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### **Toward a Rational Model of Depression Treatment**

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### **Abstract and Keywords**

Depression is a heterogeneous condition with significant variations in both course and response to treatment. The diverse needs of depressed individuals suggest that treatment should be organized systematically, with multiple efficacious treatment modalities such as psychotherapy and pharmacotherapy available and delivered in a manner and sequence consistent with the best available evidence. Moreover, these systems must be cost-conscious, implementable in regular practice, and accessible to those who require treatment. We term such structures “rational” systems of care. In this chapter, we provide a review of essential components of a rational system, including (1) identifying individuals in need of services, (2) selecting treatment(s), (3) monitoring response and supporting clinical decisions, (4) adapting treatment strategies, (5) maintaining the treatment response, and (6) maximizing access. Case examples of national efforts to implement systems of depression care are provided and discussed, followed by a review of implementation and research issues.

Keywords: depression, psychotherapy, pharmacotherapy, implementation, treatment selection, response monitoring, adaptive treatments, relapse prevention

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## **Introduction**

## Toward a Rational Model of Depression Treatment

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Major depression is currently estimated to be the second leading cause of disability in the world (Ferrari et al., 2013). Despite the tremendous output of clinical research on depression, its prevalence appears to be growing (Compton, Conway, Stinson, & Grant, 2006). Research directed at improving treatment outcomes for depression has focused on two areas: (1) developing specific treatments and producing guidelines specifying the optimal selection and ordering of treatments (treatment *technology*), and (2) developing procedures for integrating evidence-based treatments into practice (treatment *implementation*; Proctor et al., 2009). Given the substantial heterogeneity in the both natural course of depression and patient responses to specific treatments, as well as the challenges of translating effective interventions into practice, we argue that there is a need for *systematic* approaches to depression treatment. In systematic approaches, the best available treatment technology is embedded within an organizational framework for identifying individuals in need, delivering care, and adapting to variations in patient responses. Such approaches—if implemented flexibly and rationally—represent the best chance of meeting the needs of a heterogeneous clinical population.

Two internationally popular examples of systematic approaches are *collaborative care* (Katon et al., 1995), which is a consultation liaison system intended to integrate specialist expertise and advice into primary care, and *stepped care*, a treatment approach that specifies lower-intensity interventions as a first-step treatment, and treatment adjustments thereafter based on response (National Institute for Health and Care Excellence [NICE], 2009; Richards, 2012). Recent reviews and meta-analyses have found that both approaches lead to (p. 479) reliable reductions in depressive symptoms (Miller et al., 2013; van Straten, Hill, Richards, & Cuijpers, 2015). Despite these promising developments, the range of interventions offered in these systems is, in many contexts, constrained by cost and availability, particularly with respect to psychotherapeutic treatments (Kazdin & Blase, 2011). Additionally, the lack of research on decision rules to guide initial and subsequent treatment strategies, and the near-absence of randomized comparisons between alternative systems of care (e.g., collaborative care versus stepped care) indicate that the evidence for these systems has significant limitations.

In our review of the literature, we have found surprisingly little discussion and even less research directed at answering the question of what components an optimal system of care might have. The current chapter is organized around the following question: Given what we know about the nature of depression, what is a *rational* system for delivering treatment? Ideally, a rational system would integrate and organize the best available treatment technology in such a way as to meet the needs of the diverse set of individuals with depressive symptoms. When evidence is not available, a rational system must balance the needs of and potential risks to patients against the realities of clinical practice. Given our varied concerns, our discussion will span issues of intervention technology and implementation.

## Review of System Components

There are several broad categories of features we believe are essential for a rational treatment system. These include procedures for:

1. Identifying, assessing, and triaging individuals in need of services;
2. Selecting the initial treatment strategy;
3. Monitoring progress and supporting clinical decisions;
4. Adapting treatment in the case of inadequate initial response;
5. Maintaining the treatment response over the longer term; and
6. Maximizing access and benefit at the population level.

What follows are brief reviews of the literature in each of these areas. The second part of this chapter will explore how two nations have attempted to deploy systematic—and perhaps rational—approaches to depression treatment, and will discuss barriers to the development and implementation of a rational treatment system.

## Identifying Depressed Individuals—Is Screening Appropriate?

A primary concern of a population-based rational treatment system is how individuals come to be identified as “depressed.” Individuals might self-identify, be diagnosed by a clinician, or in some cases be identified by a screening procedure. Screening mostly involves the use of brief questionnaires or inquiries (questions on mood and/or anhedonia) that enable practitioners to detect the probable presence of depressive symptoms (Pignone et al., 2002). Although screening for depression (or other diseases) might appear to be a matter of common sense and therefore a “rational” component of depression treatment, it is not without risks. For example, early detection might increase the duration of illness in some individuals, especially if early detection does not lead to a better prognosis or effective treatment (Rothman, Greenland, & Lash, 2008). Although clinical guidelines (Joffres et al., 2013; O’Connor, Whitlock, Beil, & Gaynes, 2009) share the conclusion that screening is appropriate in clinical settings that have systems that ensure accurate diagnosis and linkage to effective treatment, a recent review found that screening did not result in improved depression outcomes in controlled trials (Thombs et al., 2012). The available evidence suggested that screening incurs a relatively high cost but low yield in identifying undiagnosed and untreated individuals who are actually amenable to or require treatment, coupled with a relatively high false-positive rate. Thus, in keeping with our call for rational approaches, population- or practice-wide screening would appear to be of limited utility.

## Determining the Need for Treatment

The identification of depressive symptoms goes hand in hand with determining whether treatment for the condition is needed or desired. The presence of depressive symptoms might seem a self-evident reason for treatment, but the benefit of treatment is actually questionable for milder cases or in persons with “uncomplicated” depression for whom the condition might be transient (Wakefield & Schmitz, 2013). Currently, the use of antidepressant medications for patients both with and without a formal depression diagnosis is becoming more common (Mojtabai & Olfson, 2011). This trend has alarmed some observers, who note that the diagnostic criteria of depression have expanded to include emotional states that previously would have been considered normal reactions to stressful life events, thus pathologizing “normal sadness” (Wakefield & (p. 480) Schmitz, 2013). In support of this assertion, only around 30% of depressed individuals seen in primary care develop a chronic course (Wardenaar, Conradi, & de Jonge, 2014), and outcomes in the short term are often favorable even without treatment (Sareen et al., 2013). Evidence has also accumulated suggesting that antidepressants are at best no more effective than placebo in mild to moderate depression (e.g., Fournier et al., 2010). The pathologizing of normal sadness and the widespread prescription of antidepressant medications for those for whom they are unlikely to be effective might have a profound effect on mental health outcomes in a population. The result might be the widespread creation of “patients” who believe they are ill and thus incur the cost of treatment—possibly prolonged—that they might not have needed. A rational system of treatment, therefore, must be concerned with identifying those truly in need before making a treatment prescription.

Currently, the best means of discriminating transient from more chronic or pathological emotional states is not known. In lieu of a formal test, experts recommend the assessment of the presenting clinical features (Steinert, Hofmann, Kruse, & Leichsenring, 2014), which might include diagnosis and subtyping, a consideration of the stage of the illness, and an assessment of treatment history and comorbid conditions. Perhaps the most important component of the decision to treat is to include a clear delineation of the risks and benefits of treatment and to enlist the patient in the decision-making process. For those who are judged to have a self-limiting or “reactive” depression—or those who decide against treatment—an option might be “watchful waiting,” or the provision of low-intensity, low-risk (and low-cost) treatments.

## Initial Treatment Selection

Once a need for care has been established, the patient and clinician must select an initial treatment approach, such as medications or psychotherapy. Meta-analyses and clinical trials provide data on treatment effects for the average patient. However, treatment response heterogeneity suggests that a “one-size-fits-all” approach will result in many individuals’ receiving limited benefit. In a rational system, there are at least two non-

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mutually exclusive strategies for assisting in the selection of the initial intervention: (1) using predictive information derived from individual patient characteristics, and (2) employing a rule-based or sequential approach such as stepped care.

### Using Patient Attributes to Select Treatment

Predictive information can be useful for identifying subgroups for which one treatment strategy is preferred to another (e.g., Fournier et al., 2009; Huibers et al., 2014). Predictors of treatment response fall into two main categories (Simon & Perlis, 2010). The first category is *prognostic* factors; i.e., predictors of overall illness course or response to treatment, irrespective of which treatment is offered. Prognostic methods are commonly used in medicine for triage and decision-making (e.g., Durrant, Lip, & Lane, 2013), and might fill a similar niche in a rational system of depression care. For example, prognostic methods that identify individuals' likelihood of recovery might be useful for making a recommendation vis-à-vis the need for treatment, or be used to identify those who are at risk of developing a chronic course and alerting clinicians to the need for more intensive assessment and management (Perlis, 2013).

Predictors of differential response across two or more treatments are known as *prescriptive* factors, the second category (Driessen & Hollon, 2010). The identification of valid prescriptive factors would provide information that would inform the selection of one treatment for a patient from among multiple treatments that are similarly effective on average. Research on prescriptive factors faces several challenges (Shoham & Insel, 2011), but studies have revealed several candidate predictors (Fournier et al., 2009; Huibers et al., 2014). If replicable and clinically significant prescriptive variables are identified, the next step involves the translation of prescriptive information into actionable clinical recommendations. In a promising development, at least two approaches to combining moderators of differential response to medications versus psychotherapy have been proposed, and await replication (DeRubeis et al., 2014; Wallace, Frank, & Kraemer, 2013).

In practice, the output of any predictive model must also be considered alongside patient preference (also a moderator of efficacy; Mergl et al., 2011), cost, and other considerations. Whatever their form, the availability of prognostic and prescriptive tools would make a significant contribution to the decision-making process.

### Using Stepped Care to Select Treatment

In a stepped-care system (Bower & Gilbody, 2005), patients with depression are advised to select the initial treatment most likely to help them recover while burdening them the least (p. 481) with side effects and effort. If their symptoms do not improve, they are advised to undertake a different—and often more intensive—treatment regimen until their symptoms are improved. This principle can be equally applied to pharmaceutical

(e.g., by increases in dose, augmentation, or switching) or psychological treatments (e.g., more sessions, different content, more highly trained therapists), or by combining these approaches. Thus, in theory, a stepped-care system has advantages in increasing access to inexpensive treatment while simultaneously managing the heterogeneity of treatment response through “stepping up.” In contrast to the use of predictive information, stepped-care approaches have been implemented in countries such as the United Kingdom and the Netherlands.

Unfortunately, the fact that stepped care appears to be a good fit for managing response heterogeneity in depression is largely incidental. Stepped care in mental health was originally conceived to reduce the burden on patients and health systems by increasing “access” (see section herein, “Improving Access”) while at the same time reducing costs, or at least holding them steady. More recently, stepped care has been suggested as a delivery method for “low-intensity” supported self-management approaches, such as computerized psychotherapy. Stepped care requires that the “strength” of the initial treatment allocation be titrated against the patient’s assessed clinical needs (Bower & Gilbody, 2005). Symptom severity is often used in clinical practice to divide patients into “low-” and “high-intensity” groups, but people with the severest symptoms improve at least as much in response to low-intensity treatments as do those with more moderate symptoms (Bower et al., 2013). So it is unclear whether skipping low-intensity treatment based on the putative need for more intense services would provide more benefit, on average, than providing low-intensity options to (almost) every individual who presents for treatment.<sup>1</sup>

Furthermore, although stepped care is featured in many high-quality treatment guidelines (NICE, 2009; Patten et al., 2009), all trials of stepped care for depression have compared it against “usual care”; principally, depression management in primary care, a system that is arguably a less intensive comparator than stepped care itself. Thus, while stepped care has been widely adopted as a means of organizing care, the conclusions that can be drawn about it as a means of treatment selection are limited. Nevertheless, stepped care appears to be a cost-effective method for delivering low-cost, supported, self-management approaches to large numbers of those in need, suggesting that its strength might be in increasing access and minimizing cost.

## Response Monitoring and Next-Step Interventions

If initial treatment response is suboptimal, determining the need for a change and selecting a subsequent treatment strategy involves integrating several variables, including patient preference. Means for determining an inadequate response include failing to achieve a specified percentage change in symptoms, often 50%, or failing to achieve symptom remission as indicated by a clinical cutoff on a symptom measure.

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Deviations from an expected average improvement trajectory can also be used to identify individuals who do not appear to be benefiting (Steidtmann et al., 2013). Intriguingly, evidence suggests that the act of monitoring response and provision of feedback to clinicians in the case of inadequate response can help improve clinical outcomes (Shimokawa, Lambert, & Smart, 2010).

An additional possibility is to adjust treatment based on changes in theory-relevant mediators or other contextual factors that are known to influence outcome. It is now recommended practice in the UK to embed a “process evaluation” in clinical trials of complex interventions in order to “explain discrepancies between expected and observed outcomes, to understand how context influences outcomes, and to provide insights to aid implementation” (Medical Research Council, 2008). As well as measuring intervention fidelity, treatment adherence, and intermediate outcome variables, such evaluations can shed light on factors that influence patient response and clinician behavior.

The specific strategies for augmentation or switching treatments are many and have been covered extensively by others, so they will not be detailed here (e.g., Forand, DeRubeis, & Amsterdam, 2013). Although evidence relating to switches or augmentations between, as opposed to within, therapeutic modalities is equivocal with respect to the relative efficacy (e.g., Thase et al., 2007), a switch across modalities might be more likely to target different underlying deficits presumed to be causal in depression (DeRubeis, Siegle, & Hollon, 2008).

The simultaneous initiation of combined psychotherapy and medications is also common (Olfson & Marcus, 2010) and is generally found to be more effective than either alone, particularly for more complex cases (e.g., Cuijpers, Dekker, Hollon, & (p. 482) Andersson, 2009). Some have argued that the cost/benefit ratio of initiating two treatments together is not favorable, given the rather modest gains in efficacy, increase in risk, and the lack of data on long-term outcomes of this strategy (Forand et al., 2013). Consistent with this argument, some have suggested “clinical staging” approaches to combination treatments, in which the selection and ordering of psychotherapeutic and medication treatments is pre-specified and guided by the progression of illness and the person’s stage within the illness (Fava, 1999). However, the exact deployment of monitoring and treatment-adjustment rules will depend on the exigencies of the implementation site, which will include service design, patient volumes, and the staff’s expertise.

## Maintenance and Relapse Prevention

The next component of a rational system is concerned with maintaining treatment response. Patients suffering from a first depressive episode have a 40–60% chance of experiencing recurrence,<sup>2</sup> and after three episodes, this risk is as high as 90% (Eaton et al., 2008; Solomon et al., 2000). At a minimum, high rates of recurrence suggest that symptom monitoring should continue in patients with recurrent depression (Spijker et al.,

2012). Unfortunately, initial treatment with medications does not have an enduring effect in preventing recurrence (Glue, Donovan, Kolluri, & Emir, 2010). The most widely used preventive strategy to reduce recurrence is continued use of antidepressants for multiple years, a strategy that has proven effective at reducing rates of relapse in comparison with placebo (Kaymaz, van Os, Loonen, & Nolen, 2008).

However, concerns about the long-term risks and benefits of medications suggest caution regarding this strategy (Fava & Offidani, 2011). There is little guidance on how long patients should continue to take medications; moreover, those with multiple prior episodes appear to derive less protection from continuation medications versus placebo than those with only one prior episode (Kaymaz et al., 2008). In contrast to medication treatment, acute phase monotherapy with cognitive behavioral therapy (CBT) has enduring preventive effects (e.g., Cuijpers et al., 2013). Unfortunately, data on whether the prophylactic effect of acute CBT is retained during combined treatment with CBT and medications is limited (Vittengl, Clark, Dunn, & Jarrett, 2007). For patients who achieve their initial response using medications, a possible alternative for preventing recurrence is a sequential approach in which brief preventive CBT or mindfulness-based CBT is started after recovery. In contrast to medications, some studies indicate that sequential psychological interventions have an increasing protective effect, with increasing number of previous episodes that can be sustained over five to six years (Bockting, Spinhoven, Wouters, Koeter, & Schene, 2009).

The question of the appropriate strategy for the maintenance of a positive treatment effect hinges on the relative long-term merits of the initial treatment. Medications and psychotherapeutic approaches are approximately equally effective in the acute phase. However, CBT might be more cost-effective in the long term because of its prophylactic effect on recurrence. Brief relapse-prevention treatments begun after successful medication treatment might prove to be an implementable and cost-effective means of preventing recurrence. Another challenge is the maintenance of response after low-intensity or supported self-management treatments. At the current time, there are few data on their enduring effects (Rodgers et al., 2012); therefore, the extent of the need, and the most appropriate maintenance strategies to address this need, are unknown.

## Improving Access

Improving access (Richards & Bower, 2011) is a beguilingly simple concept that actually incorporates a multi-dimensional conceptual framework of:

1. Service availability;
2. Utilization—influenced by affordability, physical accessibility, and acceptability to service users;



3. Efficiency—how limited resources are distributed to maximize societal health gains; and
4. Equity—the suitability of treatments for all people in society independent of their perspectives, health needs, material and cultural views (Bower & Gilbody, 2005; Gulliford et al., 2002).

Models for improving access to psychiatric treatment need to consider the pathway taken by potential patients who self-identify as candidates for mental health care, then navigate to the interface point between services and the population, make an “appearance” at health services, and finally decide whether to accept or turn down any offer of treatment (Gask et al., 2012).

Rational systems must, therefore, pay attention to the way patients operationalize their journey from ill health to health again. Matching available treatments to the nature of this journey, being sensitive to potential changes in patients’ self-perception, (p. 483) and attending to their individual preferences are all critical in any rational system that wishes to improve “access.” Although technological advances such as telehealth and other eHealth services have been successful in providing treatment to individuals who would not otherwise have received it (Hilty et al., 2013), it is important to consider that merely increasing the amount of available treatment is not “improving access.” Improving access requires a root-and-branch redesign of how services sit within a broad societal framework, as detailed in the following case studies.

## Examples of Systematic Approaches on the National Level

The following discussion provides two examples of systematic approaches to depression treatment—from the Netherlands and from the United Kingdom. These examples describe the functional details of each system, including the guidance behind the systems and how this guidance addresses or does not address the components identified above; and we also discuss the challenges of implementing the guidance into practice.

### The Netherlands System

The Dutch system takes a “top-down” approach. The primary activities directed at installing a systematic approach to depression treatment have been the production of a clinical guideline and multiple efforts to disseminate and implement the guideline on the practitioner level (therapists, psychiatrists, and other service providers).

The Dutch guideline, first published in 2003, is a continuously updated multidisciplinary guideline written with input from representative professionals involved in mental health treatment (psychologist, psychiatrists, general practitioners, and nurses). It is based on a

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stepped-care principle. Clinical factors determine the recommended initial treatment intensity; i.e.; duration of the episode (under 3 months versus 3 months or longer), severity (mild versus moderate to severe), the number of previous episodes (first episode versus recurrent), and any comorbidity. The guideline recommends psychosocial interventions for mild depression, with pharmaceutical treatment reserved for moderate to severe or chronic illnesses. Initial low-intensity interventions include psychoeducation, activation recommendations, or watchful waiting. First-step psychosocial interventions for mild depression include bibliotherapy, supported self-management (including eHealth interventions), supported activation, physical exercise, and counselling or brief psychosocial interventions. For patients with a depression of mild to moderate severity requiring a higher-intensity intervention, CBT is recommended as the first-line treatment because of its prophylactic effects, with combined treatment with medication reserved for more severe depressions. The guideline also recommends behavioral activation, interpersonal therapy, and dynamic psychotherapy in some cases. The guideline does not provide guidance for clinical decision making regarding the need to “step up” treatment intensity (apart from the advice to add pharmacological treatment), nor does it describe methods for lifelong symptom-monitoring to detect early signs of relapse. For the maintenance of response, the guideline suggests the continuation of medications or the addition of relapse-prevention psychotherapy.

Several deliverables were produced concurrent with the implementation of the guideline, including an overview of implementation strategies (van Duin, van de Glind, & Verburg, 2004) and a checklist for assessing the attributes of its successful implementation (van Karsbergen & Eland, 2002). A set of indicators for monitoring the performance of psychiatrists, psychotherapists, and psychologists was also developed (Smolders, Laurant, Wensing, & Grol, 2005), and the guideline was made freely available online.

Since 1990, multidisciplinary descriptions of the Dutch guideline, developed in collaboration with clinicians, have also been made available. These detail the steps and procedures for diagnosing and treating depression for each participating mental health center (Franx, 2012). In addition, a quality-improvement collaborative was initiated by the Dutch Ministry of Health, Welfare, and Sport to improve the quality of care and health outcomes (Franx, 2012). It included organizational and practice-based descriptions of care that were mostly in line with clinical guidelines, termed “depression pathways.” A majority of the mental health organizations in the Netherlands use these pathways (Hutschemaekers, 2009; Verburg, Laport, & Boerema, 2008). A quality-improvement collaborative project was also launched for treatment of depression (Breakthrough Depression) that enlisted the help of multiple stakeholders to bridge the gap between best and current practices (Hulscher, Schouten, & Grol, 2009; van Splunteren et al., 2003).

After the publication of the first guidelines in 2003 and 2005, many professionals were positive (p. 484) about their usefulness in daily clinical practice (Smolders, Laurant, van Duin, Wensing, & Grol, 2006). Two years later (2008), a survey of 406 psychiatrists, psychotherapists, psychologists, nurses, and creative therapists revealed that most

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professionals were aware of the existence of the guideline (91% overall and 73% for general practitioners). However, only 28% of the professionals reported using them in clinical practice (Sinnema et al., 2010). Poor applicability in daily clinical practice and a lack of skills and time were mentioned as reasons for not using the guideline. Clinicians also complained about the poor integration of different professions that work with depressed patients (Sinnema et al., 2010; van Wersch & van den Akker, 2005). The 2005 guideline (Dutch Multidisciplinary Guideline, 2005) was considered to be too extensive and impractical (Sinnema et al., 2010; Smolders et al., 2006; van Wersch & van den Akker, 2005). In response, updated Dutch guideline includes brief summaries and algorithms ([www.ggzrichtlijnen.nl](http://www.ggzrichtlijnen.nl)). So, despite multiple efforts to improve awareness of the guideline, their implementation remains a major challenge.

### The United Kingdom System

The United Kingdom has also taken a “top-down” approach to the production of clinical guidelines (NICE, 2009, 2011). However, this approach has been supplemented by a large national effort to train sufficient numbers of providers to deliver the service and implement the service structures recommended within the guideline. This program, known as Improving Access to Psychological Therapies (IAPT), has been described in a *Nature* editorial as “a world-beating standard thanks to the scale of its implementation and the validation of its treatments by the UK National Institute for Health and Clinical Excellence” (*Nature*, 2012; pp. 473–474). IAPT arose partly because the NICE guidelines identified psychological treatments for depression as being at least as effective as pharmacotherapy. Running parallel to these guidelines were both a groundswell of public opinion in favor of “talking treatments” (e.g., Bird, 2006) and arguments put forward by macro-economists (Layard, 2006) that investment in these services would pay for itself in terms of reduced welfare spending and increased productivity. These three factors together were the genesis of the IAPT program.

The NICE guideline for depression is similar to the Dutch one in that they recommend a stepped-care pathway that includes identification, assessment, and triaging of individuals by practitioners competent in mental health assessment. In terms of treatment selection, people with mild or sub-threshold depressive symptoms are to be managed initially with the provision of advice and two weeks of active monitoring. People with mild to moderate depression, or those who do not remit during the monitoring period, are to be treated by supported, CBT-based low-intensity interventions, group-based CBT, or a structured physical activity program. For those who do not respond to these options or those with moderate to severe depression, NICE recommends antidepressant medication, high-intensity CBT, interpersonal therapy (IPT), behavioral activation, and behavioral couples therapy. People with moderate or severe depression can also receive combination treatment. CBT or mindfulness-based cognitive therapy is recommended for people who are at higher risk of relapse. Various forms of inpatient physical treatments are

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recommended for those at severe risk or whose severe symptoms have not improved after all other treatment options have been exhausted.

In order to maximize access and treatment at the population level, the English NHS offered a unique opportunity through its centralized service commissioning process. The English Department of Health (DH) mandated that local health providers organize and deliver services to a blueprint defined by the DH. However, the DH recognized that there were too few therapists to deliver what it required. Consequently, large sums of money were invested in training at least 3,600 clinicians to deliver low- and high-intensity psychological interventions, by commissioning universities to provide accredited education courses. A new postgraduate-educated paraprofessional cohort of “Psychological Wellbeing Practitioners” (PWP) was created (Richards, Farrand, & Chellingsworth, 2011) to deliver low-intensity CBT, alongside the retraining of existing mental health professionals in high-intensity psychological therapies. Local services were allocated centrally commissioned training places for these workers according to local population-prevalence figures for anxiety and depression, together with salaries and infrastructure costs.

Services were expected to model their organization of treatments using the collaborative-care/stepped-care model first pioneered in one of the IAPT pilot sites in Doncaster (Richards & Suckling, 2009). In addition, services were required to collect process and outcome data from patients during each contact with a clinician and to report these data to (p. 485) the DH. These data have been used to assess overall effectiveness of the program (e.g., Gyani, Shafran, Layard, & Clark, 2013). Clinical case-management supervision was mandated alongside the more usual clinical supervision of therapists (Milne & Watkins, 2014). Targets for the numbers of patients treated were set at 15% of the population prevalence for anxiety and depression, and services were expected to achieve 50% recovery rates against published metrics for their patients.

IAPT has certainly delivered a huge change in the landscape and expectations for access to psychological therapies in the United Kingdom (Department of Health, 2012). During the first three years of operation (2008–2011), over 1 million people were referred to IAPT services, of whom 680,000 completed treatment, with two-thirds either recovering or making reliable improvements in their well-being. However, despite central mandates, there is considerable between-area heterogeneity in terms of service structure and performance. The financing of services is now in the hands of local health commissioners, which has led to services in some localities being allowed to disappear. The lack of evidence for how to actually structure and implement stepped care has also resulted in some very different approaches to service delivery. For example, different local services interpreted stepped care so variably that, for its first year of operation, rates of “stepping” from low- to high-intensity treatments varied from 0–55% of patients seen (Glover, Webb, & Evison, 2010). Another major problem is attrition of the PWP workforce, many of whom move on rapidly to other, better-paid posts, often in pursuit of eventual clinical psychology training. Despite a £700m (\$1.132 billion) investment, fewer than 15% of people with anxiety and depression avail themselves of IAPT services, and recovery

rates are yet to consistently hit the target of 50% of people treated. Nonetheless, as an example of huge rational service development and implementation, IAPT stands as a beacon, many of the features of which warrant emulation in mental health systems in other countries.

## Toward a Rational System—Implementation

The Dutch Multidisciplinary Guideline and the NICE guidelines represent state-of-the-art summaries and integration of the existing literature on the treatment of depression. But it is one thing to summarize the available evidence in clinical guidelines and another to translate these guidelines into practice. Despite several efforts at implementation and dissemination, only a small minority of the Dutch professionals report actively using the guideline (28%; Sinnema et al., 2010). Because there is also a lack of systematic supervision or incentive for clinicians to practice in accordance with this guidance, the probability that a patient will receive high-quality empirically supported psychotherapy in the Netherlands is uncertain. In comparison to the Netherlands, the United Kingdom's IAPT—under which the NHS funded the training of therapists, stimulated access and use of psychological therapies, and promoted the stepped-care structure of the NICE guidelines—has had a profound impact on the availability and quality of clinical services and appears to be a significant step toward the development of a truly rational system.

The pragmatic lessons of IAPT, the Dutch system, and other attempts to improve the availability of services indicate that the successful implementation of any treatment system involves managing multiple interacting components at individual, clinical, organizational, and national policy levels. At the outset, any such program is most likely to be feasible only if healthcare is subsidized on a national level, which allows some measure of centralized control over operational procedures. Beyond this, the successful implementation of such a system must concern itself with several potential barriers:

1. *Personnel*: clinicians must be skilled in supporting self-management and also in delivering traditional high-intensity therapies, which might require substantial training efforts to build appropriate competencies. In addition, staff must be available who can provide pharmacological therapies (Wiles et al., 2013).
2. *Systematic response monitoring*: routine assessment of patient progress is required to support clinical decision-making.
3. *Smart informatics*: electronic patient-management systems must record and present the key variables necessary for clinical decision making.
4. *Supervision*: efforts are required to ensure the provision of pharmacological and psychological services that are both competent and consistent with the guidance of the system.
5. *Coordination*: a rational service will need strong management to ensure the smooth operation of the system.

6. Finally, the method by which individuals with depression make initial therapeutic selections (p. 486) and onward-progress decisions should be as empowering and interactive as possible.

## Toward a Rational System—Research

We conclude by offering some thoughts on the state of the evidence for the organizational components of treatment systems. Despite substantial research on monitoring symptoms for guiding clinical decision-making, consensus has not emerged on the best means of integrating such procedures into practice; furthermore, there are almost no data concerning the clinical use of predictive information to select treatments. The challenge is to combine research on effective interventions with research on the means for allocating, monitoring, and adjusting these treatments to improve overall response. The individualized treatment strategies we have outlined fall broadly under the umbrella of “adaptive treatment approaches” (Murphy, Collins, & Rush, 2007). Adaptive strategies, which are concerned with the ordering of treatments and timing and strategies for making clinical adjustments, are specifically appropriate for disorders with marked heterogeneity in their course and treatment response. A research design specifically intended to assess sequences of treatments and clinical decision rules is known as *sequenced multiple assignment randomized trial* (SMART). By re-randomizing patients at multiple treatment steps and using both static and time-varying information for “tailoring” the treatment and decision rules, SMART designs allow the investigation of “personalized” treatment pathways for individuals (Collins, Murphy, & Bierman, 2004). Such methods might be deployed to ascertain the optimal decision rules for initial and subsequent treatment steps.

## Conclusion

Our review has attempted to detail the multiple empirical, organizational, and policy factors that must be considered in order to fully develop and implement a population-wide rational treatment system for depression. Several gaps in our knowledge are apparent; for example, research efforts must be directed toward the optimal selection and ordering of existing treatments, and focused on the interface between complex treatment systems and the demands of regular clinical practice. Although we have provided only a brief review of each area, we hope that this chapter serves as a means of organizing and inspiring future research and implementation efforts, as another step towards the development of a rational system of treatment.

### Author Note

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### Notes:

(1.) Of course, “magnitude of improvement” is not synonymous with remission, and, given their initial symptom burden, high-severity individuals are likely to require continued treatment. Understanding the effectiveness and efficiency of low-intensity treatment (or any treatment) within a rational system might therefore involve a rethinking of “outcome”; perhaps by focusing on remission or a return to normal levels of functioning as the outcome of interest.

(2.) The term *recurrence* is used for both relapse and recurrence.

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