May 2017 – SUPPORT Summary of a systematic review

Does decentralised HIV treatment improve health outcomes?

Many people living with HIV who need antiretroviral therapy are unable to access or remain in care. This is often because of the time and cost required to travel to health centres. One strategy to address this problem is to move antiretroviral delivery from hospitals to more peripheral health facilities or even beyond health facilities. This could increase the number of people with access to care, enhance retention in treatment programmes, improve health outcomes and reduce costs to people living with HIV and AIDS and health services. However, there are some concerns about the quality of decentralised care and whether health outcomes are equivalent to more centralised care.

Key messages

➔ **Partial decentralisation of HIV treatment (starting care at hospital and then moving to health centre care) probably reduces the combined number of people who die or are lost to care at one year, and may reduce the costs of travel for patients.**

➔ **Full decentralisation of HIV treatment (starting and continuing care at a health centre) probably reduces the number of people lost to care but it is uncertain if it reduces deaths at one year.**

➔ **Decentralisation of HIV treatment from facility to community probably leads to little or no difference in the number of people who die or are lost to care at one year.**

➔ **Decentralisation of HIV treatment from facility to community may reduce total costs to people living with HIV and AIDS and to the health service.**

➔ **Most of the included studies were conducted in low-income countries.**

Who is this summary for?

People deciding whether to decentralise HIV treatment to improve health outcomes.

! 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:

Kredo T, Ford N, Adeniyi FB, Garner P. Decentralising HIV treatment in lower- and middle-income countries. The Cochrane database of systematic reviews. 2013;6:CD009987.

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

Background references on this topic: See back page

Background

Although there has been considerable progress in improving access to antiretroviral therapy (ART) to date, global coverage for ART is still around 50% of those eligible for treatment, and 25% of people on treatment are not retained in care within 24 months of initiating ART. Decentralisation of ART care delivery from hospitals to more peripheral health facilities is an important strategy for addressing these problems. Decentralisation of care broadly means relocating services from centralised sites (i.e. hospitals) to peripheral health centres or lower levels of healthcare, generally geographically closer to the homes of people living with HIV and AIDS. Three types of decentralisation can be considered:

- *Partial decentralisation*: starting ART at the hospital, then moving to a health centre to continue treatment.
- *Full decentralisation*: starting and continuing ART at a health centre.
- *Decentralisation from facility to community*: ART is started at a health centre or hospital and thereafter provided in the community. Support for treatment may be provided by a family member, a lay or community health worker or through outreach by a health worker based in a primary healthcare clinic.

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/

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 effects of decentralised HIV care in relation to initiation and maintenance of antiretroviral therapy.

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised and non-randomised trials, controlled before-after studies and well-designed cohort studies assessing any form of decentralised care delivery model for the initiation of ART, continuation of ART, or both.	16 included studies: two cluster trials, two prospective cohorts and 12 retrospective cohort studies. The studies examined partial decentralisation (6 studies), full decentralisation (7), and decentralisation from facility to community (3).
Participants	HIV-infected patients at the point of initiating treatment, and patients already on treatment requiring maintenance and follow-up.	HIV infected patients. Three included children only, two included adults and children and the rest included adults only.
Settings	Community, health centre and hospital settings.	Studies from rural and urban areas in South Africa (4 studies), Malawi (3 studies), Ethiopia (2), Uganda (2), Kenya (1), Swaziland (1), and Thailand (1). One study examined data from five countries in Africa (Kenya, Lesotho, Mozambique, Rwanda and Tanzania).
Outcomes	*Primary*: Lost to care at one year, death, and a composite outcome of both. *Secondary*: Time to starting antiretroviral therapy, new diagnoses of tuberculosis co-infection, virologic and immunologic response to ART, new AIDS-defining illness, patient satisfaction with care, and cost to the provider.	All primary outcomes, virologic and immunologic response to ART, costs to people living with HIV and AIDS and costs to the health service, and patient satisfaction with care.
Date of most recent search: March 2013		
Limitations: This is well-conducted systematic review with only minor limitations.		

Kredo T, Ford N, Adeniyi FB, Garner P. Decentralising HIV treatment in lower- and middle-income countries. The Cochrane database of systematic reviews. 2013;6: CD009987

Summary of findings

16 studies were included in the review. All studies evaluated decentralisation of care and eight also evaluated task shifting from doctors to other types of healthcare providers. Three studies examined treatment in children only, two included adults and children and the rest included adults only.

1) Partial decentralisation: starting ART at the hospital, then moving to a health centre to continue treatment

Four studies considered this option:

➔ **Partial decentralisation probably reduces the combined number of people who die or are lost to care at one year. The certainty of this evidence is moderate.**

➔ **Partial decentralisation may reduce the number of people who are lost to care at one year. The certainty of this evidence is low.**

➔ **Partial decentralisation may reduce death at one year. The certainty of this evidence is low.**

➔ **Partial decentralisation may reduce the cost of travel. 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† is low.

⊕⊕⊕◯
Moderate: This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different† is moderate.

⊕⊕◯◯
Low: This research provides some indication of the likely effect. However, the likelihood that it will be substantially different† 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† is very high.

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

† Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Effect of partial decentralisation compared to usual care on patient outcomes

People HIV patients
Settings Community, health centre and hospital settings
Intervention Partial decentralisation
Comparison Usual care

Outcomes	Usual care	Partial decentralisation	Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Absolute effect (95% CI)			
Death or lost to care (combined) Follow-up: 12 months	218 per 1000	100 per 1000 (63 to 155)	RR 0.46 (0.29 to 0.71)	⊕⊕⊕◯ Moderate
Lost to care Follow-up: 12 months	134 per 1000	74 per 1000 (60 to 93)	RR 0.55 (0.45 to 0.69)	⊕⊕◯◯ Low
Death Follow-up: 12 months	84 per 1000	28 per 1000 (11 to 73)	RR 0.34 (0.13 to 0.87)	⊕⊕◯◯ Low
Cost of travel	Mean 1.5 USD	Mean 0.74 USD	-	⊕⊕◯◯ Low

Margin of error = Confidence interval (95% CI) RR: Risk ratio USD: United States Dollar
GRADE: GRADE Working Group grades of evidence (see above and last page)

2) Full decentralisation: starting and continuing ART at a health centre

Four studies considered this option:

➔ **It is uncertain if full decentralisation reduces the number of people who die or are lost to care at one year as the certainty of this evidence is very low.**

➔ **Full decentralisation probably reduces the number of people who are lost to care at one year. The certainty of this evidence is moderate.**

➔ **It is uncertain if full decentralisation reduces deaths at one year as the certainty of this evidence is very low.**

Effect of full decentralisation compared to usual care on patient outcomes

People HIV patients
Settings Community, health centre and hospital settings
Intervention Full decentralisation
Comparison Usual care

Outcomes	Usual care	Full decentralisation	Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Absolute effect (95% CI)			
Death or lost to care Follow-up: 12 months	365 per 1000	256 per 1000 (172 to 373)	RR 0.7 (0.47 to 1.02)	⨁◯◯◯ Very low
Lost to care Follow-up: 12 months	270 per 1000	81 per 1000 (46 to 146)	RR 0.3 (0.17 to 0.54)	⨁⨁⨁◯ Moderate
Death Follow-up: 12 months	97 per 1000	106 per 1000 (61 to 185)	RR 1.1 (0.63 to 1.92)	⨁◯◯◯ Very low

Margin of error = Confidence interval (95% CI) RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

3) Decentralisation from facility to community: ART is started at a health centre or hospital and thereafter provided in the community

Two studies in adult populations from Kenya and Uganda considered this option.

Decentralisation from facility to community:

➔ **Probably leads to little or no difference in the number of people who die or are lost to care at one year. The certainty of this evidence is moderate.**

➔ **Probably leads to little or no difference in the number of people who are lost to care at one year. The certainty of this evidence is moderate.**

➔ **Probably leads to little or no difference in deaths at one year. The certainty of this evidence is moderate.**

➔ **May reduce total costs to people living with HIV and AIDS and to the health service. The certainty of this evidence is low.**

Effect of decentralisation from facility to community compared to usual care on patient outcomes

People People living with HIV and AIDS
Settings Community, health centre and hospital settings
Intervention Decentralisation from facility to community
Comparison Usual care

Outcomes	Usual care	Decentralisation from facility to community	Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Absolute effect (95% CI)			
Death or lost to care Follow-up: 12 months	106 per 1000	101 per 1000 (66 to 155)	RR 0.95 (0.62 to 1.46)	⨁⨁⨁◯ Moderate
Lost to care Follow-up: 12 months	26 per 1000	21 per 1000 (8 to 57)	RR 0.81 (0.3 to 2.21)	⨁⨁⨁◯ Moderate
Death Follow-up: 12 months	55 per 1000	57 per 1000 (35 to 91)	RR 1.03 (0.64 to 1.65)	⨁⨁⨁◯ Moderate
Total cost to people living with HIV and AIDS*	USD 54/year	USD 18/year	-	⨁⨁◯◯ Low
Costs to the health service^	USD 838 / year / patient	USD 793 / year / patient	-	⨁⨁◯◯ Low

Margin of error = Confidence interval (95% CI) RR: Risk ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

*Transport, lunch, childcare costs, lost work time. Based on data from one study.
^ Staff, transport, drugs, laboratory, training, supervision, capital and utilities costs. Based on data from one study.

Relevance of the review for low-income countries

➔ Findings	▷ Interpretation*
APPLICABILITY	
➔ **14 of the studies included in the systematic review were conducted in low-income countries and 2 in middle-income countries.**	▷ *All but one of the included studies were from Africa. The applicability of the findings to other low-income settings is therefore unclear.* ▷ *The findings may be applicable in settings where a reasonable infrastructure exists for the decentralisation of HIV treatment. This needs to include facilities, referral systems, human resources and supplies.* ▷ *In some countries, obstacles to task shifting or decentralization include regulations governing the work scope of different health workers and the views of labour unions representing health workers.* ▷ *The acceptability of decentralisation to people living with HIV and AIDS and to healthcare providers needs to be considered. Service planners also need to consider the impacts of decentralisation on total costs for both people living with HIV and AIDS and the health service.*
EQUITY	
➔ **There was no information in the included studies regarding the differential effects of the interventions on resource-disadvantaged populations.**	▷ *The resources needed to support decentralised care, and to ensure appropriate referral between levels of care, may be less available in disadvantaged settings.* ▷ *Decentralising care from facilities to the community may improve access to care and outcomes for disadvantaged groups, and thereby improve equity, through reducing total costs to people living with HIV and AIDS and reducing the number of people lost to care.*
ECONOMIC CONSIDERATIONS	
➔ **The systematic review found that decentralisation may reduce total costs to people living with HIV and AIDS and to the health services.**	▷ *Little data on costs were available for different decentralisation options.* ▷ *Different models of decentralising HIV treatment may have different cost impacts for people living with HIV and AIDS and for health services. Care needs to be taken that the costs to individuals are not increased through, for example, higher travel costs or user fees. Local costing studies may be desirable before scaling up these interventions.* ▷ *Decentralisation may lead to changes in the use of healthcare provider time, supplies and laboratory tests at peripheral health facilities, with implications for other services delivered at these sites and for local budgets.* ▷ *The longer term economic consequences of decentralisation are not clear and need to be monitored.*
MONITORING & EVALUATION	
➔ **Two cluster trials, two prospective cohorts and 12 retrospective cohorts contributed data to this review.**	▷ *Large pragmatic trials may be helpful in evaluating some decentralisation options. Where decentralisation is implemented at scale, monitoring may be needed of costs and of impacts on workload, support needs and supply chains at peripheral facilities.*

*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

Additional information

Related literature

Brinkhof MW, Pujades-Rodriguez M, Egger M. Mortality of patients lost to follow-up in antiretroviral treatment programmes in resource-limited settings: systematic review and meta-analysis. PloS one. 2009;4(6):e5790.

Callaghan M, Ford N, Schneider H. A systematic review of task- shifting for HIV treatment and care in Africa. Human Resources for Health. 2010;8:8.

Denno DM, Chandra-Mouli V, Osman M. Reaching youth with out-of-facility HIV and reproductive health services: a systematic review. The Journal of Adolescent Health: official publication of the Society for Adolescent Medicine. 2012;51(2):106-21.

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

This summary was prepared by

Agustín Ciapponi, Instituto de Efectividad Clínica y Sanitaria, Buenos Aires, Argentina

Conflict of interest

None declared. For details, see: www.supportsummaries.org/coi

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The summary should be cited as

Ciapponi A, Does decentralised HIV treatment improve health outcomes? A SUPPORT Summary of a systematic review. May 2017. www.supportsummaries.org

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

SUPPORT collaborators:

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is part of the Cochrane Collaboration. The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries . 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

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

Norad, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. 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

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