

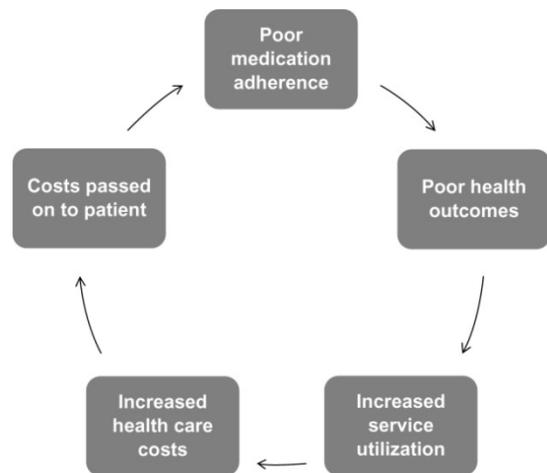
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Treatment adherence: The most important unmet need in healthcare

Alcimed, an innovation and new business consulting firm, looks at the causes and consequences of non-adherence to medications and stresses the necessity to develop efficient solutions to what is arguably the most important unmet need across the entire healthcare ecosystem.

September 29, 2016. “Improving patient adherence to long-term therapies would be more beneficial than any biomedical progress,” said the World Health Organization (WHO) over a decade ago.¹ The strength of this statement is much more compelling than it seems: poor adherence to efficacious medications leads to considerable morbidity, mortality, and avoidable health care costs. Studies show that patients with chronic illnesses still adhere to only 50-60% of medication. Approximately 125,000 deaths per year in the United States are due to medication non-adherence,² and between 33% and 69% of medication-related hospital admissions in the US are due to poor adherence.³

In terms of health economics, medication non-adherence is estimated to cost \$100-\$300 billion in the US, representing 3-10% of total US healthcare costs.⁴ It is generally accepted that pharmaceutical companies lose \$30 billion annually due to non-adherence, and some estimate the number to be as high as \$956 billion globally.⁵



Why don't we adhere to our treatments?

Historically, non-compliance was used in lieu of adherence. However, recent developments in the field have moved away from the usage of the term *compliance* due to its paternalistic connotation, to favor *adherence*. Adherence to long-term therapies can encompass multiple factors, the three main ones being:

1. **Non-fulfillment:** A patient never fills prescription written by the providers.
2. **Non-conforming:** The variety of ways in which medications are not taken as prescribed, which can range from skipping doses, to taking medication at incorrect times, or at incorrect doses, *etc.*
3. **Non-persistence:** A patient decides to stop taking a medication after starting it, without being advised by a health professional to do so.

“Despite the categorization, the underlying causes of non-adherence across the three types of non-adherence often stem from the same factors,” says Antonin Dura, Alcimed Project Manager in Princeton. The WHO has identified five dimensions of medication adherence across all therapeutic areas: factors can be therapy-related, patient-related, condition-related, socio-economic, and/or due to the broader healthcare system.

¹ World Health Organization 2003. Adherence to long-term therapies: Evidence for action.

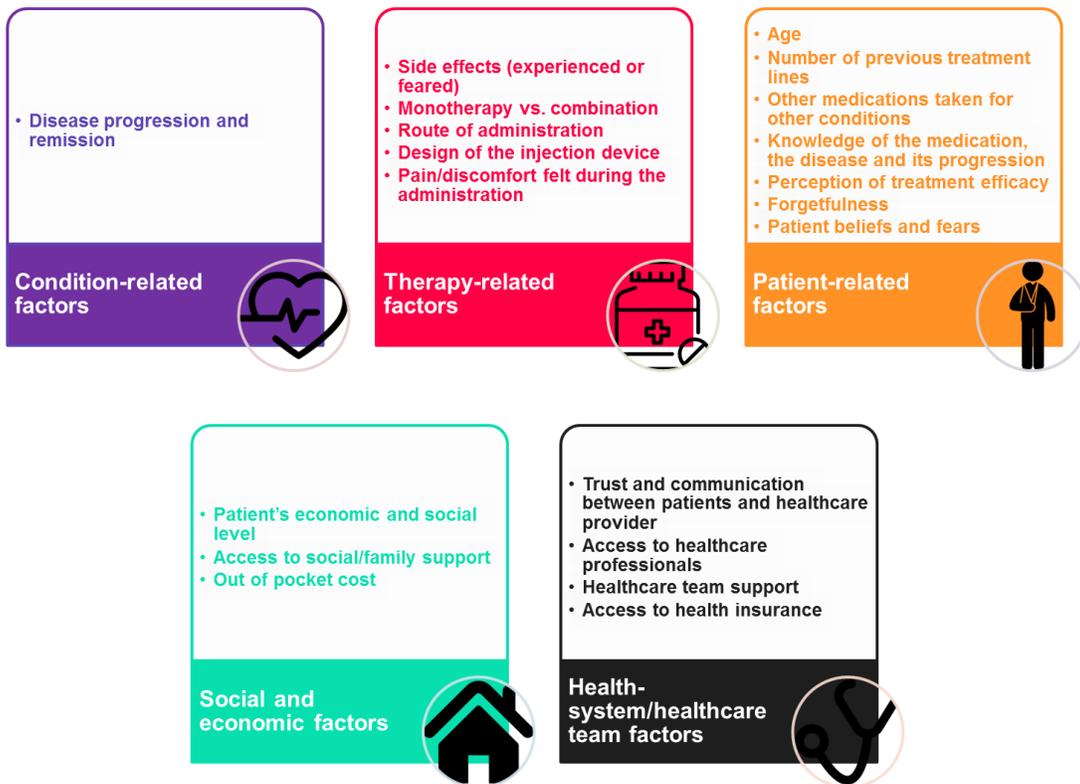
² McCarthy R. The Price You Pay for the Drug Not Taken. *Business Health*. 1998;16:27–33.

³ Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med*. 2005 Aug 4;353(5):487–497.

⁴ Iuga et al, *Risk Manag Healthc Policy*. 2014; 7: 35–44.

⁵ Tierney, L. Patient non-adherence costs underestimated. *Healthcare Packaging* 2013.

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Developing effective solutions to improve adherence is the next frontier for the healthcare ecosystem.

Given the stakes for the patients, healthcare professionals, hospitals, and insurers, a pharmaceutical company that develops innovative solutions to solve the non-adherence problem will be immediately differentiated. To add to the complexity of the problem, variations exist among countries and therapeutic areas. As a consequence, pharmaceutical companies need to identify the gaps and come up with a master plan and local adaptations. Many pharmaceutical companies already offer solutions to promote adherence in their efforts to put the patient at the center, including behavioral coaching. Unfortunately, it is hard to say whether the needle is moving as adherence and its outcome are extremely difficult to measure, in particular when the patient is at home. Often we only rely on patient-filled questionnaires.

“It is the perfect place for disruption, and I wouldn’t be surprised to see new entrants – notably digital players – reshape the value chain in the near future and take the place closest to the patients. For example, smart devices at the patient’s home could collect data from connected injectors or pill boxes, remind to take the treatment, monitor adherence, and transmit data back to prescribers, pharmacists, or family members,” says Antonin Dura. The ability for pharmaceutical companies to implement long-term solutions, such as devices they already use to collect data from patients throughout clinical trials, e.g. platforms for tracking each time a pill bottle is opened and sending customized alerts when a dose is missed, will give them a sustainable advantage for the decades to come.

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About Alcimed

ALCIMED (www.alcimed.com) is an innovation & new business consulting firm, specialized in life sciences (healthcare, biotech, agri-food), chemicals, materials, energy; as well as aeronautics, space & defence. ALCIMED relies on a team of 180 highly-skilled individuals to help its clients with exploring and developing their uncharted territories, covering four key areas: New Technologies, Market Innovation, High-Growth Geographies, and Strategic Foresight. ALCIMED is headquartered in Paris and has offices in Lyon & Toulouse in France, in Germany, Belgium, Switzerland, the UK, the USA and in Singapore.