specific to the health sector. As public funding dominates health in most OECD countries and the sector is heavily regulated, what happens in the health sector is framed by the overall quality of governance, particularly public sector governance in domains such as public finance and budgeting, public financial management, public procurement and civil service management. A poor level of governance in a given country is likely to permeate the health sector. Conversely, if the civil service or public procurement is corrupt, the health sector is unlikely to be able to address the problem through sector-specific measures alone. With this in mind, the report focuses on two domains where at least some OECD countries have introduced sector-specific interventions: service delivery and financing and inappropriate business practices.

A handful of countries established specific systems to tackle integrity violations in service delivery and financing. OECD countries differ quite significantly in the level of effort spent on addressing integrity violations in service delivery and financing. The response is primarily organisational in the sense that it involves assigning responsibility for detecting or tackling integrity violations in service delivery and financing to specific institutions and sometimes defining how it will be done. Survey responses identified four countries with dedicated central or government programmes or institutions (Belgium, England, Japan and Portugal). Others delegate these responsibilities to payers, either public ones (France, Germany and the United States for Medicare and Medicaid) or private health insurance companies (the Netherlands and Turkey). A number of OECD countries do not have a health-specific dedicated institution for tackling integrity violations, but rely on general counter-fraud and anticorruption organisations instead.[9] Especially when counter-fraud responsibilities are placed in the hands of private organisations, additional legal obligations or incentives may be required to guarantee efforts, as fraud detection can be costly and tackling integrity violations does not necessarily have a positive cost-benefit ratio for private insurance providers.

Fraud detection activities can be more or less pro-active. They can rely on simple audits, controls and/or the investigation of complaints, and systems may or may not be in place to encourage the reporting of integrity violations – for instance through hotlines. More advanced countries use analytical tools to detect integrity violations, including data mining.

When it comes to addressing integrity violations, practitioners highlight the importance of having a stepwise, comprehensive and credibly enforceable response. The first step relies on soft behavioural tools. This mostly consists of raising awareness about a specific type of problem (for instance, overprescription of specific tests, unusual frequency of repeated visits, etc.) by communicating information and data to all or a subset of providers, and – if needed and possible – by generating technical consensus around the fact that the behaviour is inappropriate. This alone can bring about change in behaviours (because perpetrators know the behaviour is under observation or through peer pressure). If the problems persist and/or the scale of the issue requires it, the next step is to investigate specific cases and outliers, using forensic techniques and medical experts who can check facts and carry out investigations but need to be empowered to access medical information. The last step is to take administrative sanctions and/or initiate civil or criminal legal proceedings. Overall, efforts must go into engaging and communicating with health professionals, recognising that errors can happen and that special circumstances can dictate deviations from good practices.

Self-regulation probably remains the norm, but some countries set limits to specific business practices. To tackle inappropriate business practices, countries' responses are typically regulatory in nature and consist of limiting or banning certain practices. Little attention is paid to actively detecting these types of integrity violations. Instead, countries rely on whistle-blowers to report integrity violations or on investigation of and reaction to a specific crisis, particularly when the health consequences are detrimental. The three main domains where some countries have introduced regulation seek to limit self-interested referrals by health providers and the means by which the pharmaceutical industry is allowed to promote sales – including Sunshine regulations (Box 1.10). The

Box 1.10. **Momentum for Sunshine regulations in OECD countries**

- Sunshine regulations consist of requiring that payments made by pharmaceutical and device industries to stakeholders in the health sector be systematically reported to authorities. In the last 15 years a number of countries introduced specific and comprehensive legislation, notably France, Portugal, the Slovak Republic and the United States. Another set of countries including Australia, Belgium, Denmark, Germany, Italy and Spain have rules on disclosure but these are typically less comprehensive (McDermott et al., 2015).
- The scope of Sunshine laws varies across countries. In the United States, industries must report relationships with physicians and teaching hospitals, whereas in France disclosure covers ties with all health professionals and associations representing them, scientific societies, patients' associations and the press. The type of transition disclosed is also variable. In the United States, all payments and transfers of value must be reported and disclosure can be delayed for some payments related to research. In France, fees and honoraria levels are not disclosed. Typically, information is centralised and made public in more or less user-friendly ways, for instance through a researchable online database.
- Critics of such regulation contend that it may damage providers' reputation, even if they do not act inappropriately or even reduce funding for innovation or medical education. On balance though, disclosure is gaining momentum and additional countries are considering legislation in that sense. Interestingly, the code of conduct of the European Federation of Pharmaceutical Industries and Associations requires that companies report all transfers of value to providers as of June 2016.

Table 1.4. **Who, why and what to do? Summary of findings on governance-related waste**

Category of waste	Actors	Main driver	Information systems required	Policy levers	Policy impact	Good practice examples
Administrative waste		Organisational shortcomings, inadequate regulation	Evaluation of costs and benefits of administrative activities	**Organisational change:** merging/ separating/sharing among administrative institutions; improved co-ordination of administrative activities within and between institutions; user guides and protocols, improving management quality; improved use of ICT **Regulation:** removal of administrative tasks; legislative principles; budget ceilings; simplification of procedures; standardisation of forms and reporting requirements	?	**Australia:** Functional and efficiency review of the Commonwealth Department of Health assessing the efficiency and effectiveness of the Department's operations, programmes and administrations **Estonia:** Introduction of paperless e-prescription, reducing time spent to issue prescriptions and medication and for verification by provider and insurers
		Organisational shortcomings, inadequate regulation	Collection and disclosure of information on administrative performance		+	**Germany, Netherlands:** Collaborative efforts of all stakeholders to quantify and agree on reduction of administrative reporting requirements that add little value
		Organisational shortcomings, inadequate regulation			?	**United States:** Stipulating the share of premiums that private insurers have to spend on medical claims
Integrity violations in service delivery and payment				**Organisational change:** setting up/empowering dedicated institutions/programmes; data mining	+	**Belgium:** INAMI (the National Institute for Health and Disability Insurance) uses data mining to detect integrity violations and a step-wise strategy to deal with integrity violations, and can take administrative sanctions (fines)
	 	Intentional deception	Publication of estimates; large-scale collection of treatment and billing data	**Behaviour change:** reporting hotlines, feed-back to outliers	?	**United Sates:** CMS uses contractors to detect error and possible fraud. Zone Program Integrity Contractors are authorised to conduct investigations and co-ordinate with law enforcement
				**Regulation:** administrative and legal sanctions	?	The **European Healthcare Fraud and Corruption Network** (EHFCN) serves as a knowledge exchange platform for countries interested in tackling these integrity violations
Inappropriate business practices	   	Intentional deception	Disclosure of information on potential for conflict of interests Disclosure of clinical trial data	**Regulation:** setting limits or banning specific practices (direct to consumer marketing, gifts and hospitality, self-interested referrals, etc.)	?	Countries with comprehensive and well-established Sunshine regulations include **Australia, France, Portugal, the Slovak Republic and the United States**

 Industry;  Regulator;  Manager;  Clinician;  Patient.

+ Some evidence of positive impact but limited and system-dependent; **?** Impact so far unknown.

question of how to ensure the integrity of research, particularly regarding clinical trials and conflict of interest, is also gaining attention. In general though, industry self-regulation remains the norm.

Overall, many OECD countries need to strengthen their efforts to curb integrity violations in health, not only to reduce waste and increase efficiency, but to enhance transparency, improve the sector's integrity and contribute to patient safety as well (Table 1.4).

Conclusion: Additional benefits of tackling waste

In sum, this overview chapter highlights that waste manifests itself in many different segments of OECD health care systems and creates an unnecessary financial burden. To give a few examples:

- Adverse events in hospitals add between 13-16% to hospital costs, 28-72% of which are deemed avoidable according to international studies.
- Examples of unnecessary or inappropriate care abound at all points of the care pathway, starting with overtesting and overdiagnosis. Unnecessary use of surgical procedures is not an exception. For example, data collected by OECD reveal unwarranted variations across and within countries in rates of cardiac procedures (more than three-fold) and knee replacements (more than five-fold). Excessive use of medicines is also an issue; for instance, half of antimicrobial prescriptions are inappropriate.
- Between 12% and 56% of emergency hospital admissions are for conditions that could have been equally well or better treated in the less costly primary care setting.
- The potential for freeing up financial resources through the use of generic drugs is often not fully exploited – the share of generics in pharmaceuticals covered by basic health benefits varies between 10% and 80% in OECD countries.
- Administrative expenditure on health varies more than ten-fold across OECD countries. The cost depends on the design of the system. Increased complexity may bring about benefits and accountability for results, but duplication of competencies across agencies or reporting obligations that do not translate into actual monitoring are wasteful.
- Loss associated with fraud and error is on average 6% of payments for health care services.

Evidence is thus emerging that a significant share of health care system resources can be released and put to better use by eliminating activities that do not contribute to improving outcomes and by exchanging costly activities with cheaper alternatives that deliver identical or better outcomes.

This chapter and the rest of the report show that although waste is pervasive and takes many different forms, policy makers can act upon it. They need more information to set the relevant priorities. National and international initiatives are in place to collect and publish data on adverse events, low-value care or other types of waste. Successful programmes should be emulated and generalised. Mobilizing stakeholders can help raise awareness about waste in a given system. The Netherlands, for instance, launched a campaign in 2013 inviting people to report instances where they encountered waste (Box 1.11).

Box 1.11. **Mobilising stakeholders to identify and tackle waste in health and long-term care: The Dutch experience**

- In 2013, the Ministry of Health, Welfare and Sports launched a campaign to encourage citizens and professionals to report instances of waste they encountered.
- The virtual and anonymous reporting tool yielded more than 16 000 responses in three months, reflecting patients' experience with unnecessary use of care (wasteful clinical care), operational waste and governance-related waste (administrative burden and fraud).
- Subsequently, the Ministry launched a number of initiatives to address waste in three domains: medicines and medical devices, long-term care and curative health care. In consultation with stakeholders, specific action plans were formulated by steering committees chaired by independent experts. Initiatives included actions to: prevent the non-use of provided medical devices by pro-actively informing new users about the functionalities of their device; increase physicians' cost-awareness of their decisions regarding care; and prevent unnecessary visits to the emergency department.
- Additionally, pilots were initiated to: limit food waste in health care facilities; reduce unused medicine in end-of-life care; and avoid unplanned hospital readmissions through improved discharge management.
- Best practices were highlighted on the Ministry website to inspire other health care providers, and people who reported instances of waste were informed about progress via a quarterly digital newsletter.

Source: Lafeber, F. and P. Jeurissen (2013), "Reducing Waste in Health and Long-Term Care in the Netherlands", *Euro Observer*, Vol. 19, No. 4, pp. 34-37; and the Netherlands Ministry of Health, Welfare and Sports.

All OECD countries already have in place policies that tackle waste, implicitly or not. Yet opportunities remain for more systematic efforts. Strategic implications differ across categories of waste.

- Governance-related waste is present in all systems and should not be tolerated. Still, the magnitude of potential savings in OECD countries remains commensurate with the extent of the problem. For instance, strategically cutting back on administrative costs, which represent on average 3% of expenditure in OECD countries, will not alone put health care systems on a financially sustainable path. At the same time, well-targeted efforts to reduce governance-related waste can produce savings: in 2013-14, the US Department of Health and Human Services saved more than USD 12 for every one invested in its integrity programmes (HHS, 2016). More than savings perhaps, tackling governance-related waste is about improving governance, transparency and ultimately citizens' trust in health care systems.
- Reducing avoidable adverse events and low-value care could potentially release significant amounts of resources. At the same time, a top-down approach will not suffice. Sustainable progress towards better value from health care can only be achieved if patients and especially health care providers are on board, hence the importance of encouraging, emulating and learning from bottom-up initiatives such as local patient safety initiatives and *Choosing Wisely®*. Policy makers can create an environment that incentivises providing the right services rather than many of them – in other words, moving towards payment systems that promote value for the patient across stages of care delivery. More systematic use of HTA would also help reduce low-value care.

- Eliminating operational waste (in other words, ensuing that the lower-cost option to deliver a given benefit to patients becomes the natural or preferred option) is perhaps the most complex endeavour. In some cases (for instance, encouraging the use of generic drugs), pursuing available policy options is a matter of political priority and will. In others (for instance, reducing unwarranted use of hospital care), reforms can become complex and require far-reaching changes. Whether reforms can produce actual savings depends on a country's context and remains difficult to prove empirically. Reducing operational waste paves the way for efficiency-enhancing systemic reforms, though. For instance, any change that contributes to hospitals focusing on their mission to deliver highly technical and specialised services rather than less resource-intensive care is worth pursuing, as it ultimately supports the case for restructuring hospital networks.

The report has three subsequent parts. The first part discusses wasteful clinical care. It focuses on preventable medical errors and low-value care (Chapter 2) and, as a case study of low-value care, evaluates inappropriate antimicrobial prescription (Chapter 3). Chapters 4 and 5 cover operational waste and discuss prices and the use of high-cost inputs, respectively. Governance-related waste is disaggregated into administrative cost (Chapter 6) and integrity violations in the health sector (Chapter 7).

Notes

1. By way of illustration, the following considers whether specific inefficiencies are "wasteful" according to the convention adopted in the report:
   - Wrong site surgery: yes.
   - Robot-assisted surgery: yes – very costly and evidence is lacking that it improves outcomes (Wright et al., 2013; The Lancet, 2016).
   - Inpatient surgery when the outpatient option exists: yes, provided the cost is lower.
   - Insufficient investment in public health: no – additional investment may increase efficiency in the long run, but this does not help identify activities that should be dropped or replaced with cheaper alternatives while maintaining results for specific patients.
   - Insufficient co-ordination of care: it depends. Co-ordination can improve outcomes and efficiency in the long term, but not all shortcomings in co-ordination are wasteful. Maintaining a patient in the hospital because no follow-on care is organised is a wasteful failure in co-ordination.
   - Systematic imaging for low back pain: wasteful in most cases. Longer-term structural savings may require optimising the number and location of costly diagnostic imaging equipment.
2. It is worth highlighting that the distinction between clinicians and managers is somewhat artificial as many clinicians are responsible for managing resources.
3. As highlighted earlier, the report deals more with productive than allocative efficiency, while recognising that, outside of a textbook, distinguishing one from the other is partly a matter of judgement. The focus is on policies that can reduce waste, rather than all efficiency-enhancing reforms, such as investment in public health or the reconfiguring of hospital networks, which are more long-term.
4. Fifteen countries provided responses: Australia, Belgium, Denmark, France, Germany, Israel, Japan, the Netherlands, Norway, Poland, Slovenia, Spain, Switzerland, the United Kingdom and the United States.
5. This classification of policy levers is adapted from Roberts et al. (2008).
6. The term antimicrobials refers to a broad family of agents including any agent killing or inhibiting the growth of microbes. There are many classes of antimicrobials depending on the type of microbes targeted or the composition of the antimicrobial. Antibiotics (or antibacterials) are a sub-category of antimicrobials specifically targeting bacteria.
7. The differences should be interpreted with caution as definitions and estimation methodologies are subject to debate and differ across countries.

8. The opportunity to substitute clinical tasks among staff with different level of qualifications is considered under operational waste.
9. Including: Austria, the Czech Republic, Denmark, Estonia, Finland, Hungary, Ireland, Italy, Poland, the Slovak Republic, Slovenia, Spain and Sweden.

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