



# SYSTEMS REFERENCE DELIVERABLE



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

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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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- withdrawn,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]<sup>1</sup> 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.

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<sup>1</sup> 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.