



April 2017 – SUPPORT Summary of a systematic review

# Does home-based care reduce morbidity and mortality in people living with HIV/AIDS?

Home-based care is used in many countries to promote quality-of-life and to limit hospital care, especially where public health services are overburdened.

## Key messages

### → Intensive home-based care delivered by nurses to people living with HIV and AIDS:

- probably improves their knowledge about HIV and about HIV medications and may improve adherence to medication
- probably leads to little or no difference in their CD4 counts and viral loads and may improve their physical functioning

### → Multi-professional team care in the home, compared with usual care by primary care nurses, may lead to little or no difference in the quality of life, time in care or survival of people living with HIV and AIDS.

### → Information, communication and decision support via a computer in the homes of people living with AIDS may lead to little or no difference in health status, and decision making skills and confidence but may slightly reduce people's social isolation and improve their quality of life.

### → It is uncertain whether exercise at home improves the physical functioning, well-being, body composition measures or biochemical measures of people living with HIV and AIDS.

### → Home-based safe water systems probably reduce the frequency and severity of diarrhoea among people living with HIV and AIDS.



## Who is this summary for?

People making decisions concerning home-based care in people living with HIV/AIDS

### ! This summary includes:

- **Key findings** from research based on a systematic review
- **Considerations about the relevance of this research** for low-income countries

### X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

## This summary is based on the following systematic review:

Young T, Busgeeth K. Home-based care for reducing morbidity and mortality in people infected with HIV/AIDS. Cochrane Database Syst Rev. 2010(1):CD005417.

## What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies

**SUPPORT** was an international project to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries, funded by the European Commission (FP6) and the Canadian Institutes of Health Research.

**Glossary of terms used in this report:**  
[www.supportsummaries.org/glossary-of-terms](http://www.supportsummaries.org/glossary-of-terms)

**Background references on this topic:**  
See back page

# Background

Despite the increased use of antiretroviral treatment, hospital admissions continue to be problematic for those living with HIV/AIDS. Home-based care is increasingly used as a key management strategy, especially in countries in which public health services are overloaded and human and financial resources for health are limited.

Home-based care has been defined as the provision of care at a person's home in order to supplement or replace hospital care. The goal of home-based care is to provide people with the best possible quality of life. The care they receive may include medical management, counselling and teaching, and physical, psychosocial, palliative and social support.

There are various models of home-based care, including: *integrated care* (in which care is provided as part of a multi-professional/interdisciplinary care management system); *single service care* (in which care is provided by one organisation), and *informal care* (in which there is no formal support structure for the care provided).

In this review, home-based care also included training people living with AIDS in the use of a computer-based system to provide information, communication and support in their homes.

## How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low-income countries. The methods used to assess the reliability of the review and to make judgements about its relevance are described here:

[www.supportsummaries.org/how-support-summaries-are-prepared/](http://www.supportsummaries.org/how-support-summaries-are-prepared/)

## Knowing what's not known is important

A reliable review might not find any studies from low-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

A lack of evidence does not mean a lack of effects. It means the effects are uncertain. When there is a lack of evidence, consideration should be given to monitoring and evaluating the effects of the intervention, if it is used.

## About the systematic review underlying this summary

**Review objective:** To assess the effectiveness of home-based care to reduce morbidity and mortality in people with HIV/AIDS.

Types of	What the review authors searched for	What the review authors found
<b>Study designs &amp; Interventions</b>	Randomised and non-randomised trials of home-based care, provided by family, lay and/or professional people, including all forms of treatment, care and support	11 randomised trials: home-based nursing compared with usual care (3); multi-professional team compared with an independent primary nurse (2); computer-based information compared with brochures or usual care (2); home total parenteral nutrition compared with dietary counselling (1); home-based water chlorination and safe storage compared with education only (1); home-based exercise programme compared with usual care (2)
<b>Participants</b>	Male and female individuals living with HIV, including adults and children	10 trials included both men and women, and one trial included children only.
<b>Settings</b>	Homes of people living with HIV and AIDS	All interventions were delivered in the homes of people living with HIV and AIDS in communities in the United States of America (USA) (9), France (1) and Uganda (1). In addition, two ongoing trials in Uganda were identified.
<b>Outcomes</b>	<i>Primary outcomes:</i> progression to HIV/AIDS, death. <i>Secondary outcomes:</i> psychosocial outcomes, quality of care, quality of life, number of inpatient days, number and type of opportunistic infections	<i>Primary outcomes:</i> viral load and CD4 counts; level of function; and health status, including physical functioning and well-being, changes in body composition (e.g., weight, waist circumference), biochemical measures.  <i>Secondary outcomes:</i> a range of outcomes were measured including people's knowledge of HIV and medications; emotional distress and health-related quality of life; costs; risk behaviours; and health service utilisation

**Date of most recent search:** September 2008

**Limitations:** This is a well-conducted systematic review with only minor limitations.

Young T, Busgeeth K. Home-based care for reducing morbidity and mortality in people infected with HIV/AIDS. Cochrane Database Syst Rev. 2010(1):CD005417.

# Summary of findings

The review included 11 studies from 3 countries, addressing the following interventions and comparisons:

1. Home-based nursing compared with standard care
2. Multi-professional team care compared with independent primary nurse care
3. Information, communication and decision support via a computer in the homes of people living with AIDS compared to information provision via printed brochures and monthly telephone calls/no intervention
4. Exercise at home compared with no exercise at home
5. Home-based water chlorination and safe storage compared to education only
6. Home total parenteral nutrition compared with dietary counselling

The last comparison is not discussed in this summary as it is of low relevance to the current care of people living with HIV and AIDS.

## 1. Home-based intensive nursing compared with standard care

Three studies evaluated this comparison. The focus of the home-based nursing care varied from supporting adherence to treatment (2 studies) to more general life skills and self-care (1 study).

- **Home-based intensive nursing care probably improves knowledge about HIV and about HIV medications among people living with HIV and AIDS. The certainty of this evidence is moderate.**
- **Home-based intensive nursing care may improve adherence to medication among people living with HIV and AIDS. The certainty of this evidence is low.**
- **Home-based intensive nursing care probably leads to little or no difference in CD4 counts or viral loads among people living with HIV and AIDS. The certainty of this evidence is moderate.**
- **Home-based intensive nursing care may improve physical functioning among people living with HIV and AIDS but may lead to little or no difference in overall functioning, depressive symptoms, mood and general health. The certainty of this evidence is low.**

### About the certainty of the evidence (GRADE) \*



**High:** This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different<sup>†</sup> is low.



**Moderate:** This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different<sup>†</sup> is moderate.



**Low:** This research provides some indication of the likely effect. However, the likelihood that it will be substantially different<sup>†</sup> is high.



**Very low:** This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different<sup>†</sup> is very high.

\* This is sometimes referred to as 'quality of evidence' or 'confidence in the estimate'.

<sup>†</sup> Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Effect of home-based intensive nursing care compared with standard care				
<b>People</b>	People living with HIV/AIDS			
<b>Settings</b>	Community			
<b>Intervention</b>	Home-based intensive nursing care			
<b>Comparison</b>	Standard care			
Outcomes	Mean score / Impact		Number of participants (Studies)	Certainty of the evidence (GRADE)
	Without home-based care	With home-based care (95% CI)		
<b>Patient knowledge about HIV and their HIV medications</b>	24 out of 28 points	2.5 point improvement (2.1 to 2.9 improvement) in post-test scores of knowledge of HIV and their medications	37 (1 study)	⊕⊕⊕○ Moderate
<b>Adherence to HIV medication</b>	Home-based intensive nursing care may improve adherence to medication among people living with HIV and AIDS		208 (2 studies)	⊕⊕○○ Low
<b>Health status – HIV and AIDS</b>	Home-based intensive nursing care probably leads to little or no difference in CD4 counts or viral loads among people living with HIV and AIDS		208 (2 studies)	⊕⊕⊕○ Moderate
<b>Health status – physical functioning, overall functioning, depressive symptoms, mood and general health</b>	Home-based intensive nursing care may improve physical functioning among people living with HIV and AIDS but may lead to little or no difference in overall functioning, depressive symptoms, mood and general health		109 (1 study)	⊕⊕○○ Low
GRADE: GRADE Working Group grades of evidence (see above and last page)				

## 2. Multi-professional team care compared with independent primary nurse care

Two studies evaluated this comparison. In both studies the multi-professional team provided interdisciplinary care that addressed a range of needs.

→ **Multi-professional team care in the home, compared with usual care by primary care nurses, may lead to little or no difference in the quality of life, time in care or survival of people living with HIV and AIDS. The certainty of this evidence is low.**

## 3. Information, communication and decision support via a computer in the homes of people living with AIDS compared to information provision via printed brochures and monthly telephone calls or no intervention

Two studies evaluated this comparison. In one study, the provision of information, communication and decision support via a computer in the homes of people living with AIDS was compared to the provision of information via printed brochures and monthly telephone calls. In a second study, a similar intervention was compared with no intervention.

→ **Information, communication and decision support via a computer in the homes of people living with AIDS may lead to little or no difference in health status, and decision making skills and confidence but may slightly reduce people's social isolation and improve their quality of life. The certainty of this evidence is low.**

## 4. Exercise at home compared with no exercise at home

Two studies evaluated this comparison. One study compared a 20-minute workout on a fitness machine brought by a nurse or trainer three times per week to visits focused on data collection and social contact. A second study compared a supervised home-based exercise programme to no intervention.

→ It is uncertain whether exercise at home improves the physical functioning, well-being, body composition measures or biochemical measures of people living with HIV and AIDS because the certainty of this evidence is very low.

## 5. Home-based water chlorination and safe storage compared to education only

One study evaluated this comparison.

→ Home-based safe water systems probably reduce the frequency and duration of diarrhoea among people living with HIV and AIDS. The certainty of this evidence is moderate.

Home-based water chlorination and safe storage and education compared to education only					
<b>People</b>	People living with HIV/AIDS				
<b>Settings</b>	Community				
<b>Intervention</b>	Home-based water chlorination and safe storage and education				
<b>Comparison</b>	Education only				
Outcomes	Impact		Relative effect (95% CI)	Number of participants (Studies)	Certainty of the evidence (GRADE)
	Without home-based care	With home-based care (95% CI)			
<b>Diarrhoea episodes</b>	135 diarrhoea episodes per 100 person years of observation	112 diarrhoea episodes per 100 person years of observation (80 to 127)	RR 0.75 (0.59 to 0.94)	529 (1 study)	⊕⊕⊕○ Moderate
<b>Days with diarrhoea</b>	910 days with diarrhoea per 100 person years of observation	690 with diarrhoea per 100 person years of observation (437 to 855)	RR 0.67 (0.48-0.94)	529 (1 study)	⊕⊕⊕○ Moderate

CI: Confidence interval RR: Risk Ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

# Relevance of the review for low-income countries

→ Findings	▷ Interpretation*
<b>APPLICABILITY</b>	
<b>→ The trials were all conducted in high-income countries, apart from one which was undertaken in Uganda.</b>	<i>▷ The applicability of the available evidence to low-income countries is uncertain because community care may be organised or delivered in different ways in these settings. ▷ The human and financial resources required to deliver home-based care (such as nurses and social workers and transport to people's homes) may not be readily available in low-income countries, and some communities and homes in rural and peri-urban areas may be hard to reach. ▷ The applicability of the available evidence also needs to be considered in relation to the substantial changes in the treatment and care recommended for people living with HIV and AIDS since the included studies were published.</i>
<b>EQUITY</b>	
<b>→ Overall, the included studies provided little data regarding the differential effects of the interventions for the most disadvantaged populations.</b>	<i>▷ Home-based care may help to make care more accessible for poorer people living with HIV and AIDS and those who are less mobile. However, such care could also worsen inequities if it is accessed only by wealthier people or those living in easy-to-reach communities.</i>
<b>ECONOMIC CONSIDERATIONS</b>	
<b>→ Few of the included studies assessed the costs of the interventions and none of the included studies assessed the cost-effectiveness of home-based care, although an additional study indicated benefits†.</b>	<i>▷ There is uncertainty about both the resources required to implement different models of home-based care and the cost-effectiveness of home-based care in low-income countries ▷ The resources needed to implement home-based care should be assessed before this intervention is scaled-up.</i>
<b>MONITORING &amp; EVALUATION</b>	
<b>→ There is limited evidence to guide decisions about the implementation of home-based care for people living with HIV and AIDS in low-income countries.</b>	<i>▷ The effects of home-based care in low-income countries should be evaluated carefully. This should include consideration of the impacts on resource use and on people's access to services and quality of life.</i>

\*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low-income countries. For additional details about how these judgements were made see: [www.supportsummaries.org/methods](http://www.supportsummaries.org/methods)

†See Marseille 2009 (Related literature)

# Additional information

## Related literature

### Systematic review of intervention to improve adherence to antiretroviral treatment:

Mbugabwa L, Sivaramalingam B, Navarro T, Hobson N, Keepanasseril A, Wilczynski NJ, Haynes RB; Patient Adherence Review (PAR) Team. Interventions for Enhancing Adherence to Antiretroviral Therapy (ART): A Systematic Review of High Quality Studies. *AIDS Patient Care STDS*. 2015;29(5):248–66.

### A cost-effectiveness study about home-based provision of antiretroviral therapy in rural Uganda:

Marseille E, Kahn JG, Pitter C, Bunnell R, Epalatai W, Jawe E, et al. The cost effectiveness of home-based provision of antiretroviral therapy in rural Uganda. *Appl Health Econ Health Policy*. 2009;7(4):229–43.

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### Conflict of interest

None declared. For details, see: [www.support-collaboration.org/summaries/coi.htm](http://www.support-collaboration.org/summaries/coi.htm)

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### This summary should be cited as

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## About certainty of the evidence (GRADE)

The “certainty of the evidence” is an assessment of how good an indication the research provides of the likely effect; i.e. the likelihood that the effect will be substantially different from what the research found. By “substantially different” we mean a large enough difference that it might affect a decision. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the study design (randomised trials versus observational studies), factors that reduce the certainty (risk of bias, inconsistency, indirectness, imprecision, and publication bias) and factors that increase the certainty (a large effect, a dose response relationship, and plausible confounding). For each outcome, the certainty of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE: [www.supportsummaries.org/grade](http://www.supportsummaries.org/grade)

## SUPPORT collaborators:

**The Cochrane Effective Practice and Organisation of Care Group (EPOC)** is part of the [Cochrane Collaboration](http://www.cochrane.org). The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries. [www.epocoslo.cochrane.org](http://www.epocoslo.cochrane.org)

**The Evidence-Informed Policy Network (EVIPNet)** is an initiative to promote the use of health research in policymaking in low- and middle-income countries. [www.evipnet.org](http://www.evipnet.org)

**The Alliance for Health Policy and Systems Research (HPSR)** is an international collaboration that promotes the generation and use of health policy and systems research in low- and middle-income countries. [www.who.int/alliance-hpsr](http://www.who.int/alliance-hpsr)

**Norad**, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. [www.norad.no](http://www.norad.no)

**The Effective Health Care Research Consortium** is an international partnership that prepares Cochrane reviews relevant to low-income countries. [www.evidence4health.org](http://www.evidence4health.org)

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