Unleashing the Potential of Therapy Adherence
High-Leverage Changes in Patient Behavior for Improved Health and Productivity
EXECUTIVE SUMMARY

For any patient facing the shock of a serious diagnosis, a critical aspect of prevention and recovery is follow-through: putting into practice all the medical treatment that the doctor and patient have agreed is necessary. This is known as “therapy adherence.” The specific behaviors of adherence—whether a patient conducts lifestyle changes involving exercise or diet, takes medication as scheduled, pursues all the recommended treatments, watches for changes in symptoms, and takes further precautionary measures—appear at first glance to be a private affair. But therapy adherence also has a broader impact. It lowers healthcare costs associated with complications and the progression of diseases, and it increases workplace productivity. Perhaps surprisingly, the cost to society of lost productivity from a chronic disease is at least as significant as its associated medical costs.

This briefing describes a Booz & Company/Bertelsmann Foundation analysis of the direct productivity benefits of improving adherence to medical therapy. For five chronic diseases, we drew on data compiled in the U.K., Germany, and the Netherlands. These diseases—hypertension, asthma/chronic obstructive pulmonary disease (COPD), chronic back pain, depression, and rheumatoid arthritis (RA)—drive huge annual productivity losses, reaching €28 billion to €50 billion in the U.K., €38 billion to €75 billion in Germany, and €9 billion to €13 billion in the Netherlands. Productivity loss was calculated by looking at work loss due to absenteeism, “presenteeism” (on-the-job slowdown), and work disability.

Improving adherence is notoriously difficult, but certain approaches to improving adherence have been successful on a small scale. Rolled out on a large scale, these measures can deliver huge productivity gains, as shown by the scientific studies and statistics referred to in this study. Improvements in productivity would be especially welcome in European economies, where aging populations are set to drive labor scarcity over the next decade. Productivity gains of €8 billion to €19 billion in the U.K., €10 billion to €20 billion in Germany, and €2 billion to €4 billion in the Netherlands are feasible. These results suggest a value for therapy adherence that is likely to hold true across other countries and other diseases. And given the wealth of possible interventions, these estimates might even be conservative.

Four strategies will help dismantle barriers and streamline the adoption of practices that increase therapy adherence:

- Create and deploy incentives for doctors, nurses, and patients to integrate therapy adherence in treatment plans, focusing on quality instead of the volume of care services.

- Increase the role that employers and Social Security administrations play in adherence, aligning health gains with productivity gains.

- Explore new service and business models in healthcare that are better equipped to foster improved therapy adherence.

- Reorient research to evaluate the impact of adherence, study best practices, and optimize incentive models.
THE CHALLENGE AND THE CHANCE

Heeding a physician’s recommendations can be unpleasant. People often find it challenging to follow through on the agreements they make with their physician, and to accommodate all the required changes in their habits. Although non-adherence is a universal problem, the reasons vary greatly among patients and diseases. Therapies can interfere with one’s work schedule or social life; they may be inconvenient or hard to schedule; medical recommendations and requirements may be difficult to understand or remember; and patients can just be distracted by the pressures of everyday life. The treatments themselves may be unpleasant, taxing, or apt to cause uncomfortable side effects. The patient may even be getting conflicting medical advice from different specialists, or may hear or read something (for instance, on the Internet) that leads him or her to question the value of the treatment, without necessarily raising these questions directly with the physician. Finally, since the benefits of therapy adherence appear gradually, it is all too human to procrastinate or let some parts of a regimen “slip.” For any of these reasons, patients may not take enough of a prescribed medication, they may discontinue treatment too early, or they may not make all of the lifestyle changes that the treatment recommends.

Non-adherence can lead patients to personal hardship, allowing their disease to progress and decrease their quality of life. In addition, non-adherence to medical advice has a deep impact on modern healthcare and society, creating roadblocks at all levels of healthcare systems and raising the costs of treatment. Yet conventional healthcare systems do little to push away those hurdles, and seldom invest in better ways to achieve therapy adherence.

This is an excellent time to marshal such an investment. Baby boomers are reaching retirement age. As a result, the labor market will tighten and wage inflation could
become more widespread. Both in the industrialized world and in emerging economies, average population age is increasing. These positive developments are accompanied by a rising prevalence of the chronic diseases associated with aging. Therapy adherence is particularly important with these health conditions.

Therapy adherence matters for the working-age population, too. The impact of adherence is heightened, given the onset of many chronic diseases early in life and fact that people are retiring later in life. Treatment can allow many people afflicted by chronic conditions to stay in the workplace or return to work after a phase of healing. Adherence to medical recommendations improves and maintains well-being in this group. Taken together, all these factors add up to an urgent call to address adherence.

Improved adherence is often associated with better health outcomes for individual patients. Therapy adherence strategies also represent a good way to achieve significant cost savings within the healthcare system, which affects the wider economy. For example, having fewer hospital admissions lessens overall healthcare expenditures. The price of illness-related productivity loss is steep. The cost of lost productivity to society is at least as significant as the medical costs associated with these chronic diseases. This study shows that adherence strategies can be fiscally responsible, high-leverage investments (see Methodology section, page 15).

Some may feel that identifying the need for improved adherence will stigmatize patients. But research suggests that it helps patients see that they will benefit from this behavior, as will the society in which they live. The analysis reveals a striking win-win situation.

Taking into account the variability across disease types and countries studied, the projected productivity loss of non-adherence is massive: The annual productivity losses from the diseases studied reach €28 billion to €50 billion in the U.K., €38 billion to €75 billion in Germany, and €9 billion to €13 billion in the Netherlands. At the same time, feasible productivity gains from these strategies are large: For the diseases we studied, investing in the large-scale adoption of therapy adherence strategies may offer gains of €8 billion to €19 billion in the U.K., €10 billion to €20 billion in Germany, and €2 billion to €4 billion in the Netherlands. In effect, these gains in adherence allow countries to recapture part of the overall productivity loss associated with these diseases—a significant social and economic benefit.

Employees gain directly from improved health. Employers and policymakers win, too. This analysis shows the dimensions of possible gains that can be applied globally, across the spectrum of diseases. Given the economic situation, it is an attractive time to pursue the benefits that therapy adherence offers.

NON-ADHERENCE IS A UNIVERSAL CHALLENGE

Unfortunately, formidable hurdles stand in the way of improving the rate of therapy adherence. On average, across diseases, between 20 and 30 percent of patients don’t follow at least some significant part of the medical recommendations to which they
agreed. To be sure, there is a great deal of variation from one disease to the next. But considering the consequences of non-adherence, the overall rate is troubling (see Exhibit 1).

What leads people not to take medication or adhere to other types of therapeutic guidelines? The reasons for non-adherence are multiple, varying among diseases and among different patient groups, and changing over time for individual patients. As Leslie Martin and colleagues point out in their book *Health Behavior Change and Treatment Adherence* (Oxford University Press, 2010), non-adherence can be caused by a lack of information, a lack of motivation, or inadequate strategies.

Information that does not reach the patient is a factor highlighted in many studies. Patients may misunderstand the “why and how” of a treatment scheme—the rationale and reasoning that underlies it. Healthcare providers can easily overestimate how much information patients grasp in the often emotionally charged setting of a physician's office. People battling multiple chronic diseases might be overwhelmed by conflicting advice and the sheer number of medical recommendations.

Another factor is motivation. Some patients lose interest because the benefits of adherence typically emerge only over the longer term. It is easy to procrastinate, and to think, “I will start exercising tomorrow.” In addition, the side effects of medication and treatment can severely compromise a patient’s resolve to adhere to recommendations. Often, a patient lacks a sense of how his or her health condition will change over the course of a lifetime.

**Exhibit 1**

*Non-Adherence Rates for Various Diseases*

<table>
<thead>
<tr>
<th>Average</th>
<th># of studies</th>
<th>Example conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep disorders</td>
<td>16</td>
<td>Sleep apnea</td>
</tr>
<tr>
<td>Diabetes</td>
<td>23</td>
<td>Diabetes I, II, and III</td>
</tr>
<tr>
<td>Pulmonary diseases</td>
<td>41</td>
<td>Asthma, CF, COPD</td>
</tr>
<tr>
<td>Renal disease</td>
<td>20</td>
<td>Renal transplant</td>
</tr>
<tr>
<td>Eye disorders</td>
<td>15</td>
<td>Glaucoma</td>
</tr>
<tr>
<td>Infectious disease</td>
<td>34</td>
<td>TB, celiac disease, malaria</td>
</tr>
<tr>
<td>OB-GYN</td>
<td>19</td>
<td>Pregnancy, breast abn.</td>
</tr>
<tr>
<td>Blood disorders</td>
<td>7</td>
<td>High cholesterol</td>
</tr>
<tr>
<td>ENT and mouth disorders</td>
<td>30</td>
<td>Otitis media, strep throat</td>
</tr>
<tr>
<td>Cardiovascular diseases</td>
<td>129</td>
<td>HBP, MI, angina, bypass</td>
</tr>
<tr>
<td>Skin disorders</td>
<td>11</td>
<td>Burns, actinic keratoses</td>
</tr>
<tr>
<td>Genitourinary &amp; STDs</td>
<td>17</td>
<td>Herpes, incontinence</td>
</tr>
<tr>
<td>Seizures/ brain disorders</td>
<td>9</td>
<td>Seizure, epilepsy, stroke</td>
</tr>
<tr>
<td>Cancer</td>
<td>65</td>
<td>Breast, lung, leukemia</td>
</tr>
<tr>
<td>Gastrointestinal disorders</td>
<td>42</td>
<td>PUD, H. pylori</td>
</tr>
<tr>
<td>Arthritis</td>
<td>22</td>
<td>RA, rheumatic fever</td>
</tr>
<tr>
<td>HIV disease</td>
<td>8</td>
<td>Infection, inflammation</td>
</tr>
</tbody>
</table>

Note: Meta-analysis of international studies; the definition of non-adherence differs by study.

Source: Variations in Patients’ Adherence to Medical Recommendations (DiMatteo, 2004); Booz & Company
A third factor is the context of a patient’s daily life, including the availability of support modes. Even patients who appreciate necessary treatment recommendations and are highly motivated may slip out of compliance. Treatment schemes can easily disrupt their professional and personal lives. Patients may experience social pressure to engage in activities that interfere with medical recommendations. Work pressure or family activities may conflict with some of the therapeutic priorities. Coaching, e-health tools, flexibility in work schedules and locations, and other measures can help people in these circumstances fit adherence into their daily lives. Yet support tools may either not be available or not be endorsed by professional caregivers.

An extensive review by The Cochrane Collaboration, a healthcare research network, suggested that results from interventions to improve therapy adherence are mixed. Results vary depending upon the conditions, the patient populations and the type of interventions.

Researchers have documented numerous classes of useful interventions that address adherence (see Exhibit 2).

**Exhibit 2**
**Successful Measures in Therapy Adherence—Selected Examples**

- **Adherence can be improved**

  Studies show that patients receiving education about depression increase adherence to medication from 33 to 66 percent. In diabetes and hypertension treatment, electronic prescriptions increase the pickup rate (the rate at which patients fill their prescriptions) by 10 to 15 percent compared with their paper equivalents. Pharmacist interventions improve medication adherence by 15 to 20 percent.

- **Higher adherence means better health outcomes**

  Education sessions improve adherence for hypertensive patients by 37 percent and reduce blood pressure by 20 to 25 mm Hg. Self-management sessions delivering asthma education and advice on handling attacks reduce hospitalizations by 90 percent. Coaching and patient networks reduce hospitalization rates in diabetes patients by 44 percent.

- **Better adherence lowers costs**

  Higher adherence reduces average yearly healthcare expenditures for diabetics by up to 50 percent. Annual total care spend in hypertensive treatment-adherent patients is US$3,800 less than in non-adherent patients. Education sessions on adherence and methods to prevent asthma attacks reduced emergency room visit costs per person per year by 60 percent.

**Sources:**


The complete source list can be found in the appendix, page 16.
THE STAKEHOLDERS’ VIEW

Although interventions that improve adherence have been successful in small settings, they have failed to generate success on a larger scale. These initiatives cannot work without specifically addressing the needs of stakeholders.

Numerous stakeholders are in play. Patients, employers, the government, and health payors can gain significantly with increased therapy adherence, but their influence may be limited. Health service providers, meanwhile, have more influence than anyone else over therapy adherence, but they face a dilemma. They lack an operating model for improving adherence, and they may actually face disincentives for promoting improvement. Classic business models, which are geared toward diagnosis and treatment selection, do not support adherence. Professionals treat patients without an explicit focus on adherence. Financial incentives for providers also discourage therapy adherence, because initiating treatment is more highly rewarded than monitoring treatment adherence.

Communicating therapy requirements to patients requires time that healthcare providers usually do not have. For example, the task of calling a patient to ensure he or she took a pill or the extra effort of having a patient come in for follow-up visits is typically under-compensated or unrewarded.

Payors clearly stand to gain when more patients adhere to proposed treatment, but the business case may be risky. Here, as with individual gains, the benefits are demonstrable but take time to appear. A patient who better adheres to therapy will need fewer hospital admissions and is less costly to treat in the long run. However, treatment costs can run higher in compliant patients, because they may use more medication and need to see their doctor more frequently in the short term. These short-term costs clash with the payors’ need to work with tight year-to-year budgets. The short-term cost of therapy adherence strategies can easily turn out higher than planned, whereas long-term gains are notoriously difficult to capture. Therapy adherence programs can exceed budgets if they attract patients who do not need adherence support. Skepticism abounds when it comes to projected long-term cost savings in this area, because illness complications can be delayed, but usually not avoided. Furthermore, a positive business case on a per-patient basis does not guarantee positive macro-level results. Even if savings are realized on a per-patient basis, hospitals may reallocate saved resources to the treatment of other patients, obscuring any macro benefits.

The contrast between long-term gains and short-term hurdles also makes it difficult to pass legislation or institute policies to promote therapy adherence. Calculating the extent of productivity losses to capture improvement potential is not straightforward. In the absence of precise numbers, policymakers are less willing to invest in what does not explicitly advance short-term budget goals. Yet a rise in productivity is highly attractive to policymakers, since it reduces welfare payments and increases tax revenues. Improving productivity is especially welcome in European economies, where aging populations are set to drive labor scarcity over the next decade.

For pharmaceutical companies, better therapy adherence delivers revenue increases. Large capital gains from healthcare payors, however, are difficult to come by. Pharmaceutical companies also have limited involvement in primary care.

Employers will spot the productivity gains directly in their bottom line, since healthier employees take fewer sick days. These employees experience less on-the-job slowdown, often referred to as presenteeism, and they run a lower risk of prolonged sick leave or disability.
There is another disconnect between the working world and the world of healthcare that pushes away productivity benefits. In evaluating healthcare decisions, few business cases explicitly refer to productivity benefits. Employers, especially in Europe, have limited means to invest in therapy adherence. Policymakers are often far removed from the healthcare process; typically, there are separate budgets for healthcare and labor, which hides the important linkages between the two realms. In addition, much of the productivity benefits would fall into the private sector. In making the case for different stakeholders, our findings offer a path forward. The cost of not adopting a therapy adherence plan is significant enough to be a solid call to action.

**PRODUCTIVITY BENEFITS: FIVE DISEASES IN THREE COUNTRIES**

Drawing on data for five chronic diseases from the U.K., Germany, and the Netherlands, we evaluated the direct productivity benefits from improving adherence to medical therapy. We looked at hypertension, asthma/COPD, chronic back pain, depression, and rheumatoid arthritis. These diseases represent the impact of chronic conditions on labor productivity, shedding light on therapy adherence more generally and beyond these selected countries.

In the aggregate, these diseases cost billions of euros annually in lost productivity. Because they unfold in different ways, however, their effects should be regarded separately from each other:

- **Hypertension.** High blood pressure is an extremely common risk factor for complications such as stroke and heart attacks. Complications affect both a patient’s well-being and his or her productivity. Treatment typically consists of medication and physical exercise with a view to preventing complications from this condition.

- **Asthma/COPD.** These highly prevalent respiratory diseases cause episodes of chest tightness, breathing problems, and severe coughing. During attacks and after severe disease progression, the condition strongly affects workplace productivity. Treatment typically involves lifestyle changes (for example, smoking cessation) and medication to prevent attacks and to slow disease progression.

- **Chronic back pain.** This highly common condition in the workforce is less age-driven than, for example, hypertension, but its impact is immediate; it restricts movement and causes pain. Episodes can severely restrict productivity for extended periods. The causes of chronic back pain are generally poorly understood, which limits effective medical treatment. Therapy takes many forms and typically involves maintaining activity and controlling pain.

- **Depression.** Depression is a condition that often afflicts working-age people. Episodes strongly, but often temporarily, impact labor productivity. Treatment focuses on preventing these episodes, offering guided recovery and coping strategies.

- **Rheumatoid arthritis.** RA is an attack of the immune system on itself. This inflammation causes skin redness and intense joint pain. The disease severely restricts labor productivity and frequently leads to work disability. Side effect management is a key challenge in RA treatment.

To present a macro view of therapy adherence, we have integrated statistics and evidence from scientific studies of all five chronic diseases into a health economics model. The
results provide an assessment of the available data and point toward appropriate actions. We recognize the uncertainties inherent to our approach. Interventions are not guaranteed to improve adherence, but our analysis offers a compelling picture of the multibillion-euro gain and the large productivity potential of successful interventions. Given the price tag of doing nothing, this study delivers a foundation enabling stakeholders to discuss and chart their course of action.

**THE HIDDEN POTENTIAL OF THERAPY ADHERENCE**

The evaluated chronic diseases drive large productivity losses (see Exhibit 3). Variation in the number of working-age patients, reported disease prevalence, and work disability statistics shape the variation in results between countries. Despite these regional separators, the tally of productivity losses reveals informative patterns.

Among the health conditions, depression and chronic back pain generate the highest productivity losses. With depression, work disability is a large contributor to these figures. With chronic back pain, absenteeism and work disability reach comparable levels. Asthma/COPD and hypertension also drive multibillion-euro productivity losses.

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**Exhibit 3**

**Productivity Losses from Chronic Disease**

![Exhibit 3](image)

Note: Productivity loss is based on work loss due to absenteeism, presenteeism, and work disability; ranges are based on the estimate of number of days of absenteeism, presenteeism, and number of work-disabled people, from different studies and statistics. Source: Booz & Company analysis of multiple studies in peer-reviewed scientific journals (see appendix and supplemental information for details).
Although the numbers on average per patient are relatively modest, disease prevalence is high. The inverse is true for rheumatoid arthritis, which is highly debilitating for an individual patient, but is a much less common condition.

When summarizing cost, we emphasize that the cost of lost productivity to society is at least as significant as the medical cost associated with these chronic diseases (see Exhibit 4). With chronic back pain, we estimate that medical costs contribute 10 to 20 percent of this ailment’s total cost to society. The situation is similar for depression, in which medical costs reach 20 to 30 percent of the total cost. For rheumatoid arthritis and asthma/COPD, the cost of lost productivity makes up a substantial part of the health conditions’ total cost to society. This data shows that investment in the care of the chronically ill will deliver productivity benefits.

Scientific studies document mixed results from interventions aimed at improving therapy adherence. Nonetheless, interventions that increase adherence offer great potential for productivity gains. Researchers have established the positive effect of methods such as showing patients educational videos. These findings support a broader use of these approaches (see Exhibit 5, page 11). Given the wealth of possible interventions, these estimates may even be conservative.

Overall, the results paint a positive picture but also highlight an unfortunate paradox. The stakeholders who would benefit most from these measures have the least influence on increasing therapy adherence. A high-level analysis of the financial implications for employers, pharmaceutical companies, policymakers, payors, and health service providers shows the degree of mismatch between levels of influence in the process and potential gains (see Exhibit 6, page 11).

Exhibit 4
Lost Productivity Is at Least as Important as Medical Costs

<table>
<thead>
<tr>
<th>Condition</th>
<th>Medical Costs</th>
<th>Productivity Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic back pain</td>
<td>10%–20%</td>
<td>80%–90%</td>
</tr>
<tr>
<td>Depression</td>
<td>20%–30%</td>
<td>70%–80%</td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>50%–60%</td>
<td>40%–50%</td>
</tr>
<tr>
<td>Asthma</td>
<td>55%–75%</td>
<td>25%–45%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>70%–80%</td>
<td>20%–30%</td>
</tr>
</tbody>
</table>

Adherence potential also plays out differently for each stakeholder. Employees gain quality of life from improved health. Employers stand to reap the greatest financial gains of all the stakeholders. Improved employee engagement—due to reductions in absenteeism, presenteeism, and work disability—offers direct profit potential. The

Exhibit 5
Potential Productivity Gains in the U.K., Germany, and the Netherlands

<table>
<thead>
<tr>
<th>Disease</th>
<th>United Kingdom</th>
<th>Germany</th>
<th>The Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>4.0–7.0</td>
<td>2.6–5.4</td>
<td>1.2–1.8</td>
</tr>
<tr>
<td>Chronic back pain</td>
<td>2.0–6.0</td>
<td>3.0–5.0</td>
<td>0.6–1.5</td>
</tr>
<tr>
<td>Asthma</td>
<td>1.0–4.0</td>
<td>0.6–4.6</td>
<td>0.1–0.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.0–2.0</td>
<td>3.5–4.0</td>
<td>0.3–0.4</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>0.2–0.3</td>
<td>0.7–1.4</td>
<td>-0.06–0.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>€8–19 Billion</strong></td>
<td><strong>€10–20 Billion</strong></td>
<td><strong>€2–4 Billion</strong></td>
</tr>
</tbody>
</table>

Note: Productivity loss is based on work loss due to absenteeism, presenteeism, and work disability.
Source: Multiple studies in peer-reviewed scientific journals detailed in the appendix, Booz & Company analysis

Exhibit 6
Mismatch Between Influence and Potential Gains for Four Chronic Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Employers</th>
<th>Pharma companies</th>
<th>Policymakers</th>
<th>Payors</th>
<th>Health service providers</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>1,000–1,300</td>
<td>100–150</td>
<td>200–300</td>
<td>0–100</td>
<td>150–200</td>
<td>50–100</td>
</tr>
<tr>
<td>Chronic back pain</td>
<td>700–3,700</td>
<td>0–20</td>
<td>800–1,500</td>
<td>100–150</td>
<td>200–400</td>
<td>200–400</td>
</tr>
<tr>
<td>Depression</td>
<td>900–2,900</td>
<td>0–40</td>
<td>2,300–2,800</td>
<td>0</td>
<td>0</td>
<td>600–800</td>
</tr>
</tbody>
</table>

Source: Multiple studies in peer-reviewed scientific journals detailed in the respective disease section, Booz & Company analysis
second-biggest winners are the policymakers. Cutting down on work disability translates into higher tax revenues as well as fewer disability payments. Pharmaceutical companies can also gain substantially, although the actual numbers will depend on whether patented medication plays a central role in a given disease treatment.

Payors can generally win, but not in the short term. The business case for payors is essentially a trade-off. Improved adherence means incremental treatment costs, which lead to increased payouts for medication and services. The benefits, however, are reduced long-term care costs as disease progression is slowed and patients experience fewer complications and recurrent episodes.

In most cases, health service providers will not register a financial gain. Therapy adherence lowers revenue by reducing the number of profitable treatments. Supporting adherence also increases the need for better and more communication, which reimbursement strategies typically don’t recognize; they pay only for the number of treated patients. Providers who concentrate on therapy adherence among their patients lead themselves to revenue loss. This disincentive suggests why service providers may not be investing in therapy adherence on a large scale. At the same time, we must remember that financial incentives are not health providers’ sole motivator. Doctors are passionate about their patients’s health and often willing to go the extra mile from them, but financial incentives work against them.

In summary, from a financial perspective, healthcare providers, who are the stakeholders closest to patients, stand to lose the most, and the greatest potential for gain rests with those who have the least influence on the process itself (see Exhibit 7).

Exhibit 7
Cost Benefits of Therapy Adherence for Stakeholders

![Cost and Benefits Chart]

Source: Multiple studies in peer-reviewed scientific journals detailed in the appendix, page 16; Booz & Company analysis.
CAPTURING THE POTENTIAL OF THERAPY ADHERENCE

The potential for stakeholders to benefit from therapy adherence is apparent in many additional chronic diseases—for example, in diabetes, heart failure, personality disorders, and multiple sclerosis. Capturing this potential represents an opportunity to leverage social investment.

There is no one single, correct approach to improving therapy adherence. Interventions may include: (1) conducting education sessions with groups of patients, (2) setting up networks of patients who motivate one another, (3) having doctors and nurses handle proactive follow-up, (4) introducing flexibility in work schedules and locations, and (5) using professional and amateur coaches. If an environment is created that promotes these initiatives, and, through incentives, rewards providers for undertaking them, professionals will develop new and better innovative approaches.

We see four levers for eliminating the main barriers to adopting therapy adherence improvement initiatives on a large scale:

- **Create and deploy incentives for doctors, nurses, and patients to integrate therapy adherence in treatment plans, focusing on quality instead of the volume of case services.** Economic incentives will create more room for doctors, nurses, and patients who are passionate about therapy adherence. This will address the barriers of financial disincentives and the difficulty of capturing cost advantages.

  Policymakers and payors can address this lever by introducing fees that compensate providers adequately for monitoring adherence, and by instituting cost-benefit analyses over the full cycle of care (including primary and specialist care). Integrated care programs, which often have a fee-per-patient basis, can create the right institutional environments for therapy adherence. It is also possible to create a fee structure that directly pays providers for spending time on therapy adherence. Key questions for decision makers are:

  - How can maximizing therapy adherence become part of regular care?
  - How can adherence strategies attract the right patients?

- **Increase the role that employers and Social Security administrations play in adherence, aligning health gains with productivity gains.** This approach can help address concerns about fragmented budgets and limited ready-made opportunities to invest. Today, despite the large and mutually reinforcing potential healthcare cost savings and productivity gains, employers and labor policymakers are largely disconnected from therapy adherence. Key questions include:

  - Which diseases should be the initial focus?
  - What is the opportunity for collective insurance agreements? Connecting directly to health payors will allow for gain sharing among payors (lower healthcare costs), employers (higher productivity), and employees (better health).
  - Is there a role for labor unions in negotiating such programs?
  - What is the best way to connect adherence and curative care? Therapy adherence service models will be more successful if linked to regular professional care.
  - What is the best way to connect Social Security and care budgets? Health departments investing in therapy adherence will achieve Social Security budget savings.
• **Explore new service and business models in healthcare that are better equipped to foster improved therapy adherence.** Physicians need tools at their fingertips to enable adherence support for patients who need it. Behavioral considerations can be integrated into medical guidelines without too much additional effort, for example, ensuring that a family member is present for a patient’s key doctor visits.

There is also an opportunity to introduce innovative operating models with alternative approaches that are better equipped to manage therapy adherence. Such models may include social media to actively engage the patient’s social circle and connect patients to one another. They could also include patient networks, patient communities, education centers, and patient coaching. Key questions include:

- What is the best way to align new models with curative care?
- What is the best way to generate scale for patients?

• **Reorient research to evaluate the impact of adherence, study best practices, and optimize incentive models.** Despite many studies, researchers’ understanding of non-adherence remains fragmented. More should be understood about the productivity potential and health benefits. An ongoing systematic evaluation of the effectiveness of different therapy adherence strategies for different patients and diseases can be put to productive use. Research suggests there are variations in the way different patient groups and disease populations receive and respond to interventions. Encouraging adherence for rheumatoid arthritis and COPD is likely to require methods different from those for chronic back pain and depression. Segmented interventions based on the psychological and social profile of the patient may be more effective than one-size-fits-all interventions. Yet the academic insight to date on this subject is limited, and more appreciation of the importance of therapy adherence is needed.

The scientific community can address this through direct funding of therapy adherence research, initiating new studies, and addressing new issues with existing studies. Key questions include:

- How great are the potential productivity benefits for other diseases?
- What incentive schemes work best to encourage therapy adherence?
- What roles do the drivers of non-adherence play? How can these drivers be diminished?
- Which interventions or facets of interventions are most cost-effective?
- Which interventions are most effective for which type of patients?
- How can therapies be optimized for adherence in addition to medical effectiveness?

**CONCLUSION**

Interventions that increase therapy adherence will benefit the patient. In addition, they offer huge potential for productivity gains. The potential plays out differently for each stakeholder, with employers standing to reap the greatest financial gains.

In times of budget deficits, predicted long-term shortages in the labor market, and corporate and governmental belt-tightening, it is powerful to look at the scale of productivity gains from therapy adherence. On a small scale, many measures to put therapy adherence to work have been tested. Within the right environment, they can be scaled up. Implementing these therapy adherence programs on a global scale is a rare
Methodology

We calculated the high-level potential for productivity benefits from therapy adherence in three steps. We considered productivity loss for the selected diseases, calculated productivity gains from improved adherence, and segmented the financial impact on each stakeholder category. We chose multiple diseases to be able to provide a representative picture for a phenomenon that is likely to hold true for other diseases, as well.

• What is the productivity loss from the selected diseases? We define lost productivity as wage-earning capacity lost due to absenteeism, presenteeism, and work disability. Absenteeism is the result of workdays lost to sick days. Presenteeism is an estimate of a person’s reduced productivity at work due to illness. Work disability risk is the percentage of people with a disease who are fully or partially work-disabled. We calculated the total number of effective productive days lost, by taking into account the prevalence of the diseases in the working age and the national labor participation and employment rates. We multiplied days lost with an average salary level to obtain values for lost earning capacity. We chose a relatively narrow definition of productivity loss, which does not take an employee’s revenue contribution into account. This method also does not include the fact that healthier patients may progress more rapidly in their careers. Productivity benefits may extend to family members and other caretakers, which is another aspect we did not include. For the purposes of this study, lost productivity is based on international research and regional statistics on absenteeism, presenteeism, and work disability. Due to the restricted availability of reliable and consistent data, precise figures may not be attainable, but the numbers are important indicators.

• What are the productivity gains from improved adherence? We compiled published peer-reviewed scientific studies that establish a plausible relationship between improved adherence as a result of deliberate interventions and productivity benefits. To assess the total potential, we extrapolated these results to the full patient population in the workforce. These figures are estimates and serve as informative, directional indicators. Individual studies show relatively wide result ranges. These differences may relate to differences between countries, the variety of intervention types, and publication bias. Our calculations reflect the full-scale potential of results that could be realized.

• What are the financial implications for stakeholders? As a last analytical step, we assessed the financial implications for individual stakeholders. Not only is the benefit potential meaningful to society, but the incentives for the individual stakeholders drive the opportunities for a large-scale rollout of initiatives to improve therapy adherence.
APPENDIX: SOURCES


Robert Koch Institut, Beiträge zur Gesundheitsberichterstattung des Bundes, Daten und Fakten: Ergebnisse der Studie, Gesundheit in Deutschland aktuell, 2009.


DATA SOURCES INCLUDE:

UK Statistics for caseloads and average weekly payments for IB/SDA, ESA, and DLA 2011, Rijksinstituut voor
Volksgezondheid en Milieu Netherlands, German Statistical Office.

Average disorder prevalence rates of Austria 2006/07, Australia 2007, Denmark 2005, Norway 2008, United Kingdom

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calculations based on national health surveys for disorder prevalence, and Eurobarometer 2005 for treatment rates.

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Review studies from Cooper et al. are Meenal et al. 1978, Lubeck et al. 1986, Clarke et al., 1983–89 and 1990–94,
Spitz 1984.
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