

# Remote monitoring: how to remove barriers and implement advances



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Hôpitaux  
Universitaires  
Genève

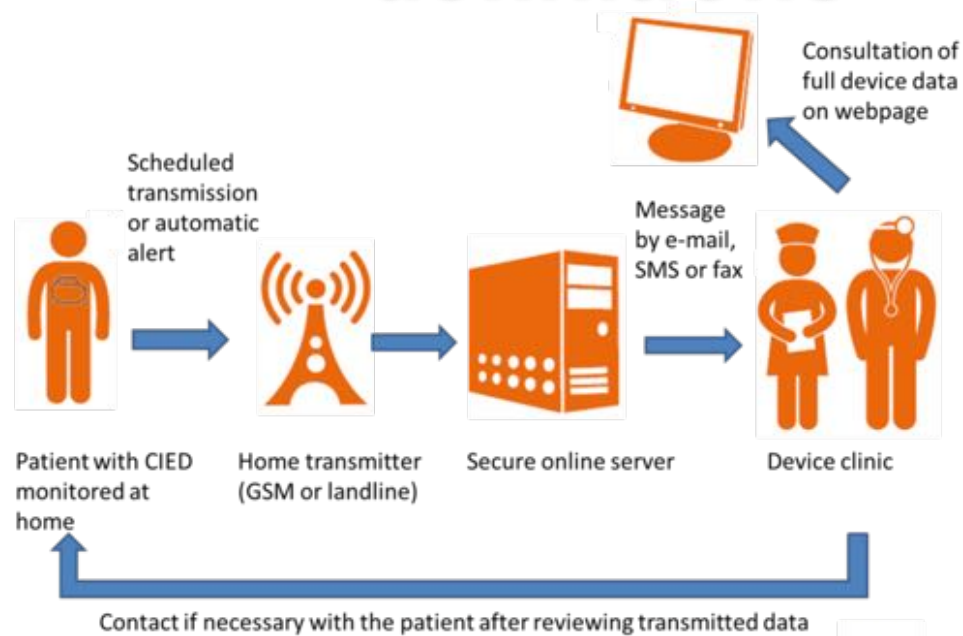
# Conflicts of interest

- Biotronik, Boston Scientific, Medtronic, Sorin, St-Jude
  - research grants, speaker honoraria, consulting fees, institutional fellowship support

# Remote device management

- Incentives
- Workload and workflow
- Reimbursement

# Remote device management: definitions



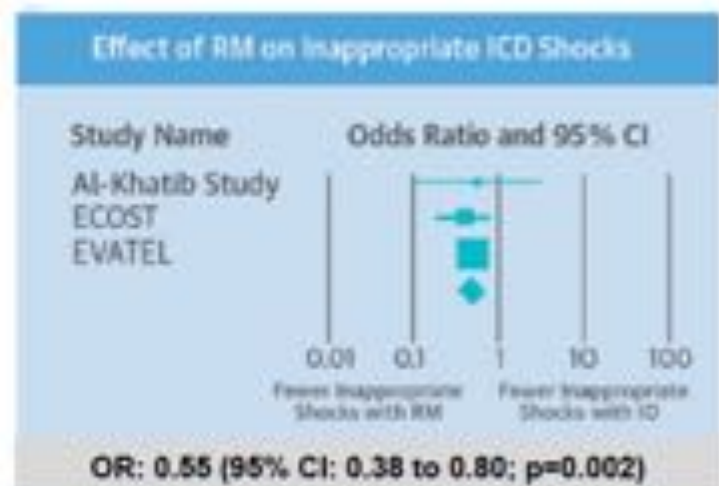
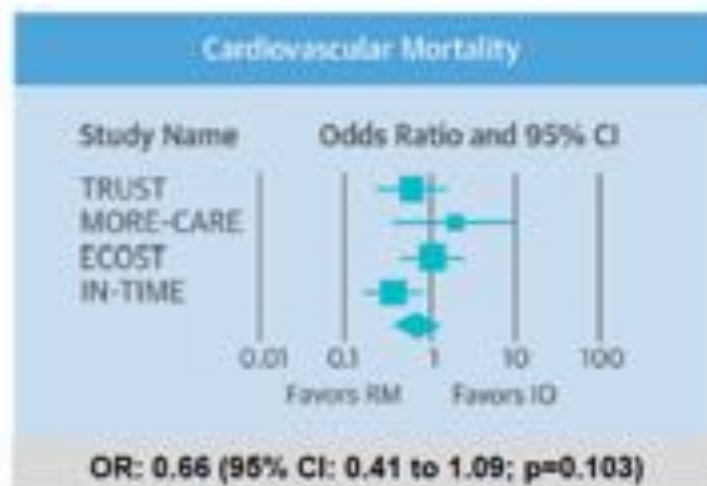
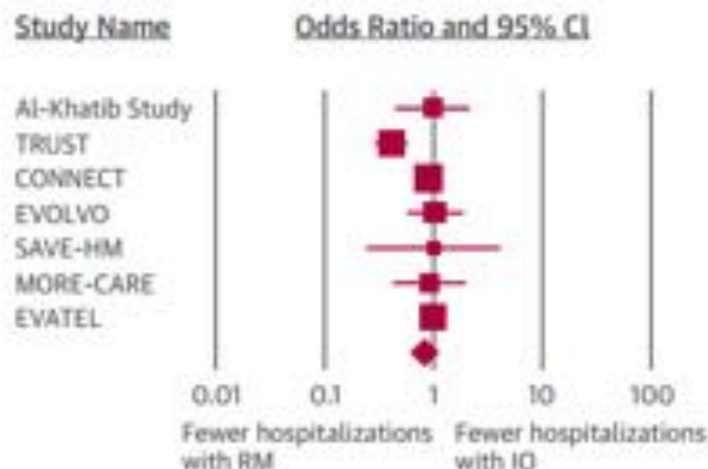
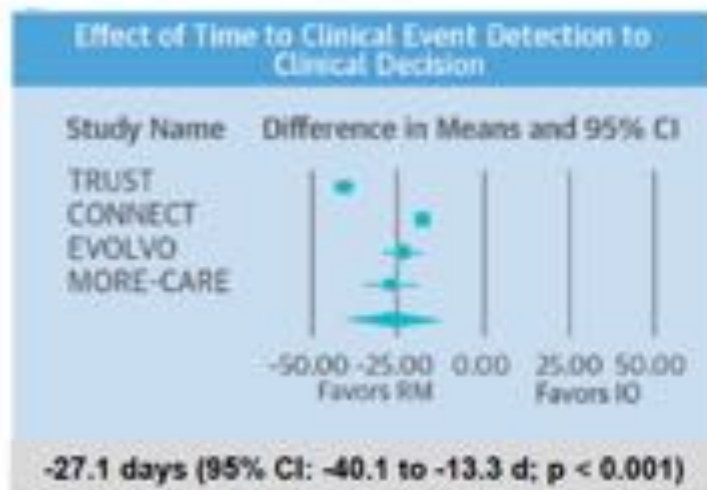
- **Remote follow-up:** full remote device interrogation at scheduled intervals
- **Remote monitoring:** unscheduled transmission of pre-defined alert events
- **Patient-initiated follow-up:** non-scheduled interrogations as a result of a patient experiencing a real or perceived clinical event

# Remote Monitoring of Implantable Cardioverter-Defibrillators

## A Systematic Review and Meta-Analysis of Clinical Outcomes

Nirmalatiban Parthiban,\*† Adrian Esterman, PhD,‡ Rajiv Mahajan, MD, PhD,\* Darragh J. Twomey, MBBS,\*  
 Rajeev K. Pathak, MBBS,\* Dennis H. Lau, MBBS, PhD,\* Kurt C. Roberts-Thomson, MBBS, PhD,\*  
 Glenn D. Young, MBBS,\* Prashanthan Sanders, MBBS, PhD,\* Anand

JACC 2015;65:2591-600



# Remote monitoring: a cost or an investment?

Haran Burri<sup>1\*</sup>, Hein Heidbüchel<sup>2</sup>, Werner Jung<sup>3</sup>, and Pedro Brugada<sup>4</sup>

<sup>1</sup>Cardiology Service, University Hospital of Geneva, Switzerland; <sup>2</sup>Cardiology-Electrophysiology service, University Hospital Gasthuisberg, Leuven, Belgium; <sup>3</sup>Schwarzwald-Baar Klinikum, Academic Hospital of the University of Freiburg, Germany; and <sup>4</sup>Heart Rhythm Management Center, UZ Brussel Vrije Universiteit Brussel, Brussels, Belgium

	Accessibility	Quality	Efficiency
Patients	Increased, especially if remote	Better care received Quality of life Reduced mortality and morbidity <sup>a</sup>	Less travel Less time spent
Medical personnel	Increased access to patient data	Better care given Increased satisfaction	Quicker follow-up Fewer missed visits Increased flexibility Less administrative work
Hospital	Networking of patient data	Reputation Increased satisfaction of personnel	More efficient use of hospital resources
Device manufacturer	Data centralization	Product quality control	Increased (avoids participation in in-office follow-up)
Insurance company	Data on healthcare use	Better patient care	Management of healthcare system
State	Increased access of patient care	Better public service	Management of healthcare system

# 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy

The Task Force on cardiac pacing and resynchronization therapy of the European Society of Cardiology (ESC). Developed in collaboration with the European Heart Rhythm Association (EHRA).

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>	Ref. <sup>c</sup>
Device-based remote monitoring should be considered in order to provide earlier detection of clinical problems (e.g. ventricular tachyarrhythmias, atrial fibrillation) and technical issues (e.g. lead fracture, insulation defect).	IIa	A	174–176

# HRS Expert Consensus Statement on remote interrogation and monitoring for cardiovascular implantable electronic devices

Heart Rhythm 2015 Jul;12(7):e69-100

	Class of Recommendation	Level of Evidence
A strategy of remote CIED monitoring and interrogation, combined with at least annual IPE, is recommended over a calendar-based schedule of in-person CIED evaluation alone (when technically feasible).	I	A
All patients with CIEDs should be offered RM as part of the standard follow-up management strategy.	I	A
Before implementing RM, it is recommended that each patient be educated about the nature of RM, their responsibilities and expectations, potential benefits, and limitations. The occurrence of this discussion should be documented in the medical record.	I	E
It is recommended that all CIEDs be checked through direct patient contact 2-12 weeks postimplantation.	I	E
It may be beneficial to initiate RM within the 2 weeks of CIED implantation.	IIa	C
All patients with an implantable loop recorder with wireless data transfer capability should be enrolled in an RM program, given the daily availability of diagnostic data.	I	E
<b>Device and Disease Management</b>	<b>Class of Recommendation</b>	<b>Level of Evidence</b>
RM should be performed for surveillance of lead function and battery conservation.	I	A
Patients with a CIED component that has been recalled or is on advisory should be enrolled in RM to enable early detection of actionable events.	I	E
RM is useful to reduce the incidence of inappropriate ICD shocks.	I	B-R
RM is useful for the early detection and quantification of atrial fibrillation.	I	A
The effectiveness of RM for thoracic impedance alone or combined with other diagnostics to manage congestive heart failure is currently uncertain.	IIb	C





## ISHNE/EHRA expert consensus document on the remote monitoring of cardiovascular implantable electronic devices (CIED)

Sergio Dubner<sup>1\*</sup>, Angelo Auricchio<sup>2</sup>, J. Peter Stone<sup>5</sup>, Josep Brugada<sup>6</sup>, Ryszard Paulus Kirchhof<sup>9,10</sup>, Günter Breithardt<sup>11</sup>, Mehmet K. Aktas<sup>11</sup>, Michal Chudzik<sup>13</sup>,

Cardiovascular Medicine 2011;14(2):58–60

### Richtlinien für die Fernüberwachung (Remote Monitoring) implantierter Geräte zur Diagnostik und Therapie von Rhythmusstörungen und Herzinsuffizienz<sup>1, 2</sup>

Jürg Fuhrer, Istvan Babotai, Urs Bauersfeld (†), Haran Burri, Hans Gloor, Jürg Schläpfer, Christian Sticherling, Peter Zwicky

für die Arbeitsgruppe Herzschrittmacher und Elektrophysiologie der Schweizerischen Gesellschaft für Kardiologie

## HRS Expert Consensus Document on the Remote Monitoring and Follow-up of Cardiovascular Implantable Electronic Devices

David Slotwiner, MD, FHRS, FACC (Chair),<sup>1</sup> George Annas, JD, MPH,<sup>4</sup> Marianne Nestor O. Galizio, MD,<sup>7\*</sup> Taya V. Glotter, MD,<sup>8</sup> Charles J. Love, MD, CCDS, FHRS, FAHA,<sup>9</sup> Suneet Mittal, MD, FHRS,<sup>12</sup> Loredana Napolitano, MD, FHRS,<sup>13</sup> Merritt H. Raitt, MD, FHRS,<sup>15</sup> Renat R. Saba, MD, FHRS, FACC, FRCPC,<sup>16</sup> Mark H. Schoenfeld, MD, CCDS, FHRP,<sup>17</sup> Julie Shea, MS, RNCS, FHRS, CCDS,<sup>18</sup> Atul Verma, MD, FHRS, FRCPC,<sup>5</sup> Che

Neth Heart J (2012) 20:53–65  
DOI 10.1007/s12471-011-0239-5

#### SPECIAL ARTICLE

### Remote monitoring and follow-up of cardiovascular implantable electronic devices in the Netherlands

An expert consensus report of the Netherlands Society of Cardiology

C. C. de Cock • J. Elders • N. M. van Hemel • K. van den Broek • L. van Erven • B. de Mol • J. Talmon • D. A. M. J. Theuns • W. de Voegt

# Remote device management

- Incentives
- Workload and workflow
- Reimbursement

# Remote monitoring: workload

117 patients with Home Monitoring

Time spent in web connection:

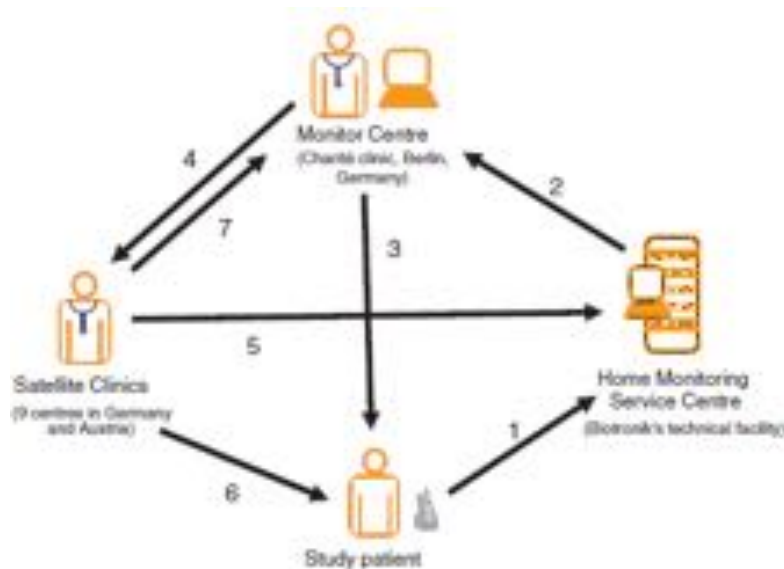
- Nurse: 59 min/week
- Physician: 12 min/week



## Workload and usefulness of daily, centralized home monitoring for patients treated with CIEDs: results of the MoniC (Model Project Monitor Centre) prospective multicentre study

Thomas Vogtmann<sup>1,8\*</sup>, Sascha Stiller<sup>2</sup>, Andrea Marek<sup>1</sup>, Stefanie Kespoht<sup>3</sup>, Michael Gomer<sup>4</sup>, Volker Köhlkamp<sup>5</sup>, Göran Zach<sup>6</sup>, Steffen Löscher<sup>7</sup>, and Gert Baumann<sup>1</sup>

1 nurse + 1 supporting physician  
62 PM and 59 ICD patients  
nine satellite clinics



**Table 3** Screening and communication workload at the monitor centre<sup>a</sup>

Activity	Telemonitoring nurse (min)	Physician (min)
Basic screening		
Analysis of event reports <sup>b</sup>	25.7	0.7
Communication of selected events to SC	4.3 @	0.4 (phone)
Total	30.0	1.1
Extended screening		
Scheduled analysis of online data trends	34.7	0.3
Communication of abnormal trends to SC	2.2 @	0.0
Total	36.9	0.3
Transmission-gaps related communication	2.8 (phone, @)	0.0

SC, satellite clinics; @, email communication.

<sup>a</sup>Normalized per working day for 100 patients monitored, assuming each week has 5 working days.

<sup>b</sup>Event reports were customized in a way to cover almost all types of arrhythmia and technical events, to maximize the input information for the monitor centre.

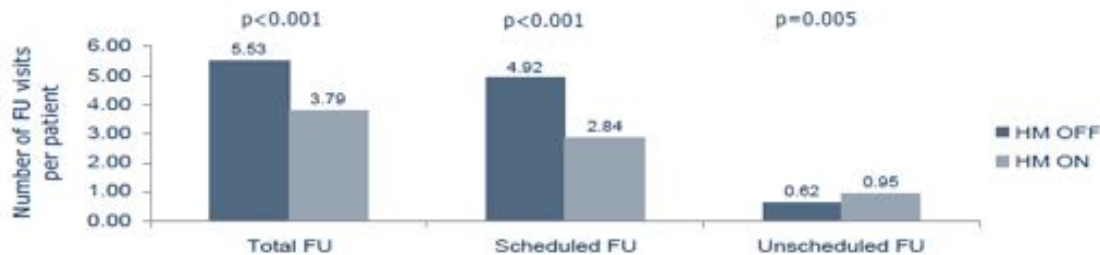
# Ressource utilization

312 ICD VR/DR pts randomized to HM on vs off

In-office visits at 12 + 24 mo in both groups

Additional visits as usual care in HM off group only

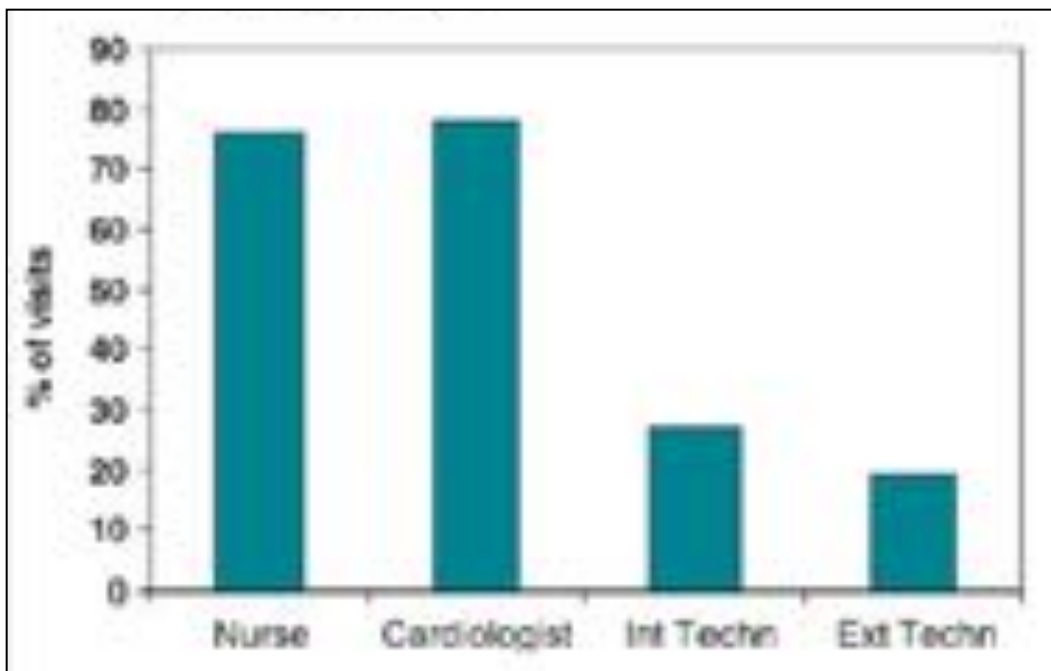
	<u>Ctrs</u>	<u>Pts</u>
DE	4	88
BE	3	87
ES	4	54
UK	3	47
NL	1	25
FI	1	2
	17	303



- Internal data discussion
- Remote monitoring
- Contact in between FUs
- In clinic FU

## Healthcare personnel resource burden related to in-clinic follow-up of cardiovascular implantable electronic devices: a European Heart Rhythm Association and Eucomed joint survey

Giuseppe Boriani<sup>1\*</sup>, Angelo Auricchio<sup>2</sup>, Catherine Klersy<sup>3</sup>, Paulus Kirchhof<sup>4</sup>, Josep Brugada<sup>5</sup>, John Morgan<sup>6</sup>, and Panos Vardas<sup>7</sup>



Visit	n	Actual time, mean (SD)	P-value <sup>a</sup>
<hr/>			
Type of visit			0.007
Scheduled	397	16.2 (9.2)	
Unscheduled	29	19.3 (8.3)	
Device			<0.001
IPG	183	14.0 (7.5)	
ICD	156	17.7 (10.0)	
CRT	84	19.1 (9.6)	
Reprogramming			<0.001
No	294	15.3 (8.7)	
Yes	127	19.3 (9.7)	
Country			0.07
CH	64	24.3 (10.0)	
France	31	22.7 (8.7)	
Germany	81	14.4 (7.3)	
Greece	34	15.8 (9.4)	
Italy	94	12.9 (7.2)	
Spain	68	19.9 (8.6)	
UK	54	16.3 (7.8)	

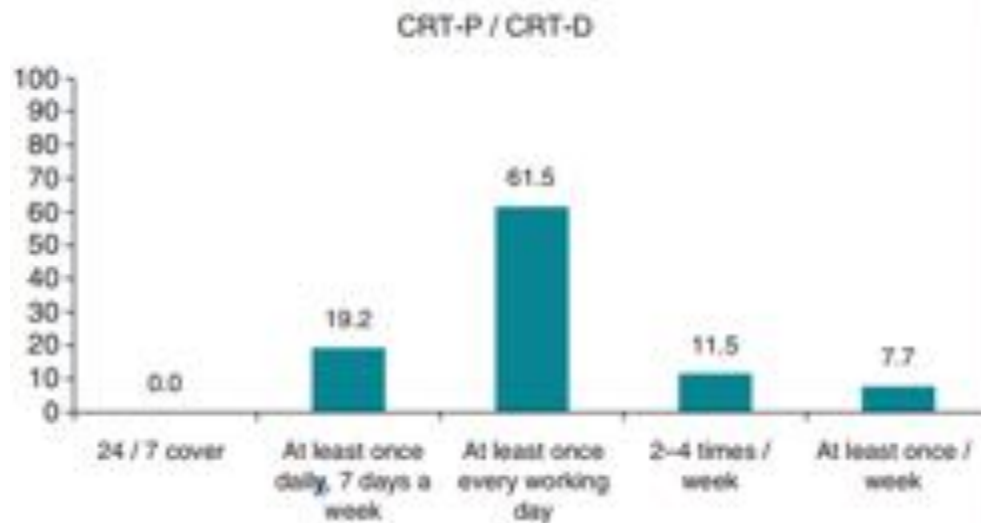
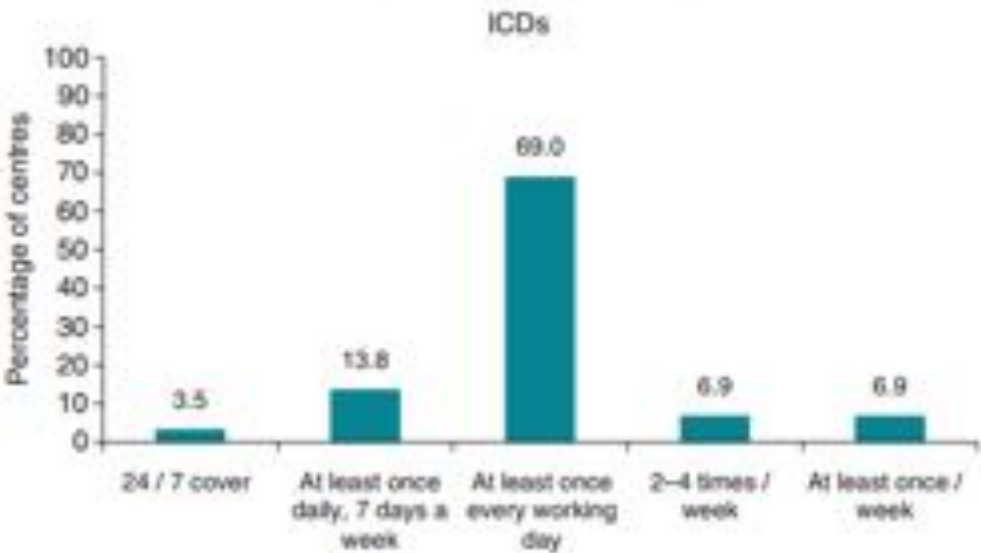
# Remote monitoring of cardiac implantable electronic devices in Europe: results of the European Heart Rhythm Association survey

Antonio Hernández-Madrid<sup>1\*</sup>, Thorsten Lewalter<sup>2</sup>, Alessandro Proclemer<sup>3</sup>, Laurent Pison<sup>4</sup>, Gregory Y.H. Lip<sup>5</sup>, and Carina Blomstrom-Lundqvist<sup>6</sup>, conducted by the Scientific Initiatives Committee, European Heart Rhythm Association

Europace (2014) 16, 129–132

- Survey of 54 centres belonging to the EHRA EP research network (83% University, 11% private)
- 76% use remote device management
- 57% nurse review
- 25% no specific workflow

# Frequency of checks on alerts





# Remote, Wireless, Ambulatory Monitoring of Implantable Pacemakers, Cardioverter Defibrillators, and Cardiac Resynchronization Therapy Systems: Analysis of a Worldwide Database

ARNAUD LAZARUS, M.D.

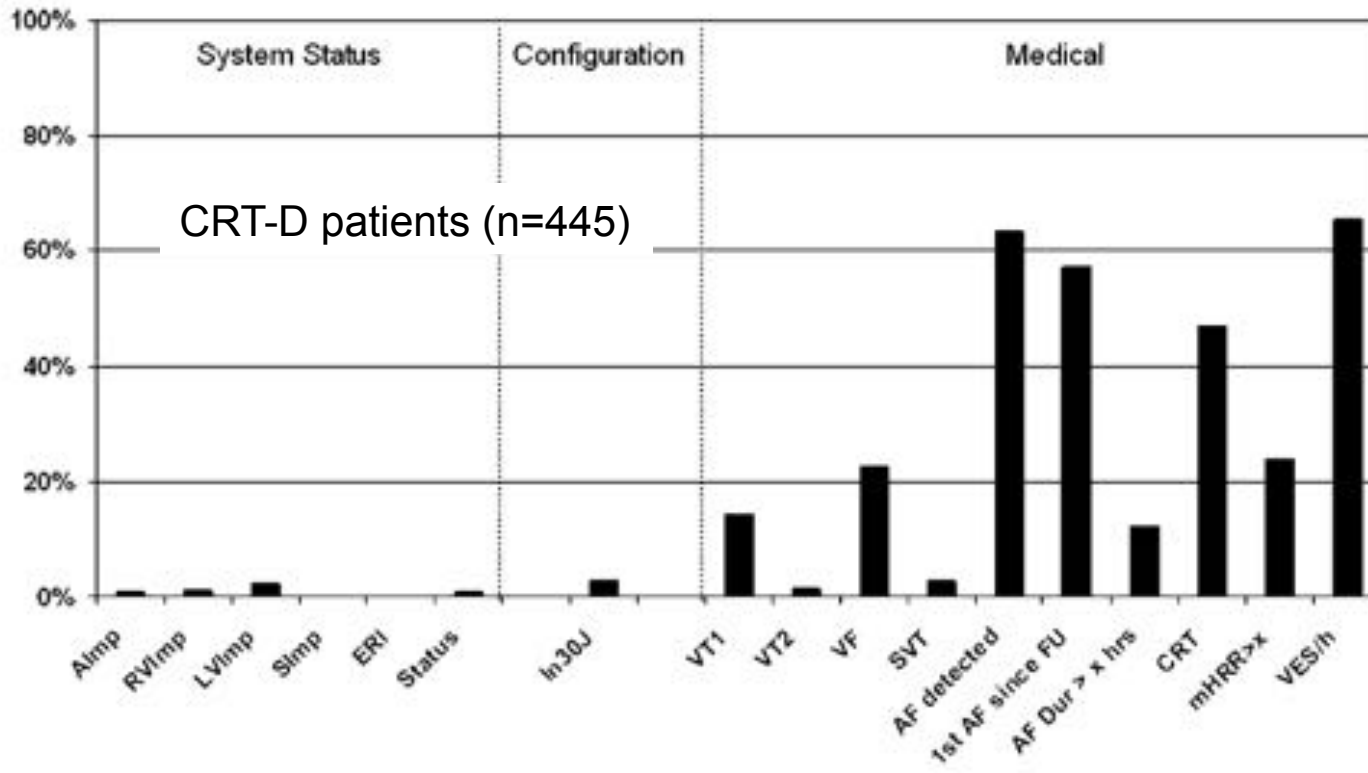
From the InParys Clinical Research Group, Paris, France

PACE 2007; 30:S2-S12

n=11,624 patients implanted worldwide with Biotronik PM, ICD or CRT-D

3,004,763 automatic wireless transmissions

Monitoring of 10.5 ±9 months (1-49 months)



# Remote Monitoring Reduces Healthcare Utilization and Improves Quality of Care in Heart Failure Patients with Implantable Defibrillators: The EVOLVO (Evolution of Management Strategies of Heart Failure Patients with Implantable Defibrillators) Study

Maurizio Landolina, Giovanni B. Perego, Maurizio Lunati, Antonio Curnis, Giuseppe Guenzati, Alessandro Vicentini, Gianfranco Parati, Gabriella Borghi, Paolo Zanaboni, Sergio Valsecchi and Maurizio Marzegalli

Circulation 2012 19;125(24):2985-92.

**Table 2.** Number (annualized rate per patient year) of healthcare utilizations for HF, arrhythmias or ICD-related events, by arm.

Clinical Event	Remote Arm	Standard Arm
Total healthcare utilizations	559 (4.40)	726 (5.76)#
- protocol-defined clinic visits	283 (2.23)	451 (3.60)#
- non-urgent in-office visits	144 (1.13)	109 (0.87)
- urgent in-office visits (*)	50 (0.39)	79 (0.63)#
- emergency room visits (*)	25 (0.19)	38 (0.30)
- hospitalizations requiring at least 1 overnight stay	57 (0.45)	49 (0.39)
Alert Condition		
Total alert conditions	315 (2.50)	256 (2.39)
- OptiVol Alert	274 (2.17)	231 (2.16)
- AT/AF burden at least 6 hours	13 (0.10)	17 (0.16)
- Ventricular rate at least 100 beats/min during AT/AF episodes lasting $\geq 6$ hours	8 (0.06)	4 (0.04)
- Shock delivered	9 (0.07)	2 (0.02)
- Lead impedances out of range	8 (0.06)	0 (0)
- VF detection/therapy off	1 (0.01)	2 (0.02)
- Low battery	2 (0.02)	0 (0)

\*: primary endpoint; #: significant difference in the rate of events ( $p < 0.001$ ).



# Combined Heart Failure Device Diagnostics Identify Patients at Higher Risk of Subsequent Heart Failure Hospitalizations

Results From PARTNERS HF (Program to Access and Review Trending Information and Evaluate Correlation to Symptoms in Patients With Heart Failure) Study

David J. Whellan, MD, MHS,\* Kevin T. Ousdigian, MSEE, MSIE,† Sana M. Al-Khatib, MD, MHS,‡ Wenji Pu, PhD,† Shantanu Sarkar, PhD,† Charles B. Porter, MD,§ Behzad B. Pavri, MD,\* Christopher M. O'Connor, MD,‡ for the PARTNERS Study Investigators

J Am Coll Cardiol 2010;55:1803–10

694 CRT patients

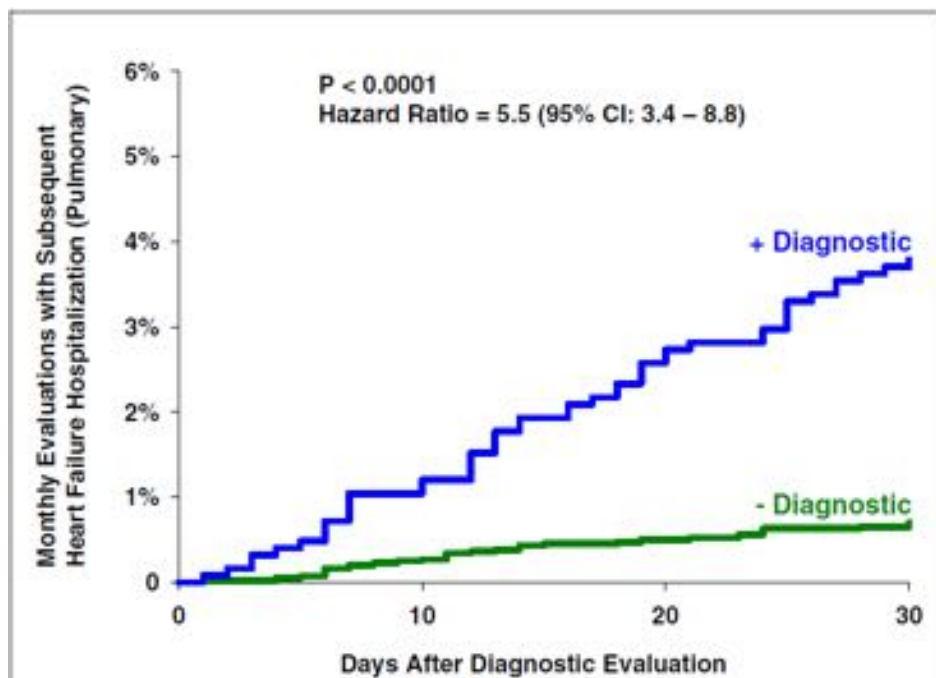


Figure 3

Kaplan-Meier Estimates of the Percentage of Monthly Evaluations With a Subsequent HF Hospitalization Due to Sign/Symptoms of Pulmonary Congestion

Optivol >100Ωdays

or any 2 of:

Optivol ≥60 Ωdays

AF duration ≥6h

AF with V rate ≥90bpm

Daily activity <1h/d

Night HR > 85bpm

HRV <60ms

% CRT pacing <90%

ICD shock

### Algorithms

Fluid Index ≥ 60

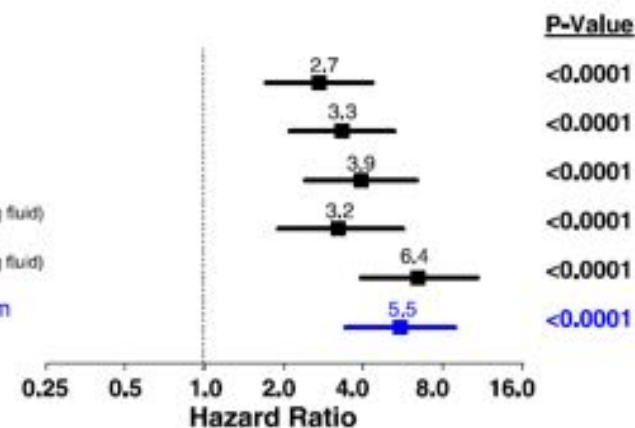
Fluid Index ≥ 80

Fluid Index ≥ 100

1 Criterion (excluding fluid)

≥2 Criterion (excluding fluid)

Combined Algorithm



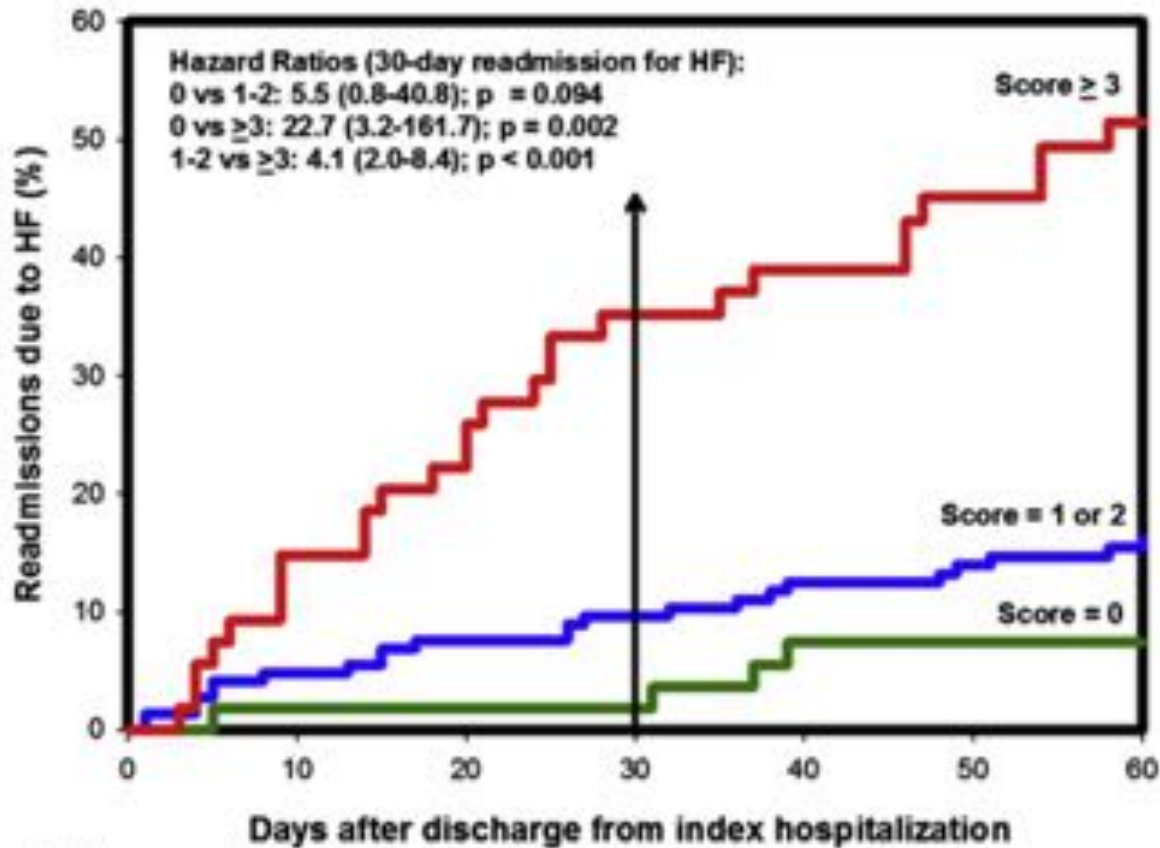
30-day HF hospitalization

# Development of a Method to Risk Stratify Patients With Heart Failure for 30-Day Readmission Using Implantable Device Diagnostics

David J. Whellan, MD<sup>a,\*</sup>, Shantanu Sarkar, PhD<sup>b</sup>, Jodi Koehler, MS<sup>b</sup>, Roy S. Small, MD<sup>c</sup>, Andrew Boyle, MD<sup>d</sup>, Eduardo N. Warman, PhD<sup>b</sup>, and William T. Abraham, MD<sup>e</sup>

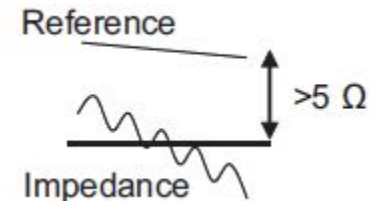
Am J Cardiol 2013 Jan 1;111(1):79-84

166 CRT-D pts with HF admission from 4 studies



Data at 7d post discharge:

## Impedance

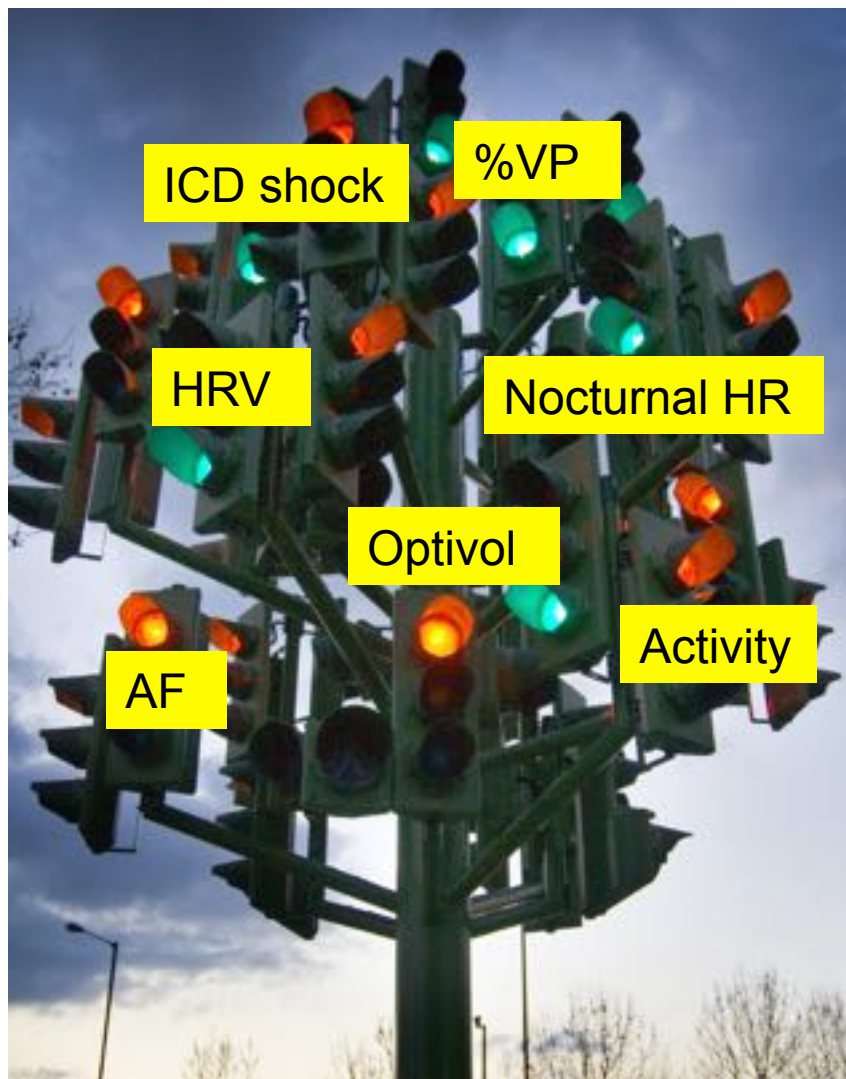


Optivol > 60Ω.d + mean > 5 Ω less than ref.

**AF > 6h + VR > 90bpm**

**≥ 1 Nocturnal HR > 80bpm**

Number at risk		0	10	20	30	40	50	60
Score ≥ 3	54	46	42	35	32	26	23	
Score = 1, 2	145	138	134	131	121	117	113	
Score = 0	55	54	54	54	48	46	44	





# Heart Failure Management Report - Last 90 Day Zoom

Heart Failure Risk

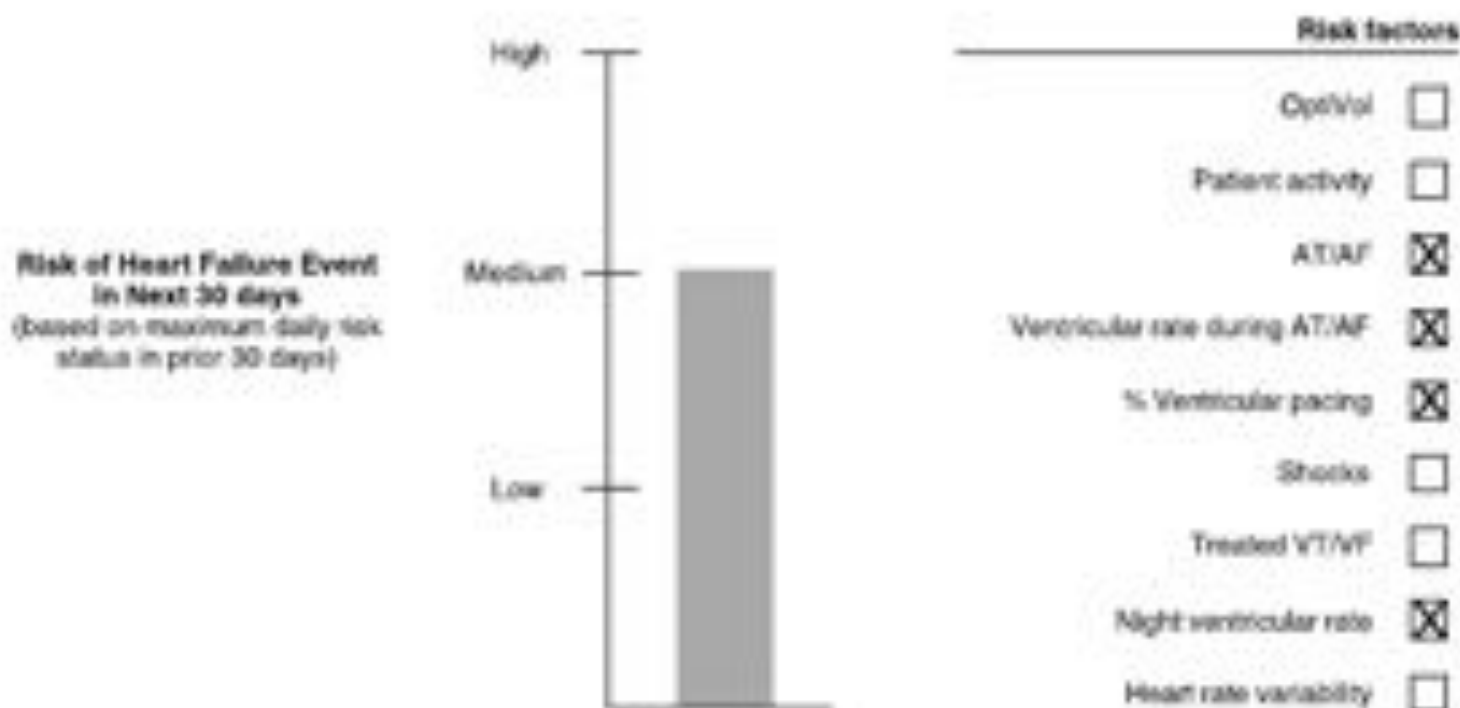
Device: Consulta™ CRT-D 0234TRK

Serial Number: PUD022200H

Date of interrogation: 15-Sep-2010 09:53:15

Last 90 Day Zoom (16-Jun-2010 to 15-Sep-2010)

Heart Failure Risk Status on 15-Sep-2010 is **Medium\***

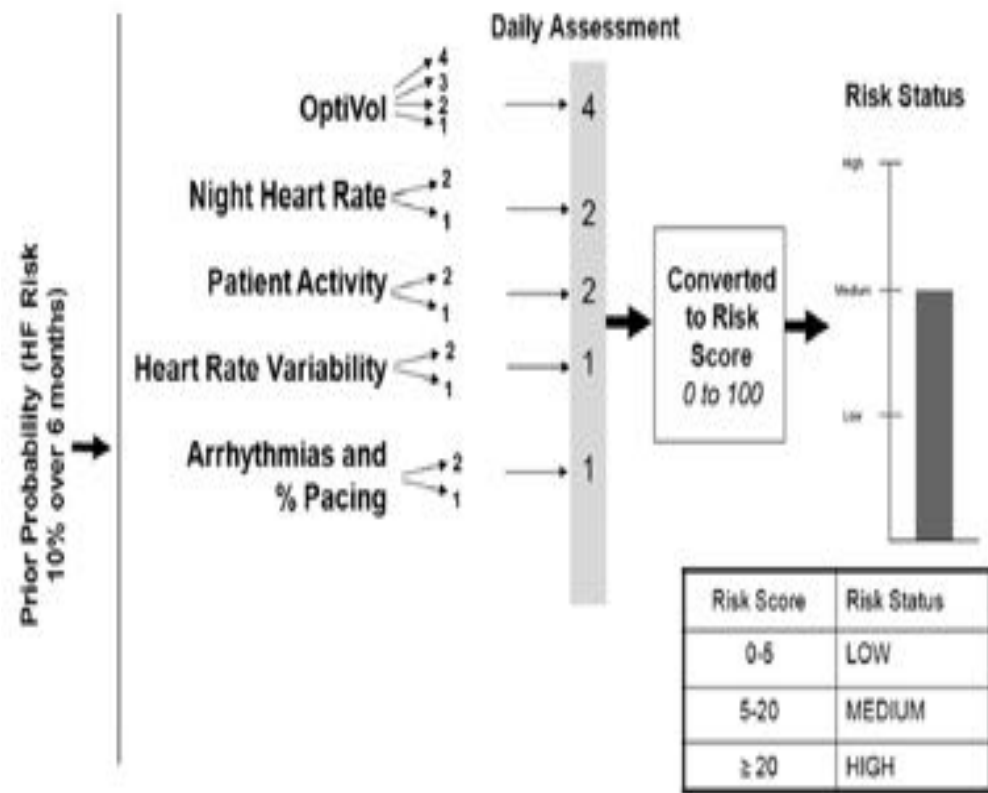


# A novel algorithm to assess risk of heart failure exacerbation using ICD diagnostics: Validation from RAFT <sup>e</sup>

Lorne J. Gula, MD, MS, FRCPC, FHRS,<sup>\*</sup> George A. Wells, PhD,<sup>†</sup> Raymond Yee, MD, FRCPC, FHRS,<sup>\*</sup> Jodi Koehler, MS,<sup>‡</sup> Shantanu Sarkar, PhD,<sup>‡</sup> Vinod Sharma, PhD,<sup>‡</sup> Allan C. Skanes, MD, FRCPC, FHRS,<sup>\*</sup> John L. Sapp, MD, FRCPC, FHRS,<sup>§</sup> Damian P. Redfearn, MD, FRCPC,<sup>||</sup> Jaimie Manlucu, MD, FRCPC,<sup>\*</sup> Anthony S.L. Tang, MD, FRCPC, FHRS,<sup>†</sup>

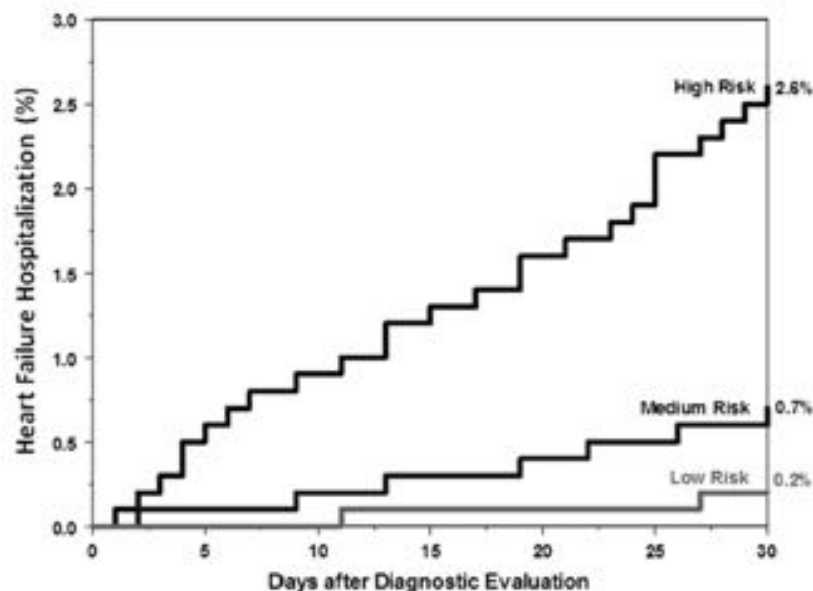
Heart Rhythm 2014;11:1626–1631

1224 pts from RAFT  
ICD or CRT-D (61%)



**Table 2** ID-determined risk of HF exacerbation/admission

ID risk	No. of months	Event rate per month	Relative risk (95% CI)
All (N = 1224)	37,861	258 (0.68%)	
Low	15,359 (41%)	33 (0.21%)	Reference
Medium	18,595 (49%)	123 (0.66%)	2.9 (2.0–4.4)
High	3907 (10%)	102 (2.61%)	10.7 (6.9–16.6)





# ResponsCRT

Help

## Activity Outliers

Today: 24/09/2012 - Last Refresh date: 28/09/2012



19 patients out of 46 (41.3%) of your CRT CareLink® Clinic show a **Low Activity/Very Active** profile.  
 Data not yet available for 1 recently implanted CRT patients.

All Data     All Data     Low Data     All Data  
 All Data     All Data     All Data     All Data

Patients triaged based on their Activity Level evolution

FLEISCHHACKER  
MEDI  CONNECT

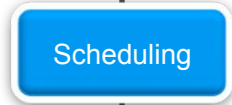
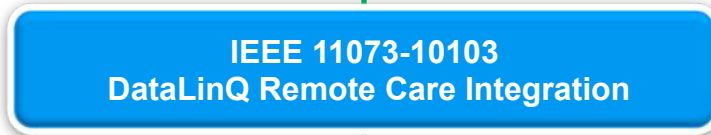
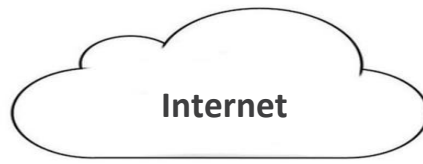
# Data transfer

**SCOTTCARE**<sup>™</sup>  
cardiovascular solutions

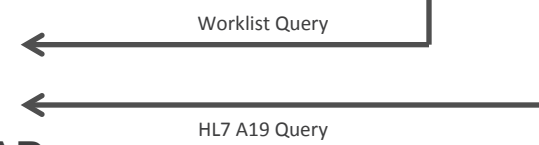
OneView<sup>™</sup> CRM

**Fysicon**  
DataLinQ 2PAD





FysiconDataLinQ 2PAD



Network printer port



Implants

Follow-up

Hospital

# Remote device management

- Incentives
- Workload and workflow
- Reimbursement

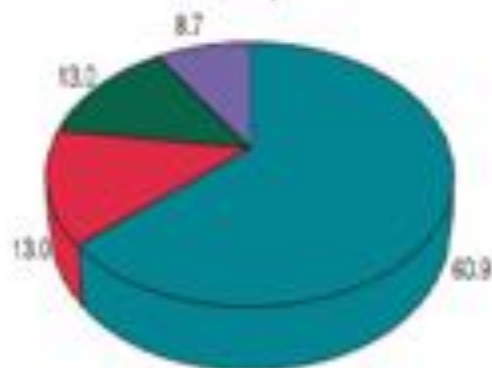
# Implementation and reimbursement of remote monitoring for cardiac implantable electronic devices in Europe: a survey from the health economics committee of the European Heart Rhythm Association

Georges H. Mairesse<sup>1</sup>, Frieder Braunschweig<sup>2</sup>, Katherine Klersy<sup>3</sup>, Martin R. Cowie<sup>4</sup>, and Francisco Leyva<sup>5\*</sup>

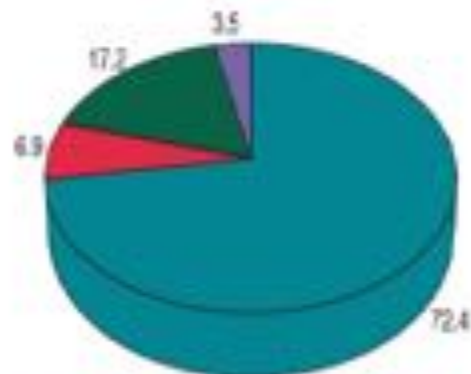
Europace (2015) 17, 814–818

Electronic survey from 43 centres in 15 European countries

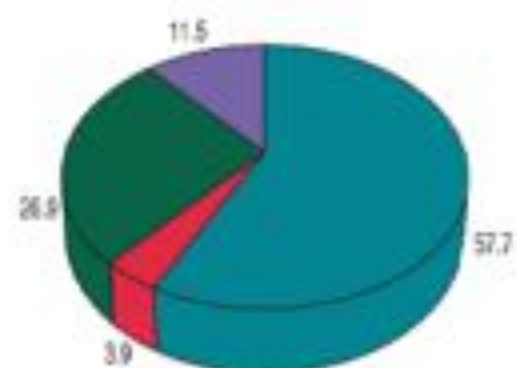
Conventional pacemakers



ICD's



CRT-P/CRT-D



■ Lack of reimbursement  
■ Technical issues  
■ Workload  
■ Other

	<b>Costs</b>	<b>Financial incentive</b>
<b>Patients</b>	No extra cost*	Less costs (travel etc.)
<b>Medical personnel</b>	No extra cost*	Possibility to increase total number of follow-ups
<b>Hospital</b>	Transmitter *	Shorter hospital stay (for same DRG)?
<b>Device Company</b>	Transmitter (~2,600 Euros for mobile system, based on 2010 UK list prices <i>(CEP 1069)</i> Telecom Database servicing Helpline Scientific studies	Marketing value
<b>Insurance company</b>	Transmitter* Costs of alerts	Fewer cost-intensive clinical events?
<b>State</b>	Transmitter*	Cost control Fewer cost-intensive clinical events?

\*Depends on reimbursement

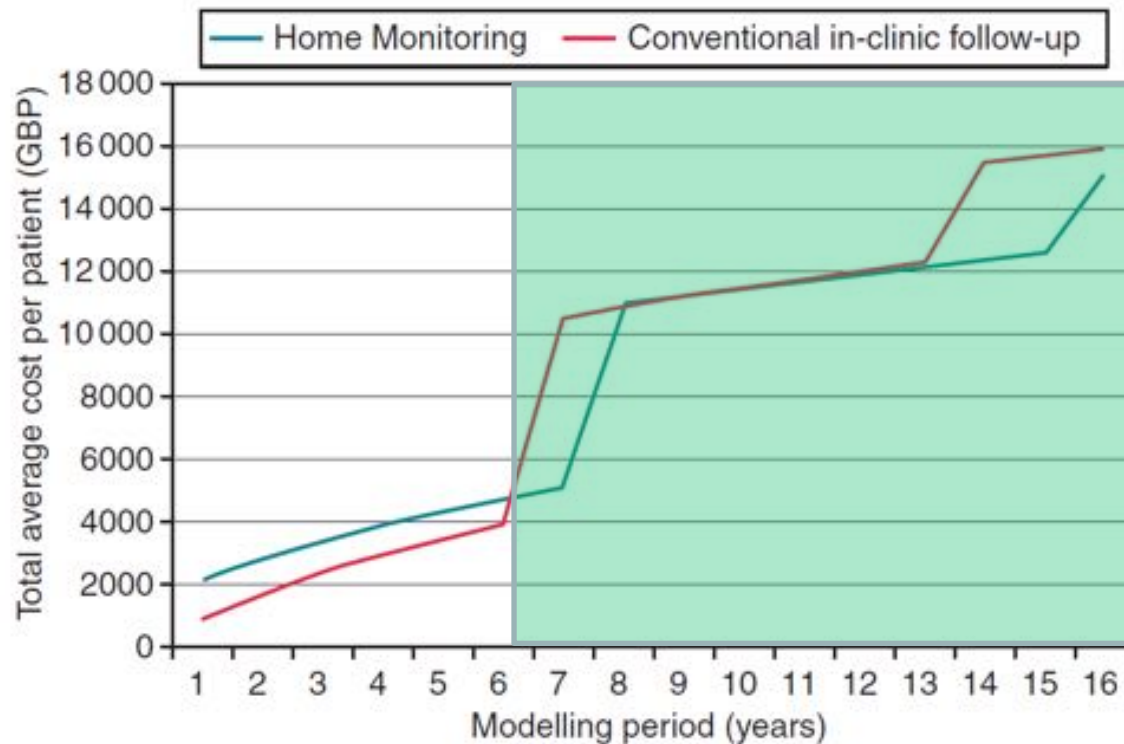
## Cost–consequence analysis of daily continuous remote monitoring of implantable cardiac defibrillator and resynchronization devices in the UK

Haran Burri<sup>1\*†</sup>, Christian Sticherling<sup>2†</sup>, David Wright<sup>3</sup>, Koji Makino<sup>4</sup>, Antje Smala<sup>5</sup>, and Dominic Tilden<sup>4</sup>

### Markov model

Conservative analysis assumes:

- No ↓ hospital admission, stroke
- No ↑ in FU before ERI
- No travel costs
- No increase in efficiency



### **Included:**

Transmitter GBP 1334  
Remote FU: 74 GBP

Savings driven by:

- 51% inappropriate shocks
- ⇒ +7% device longevity

# Costs of remote monitoring vs. ambulatory follow-ups of implanted cardioverter defibrillators in the randomized ECOST study

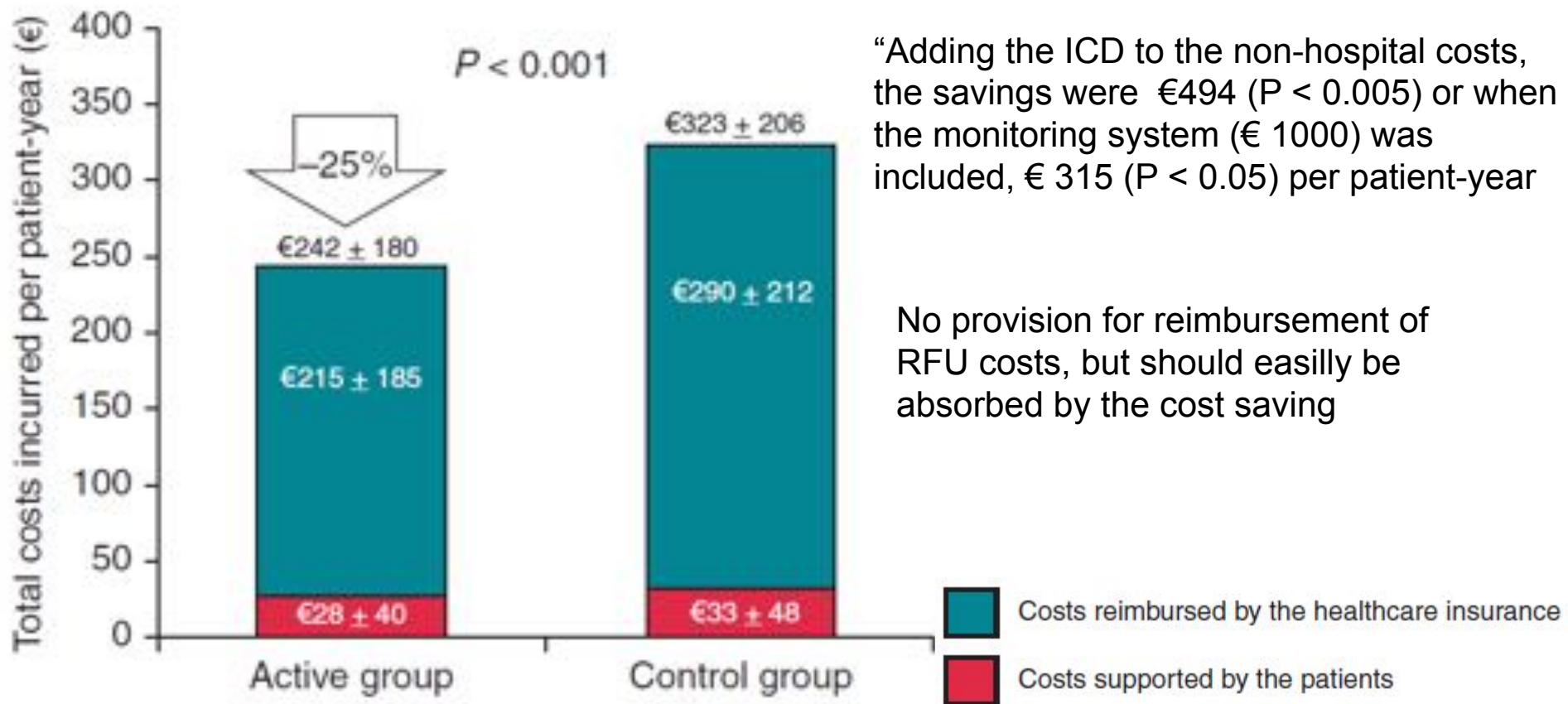
Laurence Guédon-Moreau<sup>1\*</sup>, Dominique Lacroix<sup>1</sup>, Nicolas Sadoul<sup>2</sup>, Jacques Clémenty<sup>3</sup>, Claude Kouakam<sup>1</sup>, Jean-Sylvain Hermida<sup>4</sup>, Etienne Aliot<sup>2</sup>, and Salem Kacet<sup>1</sup>, on behalf of the ECOST trial Investigators

N=310

RM : 1 in-office FU/yr  
Control: 2 in-office FU/yr

Europace 2014 Aug;16(8):1181-8

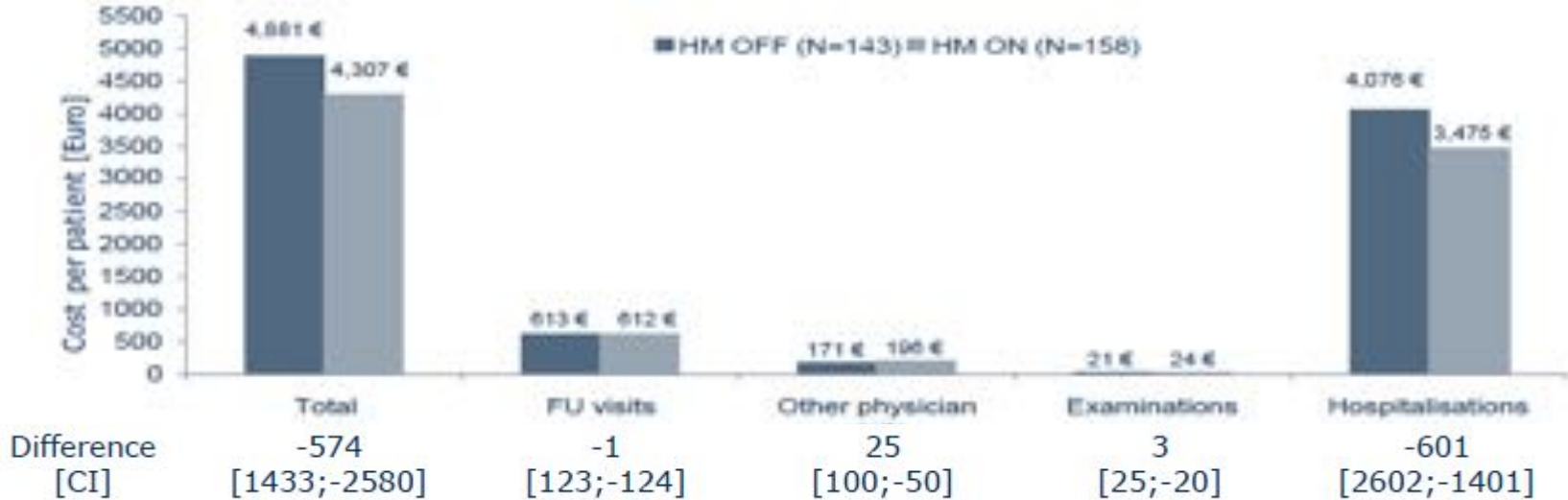
Data: actual billing documents issued by the French health insurance system





# Costs

## Payer costs

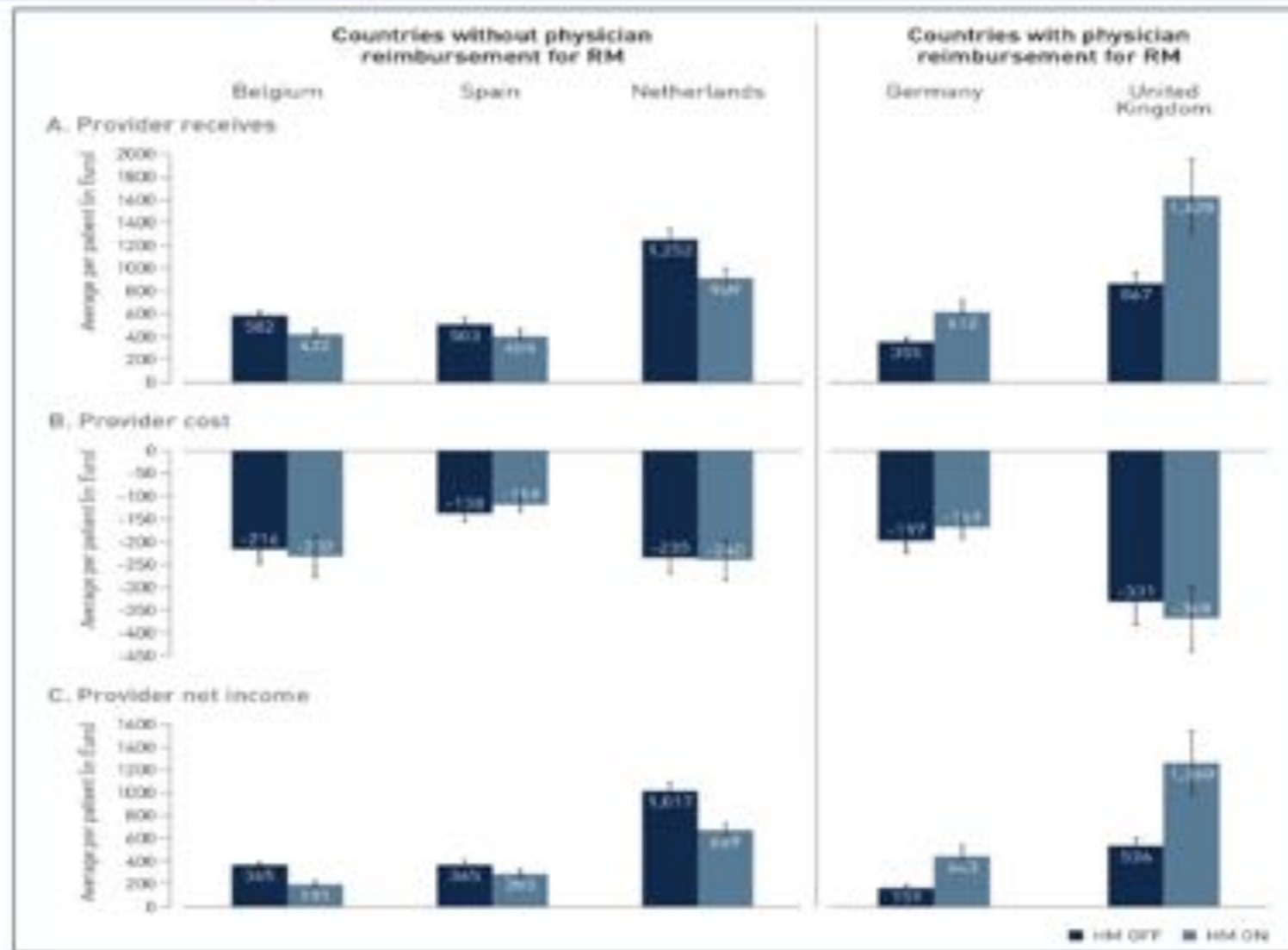


## Provider costs



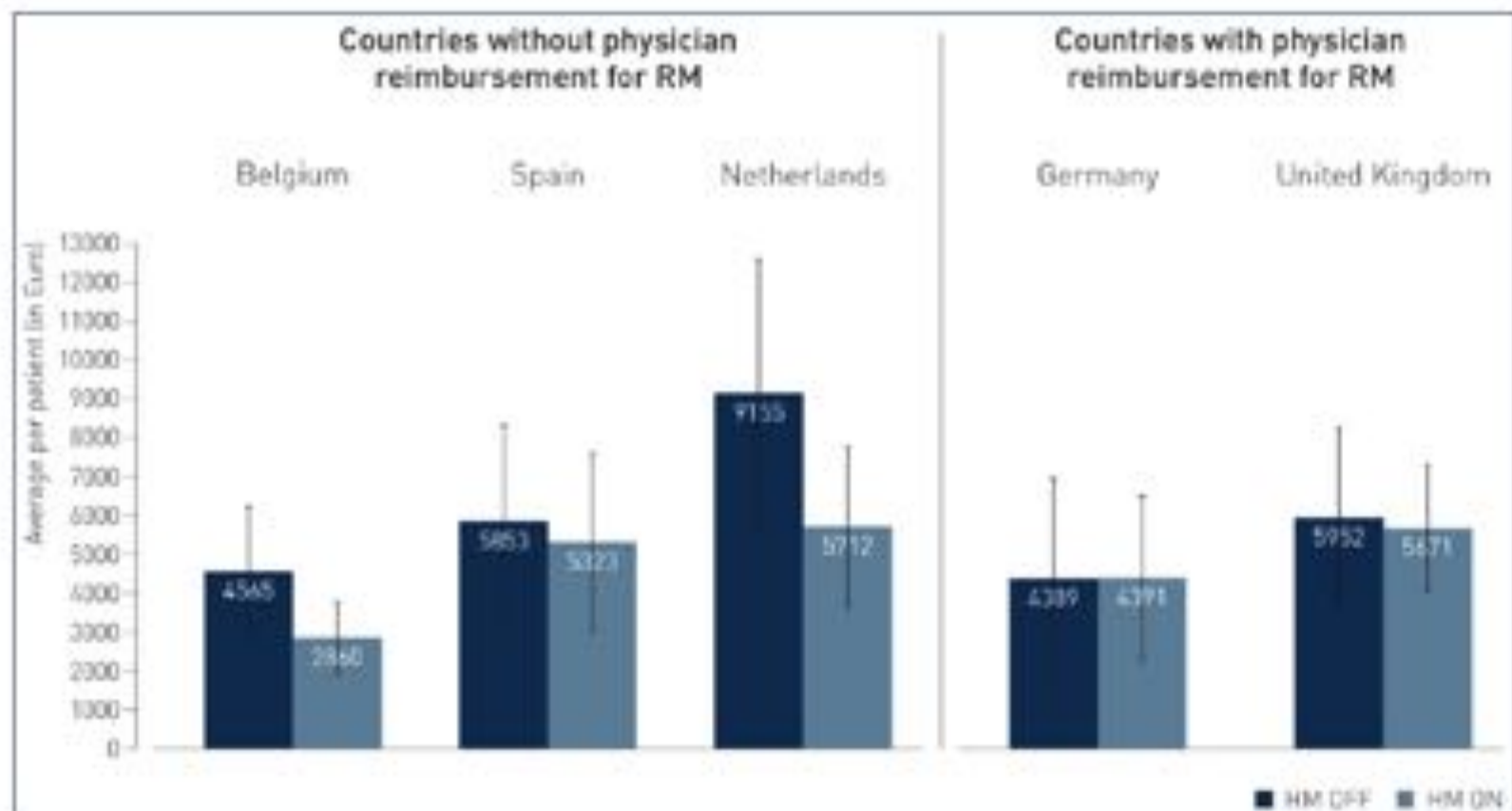
# Country dependent variations

## Provider perspective



# Country dependent variations

## Payer perspective



Even in countries with remote monitoring reimbursement (UK and Germany), total costs for insurers over 2 years of follow-up do not increase.

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Remote monitoring for patients with  
implanted defibrillators

Technology evaluation and broader  
regulatory framework

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*KCE reports 136C*

INGAARD VANCK, SERGE STROOBANDT, SOPHIE GERKENS, CHRIS DE LAET

**Belgian Health Care  
Knowledge Centre**

**September 2010**

“As long as benefits for the patient or the healthcare system are not clearly demonstrated, regular reimbursement for remote monitoring should remain out of scope. Even conditional reimbursement of remote monitoring irrespective of the medical application, should only be considered once there are sufficient indications of efficacy and safety.... »



Ont Health Technol Assess Ser. 2012;12(1)

## Internet-Based Device-Assisted Remote Monitoring of Cardiovascular Implantable Electronic Devices: An Evidence-Based Analysis



G Pron, I Ieraci, K Kaulback, Medical Advisory Secretariat, Health Quality Ontario.

Visits per Patient-year (over 15 months)	Standard Care	Remote Monitoring
Average total in-office visits per patient year	3.07	1.92
Average <u>scheduled</u> in-office visits per patient year	2.12	0.51
Average remote-monitoring visits per patient year		1.41
<b>Average costs</b>		
Average cost per in-office visit	\$140.45	
Average cost per remote-monitoring visit		\$105.85
<b>Total costs</b>		
Total cost (over 15 months)	\$1,364,161.00	\$853,022.00
<i>Annualized costs</i>	\$1,091,329.00	\$682,418.00
<i>Annual cost per patient</i>	\$262.12	\$163.91
<b>Annual incremental cost of remote monitoring</b>		<b>-\$408,911.00</b>
<b>Annual incremental cost per patient</b>		<b>-\$98.22.00</b>

# HAS

HAUTE AUTORITÉ DE SANTÉ

COMMISSION NATIONALE D'EVALUATION  
DES **DISPOSITIFS MEDICAUX** ET DES **TECHNOLOGIES DE SANTE**

AVIS DE LA CNEDIMTS

09 juillet 2013



# Reimbursement of remote device management in Europe



# *Moving towards good practice in the reimbursement of CIED telemonitoring*

A study conducted in  
five European countries:  
Germany, Italy, Spain, the  
Netherlands and the UK.

Sponsored by:



Supported by:





# Adoption of remote management

- **Many incentives**

better patient care, guidelines, improved efficiency, higher income...

- **Many hurdles**

reimbursement, costs, workload, paradigm shift

- **⇒ Improve workflow**

nurse triage, integrated diagnostics, automated data transfer

- **⇒ Obtain reimbursement**

role of national societies and working groups



Hôpitaux  
Universitaires  
Genève

Thank you !

