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A Review of Empirical Analyses of Disinvestment Initiatives

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ABSTRACT

Background: Disinvesting in low-value health care services provides opportunities for investment in higher value care and thus an increase in health care efficiency. **Objectives:** To identify international experience with disinvestment initiatives and to review empirical analyses of disinvestment initiatives. **Methods:** We performed a literature search using the PubMed database to identify international experience with disinvestment initiatives. We also reviewed empirical analyses of disinvestment initiatives. **Results:** We identified 26 unique disinvestment initiatives implemented across 11 countries. Nineteen addressed multiple intervention types, six addressed only drugs, and one addressed only devices. We reviewed 18 empirical analyses of disinvestment initiatives: 7 reported that the initiative was successful, 8 reported that the initiative was unsuccessful, and 3 reported that findings were mixed; that is, the study considered multiple services and reported a decrease in the use of some but not others. Thirty-seven low-value services were evaluated across the 18 empirical analyses, for 14 (38%) of which the disinvestment initiative led to a decline in use. Six of the seven studies that reported the disinvestment initiative to be successful included an attempt to promote the disinvestment initiative among participating clinicians. **Conclusions:** The success of disinvestment initiatives has been mixed, with fewer than half the identified empirical studies reporting that use of the low-value service was reduced. Our findings suggest that promotion of the disinvestment initiative among clinicians is a key component to the success of the disinvestment initiative.

Keywords: disinvestment, health care efficiency, low-value care, resource allocation.

Introduction

Health technology assessment (HTA) agencies have conventionally evaluated the effectiveness and cost-effectiveness of new technologies to determine whether a health care system should invest in them [1]. Nevertheless, observers argue that by focusing efforts on assessing new technologies, rather than on broader efficiency questions, HTA agencies have contributed to increases in health care expenditures and pressure on health care budgets [2,3].

Health care systems across the globe are increasingly recognizing that to control health care costs it is necessary to complement judicious investment in new health care technology with strategies to reduce the use of unnecessary, ineffective, inefficient, or harmful care [4]. These strategies, commonly referred to as "disinvestment initiatives," have been defined as the partial or complete withdrawal of health resources from existing health care practices, procedures, technologies, or drugs that are deemed to deliver little or no health gain for their cost [5]. Reducing spending on low-value care provides opportunities for a health care system to invest in higher value care and thus to increase health care efficiency.

The introduction of new technologies will increase health care system efficiency only if the introduced technologies displace less cost-effective practices. Historically, health care systems have relied on "passive" disinvestment—or natural attrition—to reduce use of low-value or inappropriate care [4]. In other words, policymakers have assumed that in response to the introduction of new and effective technologies, clinicians will modify their practice and stop using, or use less frequently, existing less effective or cost-effective alternatives. There are a range of levers that exist to guide the use for new and existing technologies—including clinical guidelines and clinical support tools—but there is a growing consensus that existing approaches are insufficient, and that hurdles such as the entrenchment of low-value services in clinical practice and other biases hinder the reduction of ineffective, inefficient, unnecessary, or harmful care [6–9].

Health care systems in various countries have experimented with a range of *active* disinvestment initiatives to address low-value services. Among these initiatives is the National Institute for Health and Care Excellence's (NICE's) "do not do" list of low-value interventions in the United Kingdom and the Choosing Wisely Campaign that has been implemented in the United States and other countries to encourage a reduction in the use of wasteful or unnecessary medical tests, procedures, and treatments [4,10,11]. This experimentation has not led, however, to a single widely

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accepted or validated approach, or to a consensus on what leads to a successful disinvestment initiative. We examined the success of disinvestment strategies by reviewing empirical evaluations of disinvestment initiatives implemented by health care systems across the globe. Our study had two objectives: 1) to sample the literature to identify and describe disinvestment initiatives implemented by health care systems in various countries and 2) to review empirical evaluations of disinvestment initiatives to examine their success in reducing the use of low-value services.

Methods

Study Objective 1: Identifying International Disinvestment Initiatives

We searched the PubMed database to sample the literature for studies that described disinvestment initiatives published through May 5, 2016, using the following search terms: "disinvestment," "decommission," "delist," "health technology reassessment," "low-value," "marginal value," "reallocation," "resource allocation," and "resource management." We limited our search to studies in English and did not restrict study inclusion on the basis of publication date. We used the same search terms to search on Internet search engines. We also searched the gray literature—including government documents and academic working papers—for pertinent studies.

We included studies that described or evaluated national disinvestment initiatives that addressed any type of health care service, including drugs, medical devices, diagnostic imaging and screening tests, surgical procedures, and so on. We excluded strategies that were not national disinvestment initiatives, for example, those limited to individual hospitals. We also excluded studies that described program budgeting and marginal analysis programs because although this technique considers simultaneous investment and disinvestment of health care interventions or programs, it did not meet our definition of a disinvestment initiative.

Study Objective 2: Reviewing Empirical Evaluations of Disinvestment Initiatives

We reviewed the studies that met the criteria as outlined in study objective 1 to determine those that were empirical analyses of disinvestment initiatives, that is, those that compared the use of a low-value service before and after the implementation of the disinvestment initiative. We evaluated each empirical study that met our inclusion criteria. First, we determined what disinvestment initiative was being evaluated and its setting. Second, we reported the low-value service or intervention to which the disinvestment initiative pertained. Third, we reported details on the study's design, including, sample size, the inclusion of a control group, study duration, and the inclusion of a phase-in period, that is, a period of time to allow physicians to become aware of the disinvestment initiative before assessing its impact on prescribing. Fourth, we determined the success of the disinvestment initiative. We considered the initiative to be successful if the study found it to have resulted in a decline in the use of the low-value service attributable to the disinvestment initiative relative to the baseline use of the service (pre-initiative). We reported the statistical significance of the study findings when presented in the study. We considered the initiative to be unsuccessful if it did not result in a decline in the use of the low-value service attributable to the disinvestment initiative. We considered the success of the initiative to be "mixed" if the study considered multiple low-value services and reported a decrease in the use of some services but not others.

Results

Study Objective 1: Identifying International Experience with Disinvestment Initiatives

We identified 26 unique disinvestment initiatives implemented from 1984 to 2014 (Table 1). Eighteen initiatives (69%) were established in 2005 or more recently, including 10 (38%) established in 2010 or more recently. Nineteen initiatives addressed multiple intervention types, six addressed only drugs, and one addressed only devices.

One initiative, the Choosing Wisely Campaign, has been implemented in six countries. Australia (seven initiatives), the United Kingdom (six initiatives), and New Zealand (three initiatives) have implemented the most disinvestment initiatives. Twenty-five initiatives were implemented in a single country.

Study Objective 2: Reviewing Empirical Evaluations of Disinvestment Initiatives

We identified 18 empirical evaluations of disinvestment initiatives (Table 2). Nine evaluated Choosing Wisely Campaign recommendations, eight evaluated disinvestment initiatives implemented by NICE in the United Kingdom, and one evaluated a US Preventive Services Task Force (USPSTF) grade D recommendation (a recommendation against the service).

Choosing Wisely Campaign

In 2012, the American Board of Internal Medicine launched the Choosing Wisely Campaign to help providers and patients engage in conversations about avoiding the use of unnecessary treatments, tests, and procedures [10]. The campaign was developed in conjunction with 20 medical specialty professional organizations, each of which generated a list of five interventions that they considered to be overused in their field.

NICE initiatives

NICE is an executive nondepartmental public body of the Department of Health in the United Kingdom. Among its roles is to provide recommendations on care that should or should not be used in the National Health Service [12]. NICE's recommendations regarding low-value care can originate in various sources including clinical guidelines and in HTAs that are informed through review of clinical and cost-effectiveness evidence and input from stakeholders [13,14].

US Preventive Services Task Force

The USPSTF is an independent panel of experts in primary care and prevention [15]. The task force reviews evidence of an intervention's effectiveness to develop evidence-based recommendations for clinical preventive services intended for use by health care professionals and patients. It uses a grading scheme to summarize its recommendations [16]. The task force uses a grade D to recommend against a service in which there is moderate or high certainty that the service has no net benefit.

Success of Disinvestment Initiatives

Seven (39%) studies reported that the disinvestment initiative was successful, eight (44%) reported that the initiative was unsuccessful, and three (17%) reported that the success of the initiative was mixed. In all, the 18 studies evaluated 37 low-value services, for 14 (38%) of which the disinvestment initiative led to a decline in use.