

SYSTEMS REFERENCE DELIVERABLE



**Economic evaluation of active assisted living services –
Part 2: Example of use – Monitoring patients with chronic diseases**



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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms, definitions and abbreviated terms	7
3.1 Terms and definitions.....	7
3.2 Abbreviated terms.....	8
4 General.....	9
4.1 Document objective	9
4.2 Economic evaluation process overview	9
4.2.1 Alternate versus Reference Scenario.....	9
4.2.2 Time period for analysis	9
4.2.3 The cost of money	9
4.2.4 The economic or financial indicators.....	9
4.2.5 Multiple Alternate Scenarios	10
4.2.6 Risks and critical success factors	10
4.3 Document structure – the example.....	10
5 Overview of the analysis and results of a remote patient monitoring service	10
6 Description of the AAL Service or Intervention.....	12
7 The non-financial benefits of the AAL service	14
7.1 Overview	14
7.2 Improving the health of the population.....	14
7.3 Improving the patient experience with healthcare.....	15
7.4 Improving the work life of healthcare workers.....	15
8 The financial/sustainability analysis.....	15
8.1 The financial analysis cost data	15
8.2 Reference Scenario costs	16
8.3 Intervention/Alternate Scenario implementation costs.....	16
8.4 Intervention/Alternate Scenario health system costs.....	17
9 Cashflow analysis and calculating the financial indicators.....	18
9.1 Cash flow analysis: Alternate Scenario A - Ramp up to 10000 patients.....	18
9.2 Financial indicators for Alternate Scenario A.....	19
9.3 Cash flow analysis: Alternate Scenario B - Ramp up to 100000 patients.....	20
9.4 Financial indicators for Alternate Scenario B.....	21
10 Identifying risks and critical success factors	21
11 Conclusions and recommendations	22
11.1 Conclusions	22
11.2 Recommendations	22
Bibliography.....	23
Figure 1 – Cash flow analysis table Alternate Scenario A.....	19
Figure 2 – Cash flow analysis table Alternate Scenario B.....	20

Table 1 – Overview of the remote patient monitoring AAL Service	10
Table 2 – Description of the AAL Service	12
Table 3 – Reference Scenario healthcare costs	16
Table 4 – Alternate Scenario AAL service implementation costs	17
Table 5 – Alternate Scenario health system costs	18
Table 6 – Financial indicators Alternate Scenario A	20
Table 7 – Financial indicators Alternate Scenario B	21

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ECONOMIC EVALUATION OF ACTIVE ASSISTED LIVING SERVICES –**Part 2: Example of use – Monitoring patients with chronic diseases**

FOREWORD

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IEC SRD 63234-2, which is a Systems Reference Deliverable, has been prepared by IEC systems committee Active Assisted Living.

The text of this Systems Reference Deliverable is based on the following documents:

Draft SRD	Report on voting
SyC AAL/154/DTS	SyC AAL/166/RVDTs

Full information on the voting for the approval of this Systems Reference Deliverable can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC SRD 63234 series, published under the general title *Economic evaluation of active assisted living services*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

Under the "Triple Aim" [1]¹ concept (now "Quadruple Aim"[2]), a well defined, inclusive set of objectives for new interventions leading to improvements in the local and national healthcare systems consists of the following:

- improving the health of the population;
- improving the patients' (e.g. AAL care recipients) experience of care,
- lowering (or holding constant) the per-capita cost of care to the healthcare system to ensure sustainability; and
- (the recently added fourth aim) improving the work life of healthcare providers (e.g. healthcare professionals and AAL formal carers), clinicians, and other staff.

Economic evaluations of proposed new healthcare services and technologies involve the assessment of the costs and effects of any interventions in the healthcare system and provide input into the economic sustainability objective above. Where there are important health outcomes that can be evaluated in monetary terms, a cost-benefit analysis can be undertaken as a 'non-reference case analysis' (Alternate Scenario analysis) with details provided on the derivation of the monetary value of the health outcomes. Appropriate economic evaluations will provide evidence to address the financial considerations of proposed new interventions along with the impact on health outcomes.

To achieve the Quadruple Aim objectives, all new technology-supported homecare or Active Assisted Living (AAL) services (such as remote monitoring of patient physiological measurements, in-home medication adherence monitoring and management, as well as mobility aids and emergency reporting services) should be evaluated to ensure they not only improve the quality of the patients' lives but also provide economic benefits greater than the cost of providing the service. Without financial benefits that exceed the cost of the service to the health system funder, or at the very least an economically neutral situation while improving patient outcomes over usual care pathways, the services will not be sustainable – or the healthcare services funder must be prepared to knowingly increase its cost per patient supported by the healthcare system to achieve the population health outcomes.

Furthermore, health system funders may be presented with a choice of options for investment in new or expanded services. In order to compare options from a financial costs and benefits perspective (as well as their health outcomes), economic evaluations of the options will provide an equal basis for comparison of the options.

The evaluation example has been structured to provide example data for a Reference Scenario (the current means of providing care to patients with chronic diseases, the target patient population) and compare this against an Alternate Scenario (the healthcare intervention using the AAL physiological measurement and monitoring service) for the economic comparison. Standard economic measures including Return on Investment, Net Present Value, and Payback Period of the investment are estimated.

¹ Numbers in square brackets refer to the Bibliography.

ECONOMIC EVALUATION OF ACTIVE ASSISTED LIVING SERVICES –

Part 2: Example of use – Monitoring patients with chronic diseases

1 Scope

IEC SRD 63234-1 provides a descriptive framework and template for the economic evaluation of the implementation of technology-supported home healthcare, wellness or AAL services. This part of IEC SRD 62234 provides an example of the use of the framework, specifically analysis and economic evaluation of the implementation of technology-supported, remote, in-home monitoring of patients (AAL care recipients) with chronic diseases.

This analysis is completed from the point of view of the healthcare system/services funder (e.g. the government in a state-sponsored healthcare system or possibly a health management/health insurance company in a privately funded system).

This document is structured like IEC SRD 63234-1, to provide a means of capturing data for the Reference Scenario (the current means of providing care, also known as 'usual care', to the target population of members of the population with one or more chronic diseases living at home), compared against an Alternate Scenario (the deployment of an AAL service which provides remote patient monitoring). Standard economic measures have been estimated (using an electronic spreadsheet) including Return on Investment (ROI), Net Present Value (NPV), and Payback Period of the investment.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

AAL service

action or function of an AAL system creating an added value for customers

EXAMPLE 1 Configuration and maintenance of AAL systems.

EXAMPLE 2 Assistant systems to support the home and living environment.

[SOURCE: IEC 60050-871:2018, 871-01-04]