

# Home-based oncology care: Benefits, challenges, and future directions

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10.56238/rcsv14n5-012

## ABSTRACT

Home-based oncology treatment is transforming cancer care by providing an effective alternative to traditional hospital-based approaches, focusing on patient comfort, personalized care, and improved adherence to treatment plans. Research demonstrates that home-based programs enhance the quality of life for cancer patients by allowing them to remain in familiar surroundings, reducing stress, and promoting better overall well-being. Studies like those by Bordonaro et al. (2014) and Cool et al. (2021) show significant improvements in physical functioning, symptom management, and patient satisfaction, while also highlighting that fewer hospital visits and more personalized care contribute to better adherence to prescribed treatments. However, the effectiveness of these programs is influenced by the specific components and methods of delivery. For instance, while the "Active Home Care" initiative reported positive outcomes in quality of life and adherence, the "Cancer Home-Life Intervention" did not achieve substantial improvements, suggesting a need for more tailored interventions. Home-based multidimensional survivorship programs offer short-term benefits but have uncertain long-term impacts, indicating a need for further investigation. Additionally, the review by Hwang et al. (2023) shows that home-based supportive care (HbSC) programs can improve quality of life, particularly in social and emotional functioning, but their effectiveness varies depending on program components. Despite these benefits, challenges such as the need for adequate home infrastructure, caregiver training, and strong coordination among healthcare professionals persist. Effective communication and rigorous monitoring are crucial to overcoming these obstacles and ensuring the quality and safety of care. Overall, while home-based oncology treatments hold great promise for enhancing patient outcomes, more research is needed to refine these interventions, assess their long-term effectiveness, and determine their cost-efficiency, ultimately optimizing their potential to benefit a wider range of cancer patients.

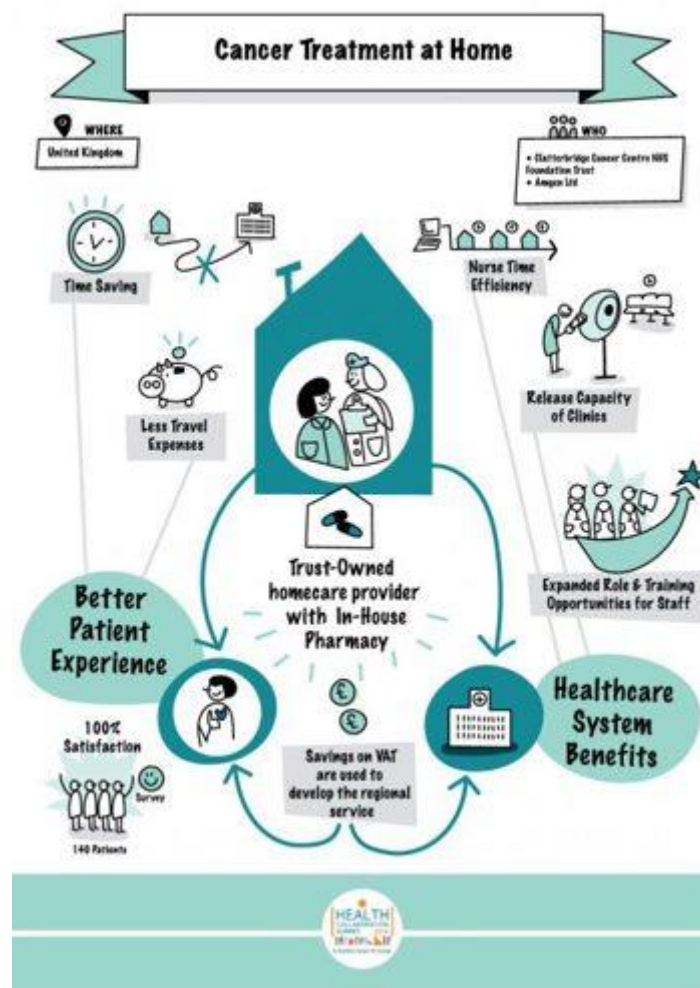
**Keywords:** Home-Based Oncology, Quality of Life, Cancer Care, Treatment Adherence, Supportive Care Programs.

## INTRODUCTION

Home-based oncology treatment has emerged as a valuable alternative to traditional hospital care, offering substantial benefits in terms of both quality of life (QoL) and treatment adherence. This shift is driven by an increasing demand for personalized care that enhances patient comfort. One major advantage of home-based treatment is the improvement in QoL; patients can remain in their familiar surroundings, maintain daily routines, and stay close to loved ones, which helps alleviate the stress and anxiety often associated with cancer treatment. Furthermore, home-based care allows for a tailored approach that meets individual patient needs, thereby boosting overall satisfaction with the treatment.

Adherence to treatment also benefits significantly from the home-based model. The flexibility it offers enables patients to follow their prescribed treatment plans more closely. Reducing the need for frequent hospital visits—which can be a significant barrier to adherence, particularly for those facing logistical or physical challenges—home-based care often includes continuous monitoring by healthcare professionals, facilitating timely adjustments to treatment as needed and improving health management.

Figure 1: Cancer treatment at home. Source: European Federation of Pharmaceutical Industries and Associations.



However, there are challenges to this approach that must be addressed. Ensuring that homes are equipped with the necessary infrastructure, providing caregiver training, and coordinating among healthcare professionals are crucial for the success of home-based care. Effective monitoring and communication between the healthcare team and patients are essential to manage potential complications and ensure the treatment is executed as planned.

Several studies highlight the efficacy of home-based oncology treatments. For instance, Bordonaro et al. (2014) assessed the "Active Home Care" initiative, which involved home visits by nurses and bi-weekly evaluations by oncologists. This study found significant improvements in patients' physical functioning and symptom management, reduced visits to cancer facilities, and high patient satisfaction. Cheng et al. (2017) reviewed the impact of home-based multidimensional survivorship programs on breast cancer survivors and found short-term benefits in QoL and reductions in anxiety and fatigue, although long-term effects remained uncertain. Bates-Fraser et al. (2023) explored home-based exercise for breast and prostate cancer survivors and noted small improvements in QoL, physical activity, and cardiorespiratory fitness, suggesting this approach is particularly beneficial for those with limited access to supervised facilities.

Additionally, Cool et al. (2021) compared oncologic home-hospitalization (OHH) with standard outpatient care and found that OHH was equivalent to standard care in terms of QoL but offered advantages like fewer hospital visits and reduced waiting times. Patient satisfaction with OHH was high, indicating it as a viable, patient-centered alternative. Conversely, Pilegaard et al. (2018) found that the "Cancer Home-Life Intervention," which aimed to enhance daily activity performance through a brief occupational therapy program, did not show significant improvements in QoL or functional abilities, highlighting the need for further research to refine and assess such interventions.

Finally, Hwang et al. (2023) conducted a systematic review of home-based supportive care programs and found that while some studies reported improvements in various aspects of QoL, the effectiveness varied depending on the components of the programs. The review underscores the necessity for ongoing research to optimize these programs and better meet patient needs.

In conclusion, the growing adoption of home-based oncology treatments represents a significant shift in the landscape of cancer care, driven by the need for more personalized and patient-centered approaches. This model offers notable advantages, including improved quality of life and enhanced treatment adherence. Home-based care allows patients to remain in a familiar environment, reducing the stress and discomfort associated with frequent hospital visits and enabling them to maintain their daily routines. This approach has been shown to positively impact physical functioning, symptom management, and overall satisfaction, as evidenced by studies such as those by Bordonaro et al. (2014) and Cool et al. (2021).

The research highlights the effectiveness of various home-based programs in addressing different aspects of cancer care. For example, the "Active Home Care" initiative demonstrated significant improvements in patients' quality of life and adherence to medication regimens, while the "Cancer Home-Life Intervention" did not show substantial improvements, indicating that the intervention's design and delivery need refinement. Similarly, home-based multidimensional survivorship programs showed short-term benefits but revealed uncertainties regarding long-term impact, emphasizing the need for ongoing evaluation.

Moreover, the review by Hwang et al. (2023) underscores that home-based supportive care (HbSC) programs, which include components like home visits, patient and caregiver education, and psychological support, can enhance patients' quality of life. However, the effectiveness of these programs varies depending on their specific components, suggesting that customization and careful implementation are crucial.

Despite these positive outcomes, challenges persist in the home-based oncology model. Key issues include the need for appropriate home infrastructure, effective caregiver training, and robust coordination among healthcare professionals. Ensuring rigorous monitoring and communication is essential to address potential complications and maintain the quality of care.

In summary, while home-based oncology treatments offer a viable and beneficial alternative to traditional hospital-based care, further research is needed to optimize these interventions. Future studies should focus on refining program components, assessing long-term effectiveness, and exploring cost-efficiency. By addressing these areas, home-based care can be better tailored to meet the needs of cancer patients, particularly those in remote areas or with limited access to healthcare facilities, ultimately enhancing their overall well-being and treatment outcomes.

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