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week

11 - 13 MAY 2015
RIGA, LATVIA

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Ministry of Health
Republic of Latvia

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Commission




KSYOS TELEDERMATOLOGY

POTENTIAL IN EUROPE

Prof. Dr. L. Witkamp
KSYOS TeleMedical Centre

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*230.000 KSYOS TeleConsultations have
prevented 180.000 (~70%) physical
referrals to the hospital*



KSYOS TeleMedical Centre

- KSYOS Health Management Research founded in 2000
- KSYOS TeleMedical Centre founded in 2005
- TeleDermatology Consultation since June 2005
- March 2015: 4.500 GP 's; 2.500 Medical Specialists/paramedics
- March 2015: 270.000 TeleConsultations
- Contracts with all health Insurance companies in NL and NHS in UK
- Pilots in Spain, Norway and Switzerland
- Expanding to TeleDiagnosis, TeleMonitoring and Self Management



KSYOS TeleDermatology



KSYOS TeleOphthalmology



KSYOS TeleCardiology



KSYOS TelePulmonology



KSYOS TeleMedical Centre

As a Health Institution KSYOS delivers within all legal frames:

- Medical definition of the process
- Organization in the region
- KSYOS Electronic Health Record integrated in regional health IT infrastructure
- Digital camera's, dermatoscopes
- Education, onsite training
- Liability insurance
- Administration and finance
- Helpdesk
- Monitoring
- Reporting of Quality Indicators

Hardware

KSYOS camera



KSYOS dermatoscope



iPhone App


”



iPhone app KSYOS TeleDermatology

with direct upload of pictures in KSYOS Electronic Health Record





The TeleDermatology process

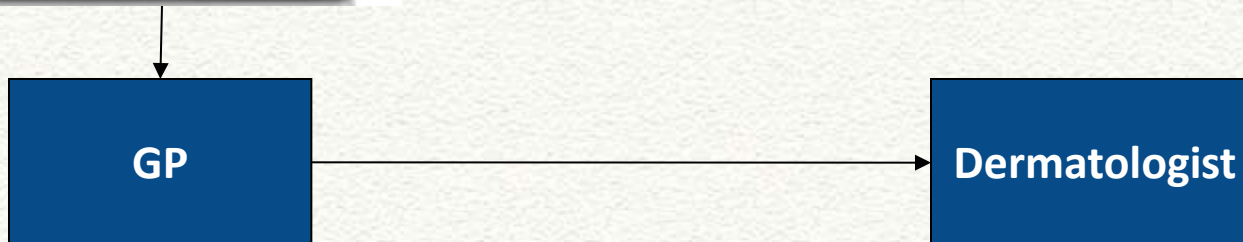
a practical case

Process of TeleDermatology



Skin pictures

- + Patient history
- + Medication
- + Specific questions

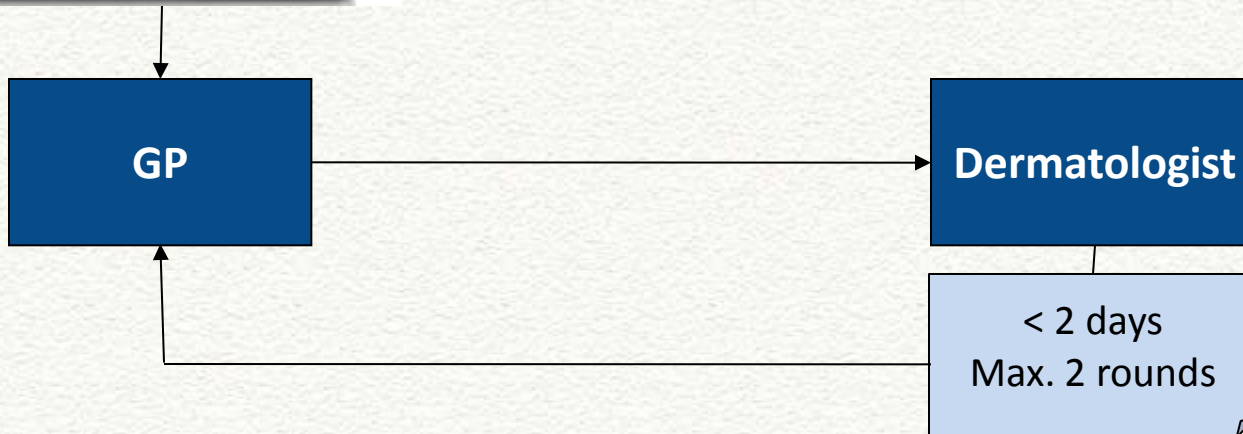


Process of TeleDermatology



Skin pictures

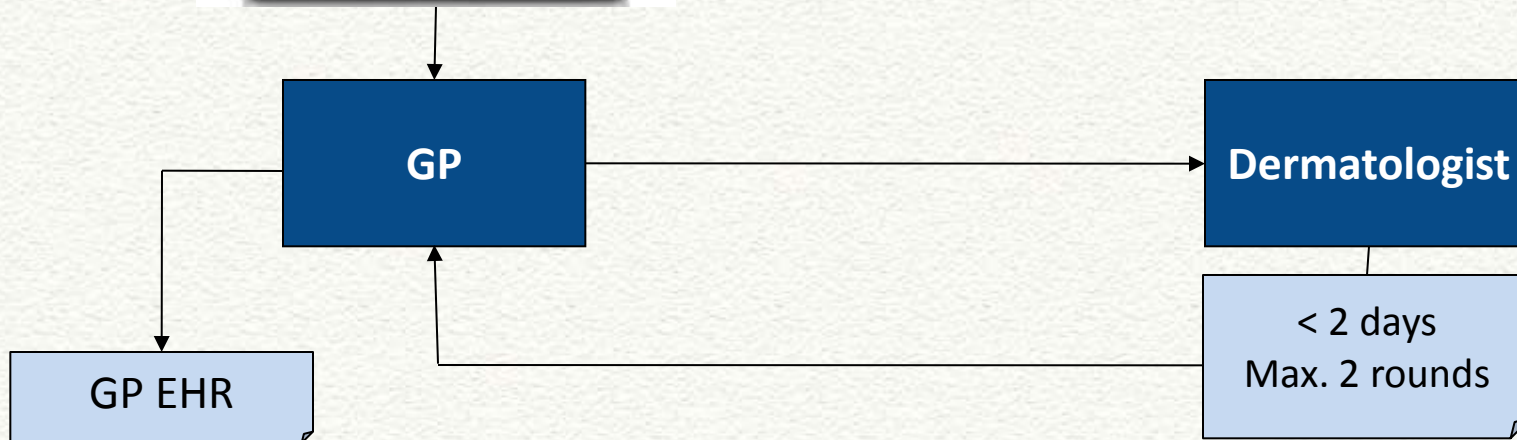
- + Patient history
- + Medication
- + Specific questions



Process of TeleDermatology

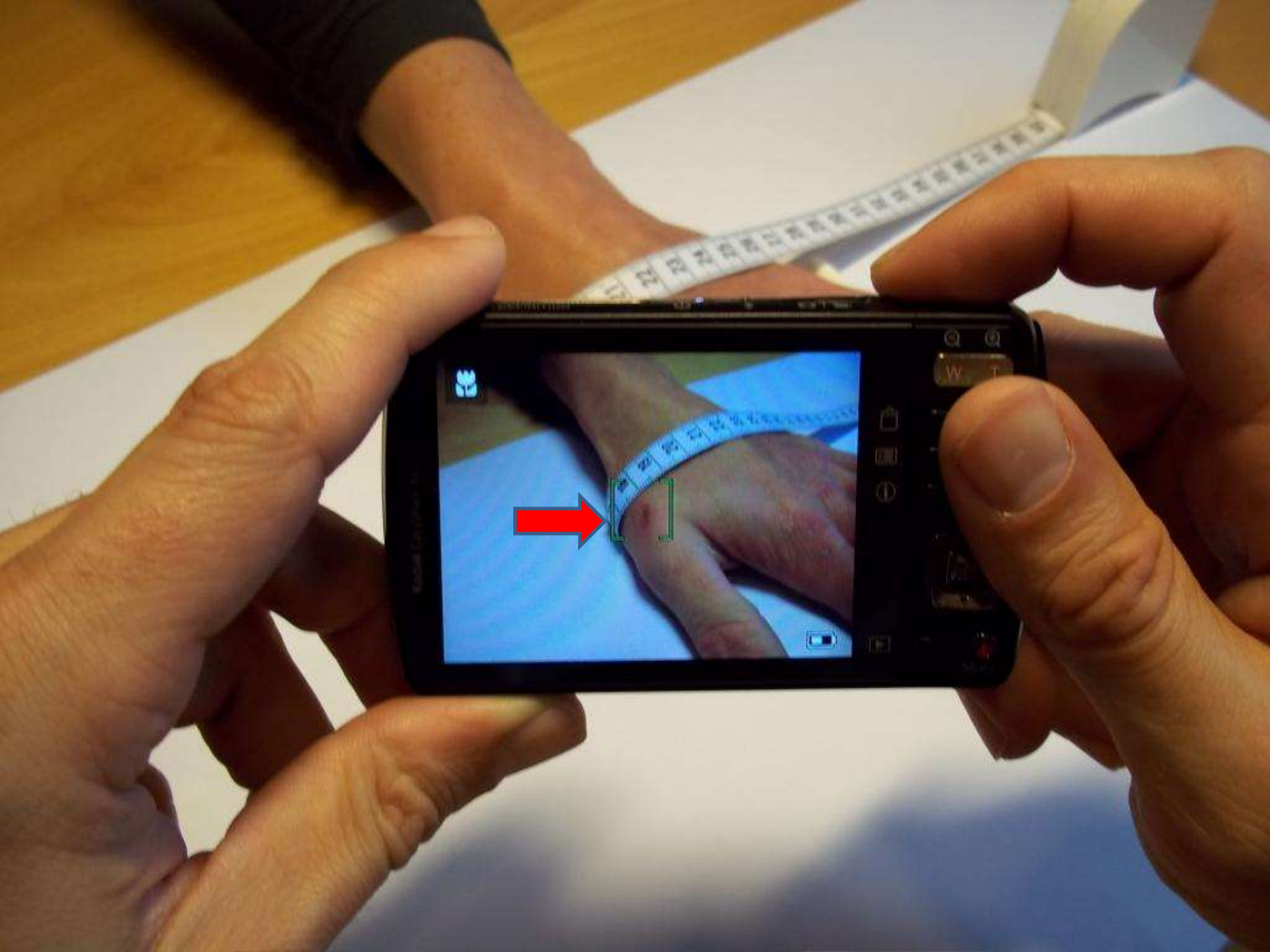


Skin pictures
 + Patient history
 + Medication
 + Specific questions



11 - 13 MAY 2015
 RIGA, LATVIA







Welcome

New Consultation

Open Consultation

Closed Consultation

Settings

Logout

Consult

Patient data:

First name(s)

Surname *

Gender *

☐ Male ☐ Female

Address

Postcode/tc

Date of birth

Email address

Telephone

NHS number

Permission

Photos



Evaluation question

Would you have referred this patient to a Consultant Dermatologist without TeleDermatology service?

☐ Yes

☐ No

Ok

Medication

no.	Type	Dosage	Since
1			
2			
3			

Comments

Institution *

-- Select Institution --

Consultant

Welcome

New Consultation

Open Consultation

Closed Consultation

Settings

Logout

Consult

Patient data

First name(s)

Surname *

Gender *

Address

Postcode/town

Date of birth *

Email address

Telephone no.

NHS number *

Permission for this TeleConsult * ☒ Patient has given consent

Testperson

☐ Male ☒ Female

01 - 01 - 1978

1111111111

Medication

no.	Type	Dosage	Since
1			
2			
3			

Photos



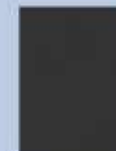
Delete



Delete



Delete



Add

Referral letter

Referral reason gambas. Not familiar with allergies.
Locoidcreme didn't help.
Exanthema and annular desquamation
DD: allergy or pityriasis versicolor?

Comments NB: I did not make a test on funghi.

Institution * Test Hospital

Consultant Test Consultant,

Save

Save and Send

-Referral Letter GP-

Referral Reason:

Itchy torso and arms, after consumption of gambas. Not familiar with allergies. Locoidcreme didn't help.

Exanthema and annular desquamation

DD: allergy or pityriasis versicolor?

Comments:

NB: I did not make a test on funghi.







Van: KSYOS TeleMedisch Centrum [ksyos@ksyos.org]
Aan: i.schepers@ksyos.org
CC:
Onderwerp: Consultant Dermatologist's reply

Dear Mr. GeneralPractitioner1,

There is a new message available in your TeleDermatology Consultation service. Please go to <https://portal.ksyos.org/tdcs-uk> and log on.

Kind regards,

The KSYOS team

KSYOS TeleMedical Centre
Amsterdamseweg 206
1182 HL Amstelveen
The Netherlands
T: +31(0)20 6000060
F: +31(0)20 2031121
E: info@ksyos.org
<http://www.ksyos.org>

Welcome

-- All --

Filter

New Consultation

Open Consultation

Closed Consultation

Settings

Logout

Date	Name	Status	GP	Consultant	Institution
2010-10-01 16:13:06	Testperson,	Answered by Consultant	GeneralPractitione	Test Consultant,	Test Hospita
0000-00-00 00:00:00	Brown,	Temporarily saved	GeneralPractitione		Test Hospita

Done

WON

Internet | Protected I

[Welcome](#)[New Consultation](#)[Open Consultation](#)[Closed Consultation](#)[Settings](#)[Logout](#)**Consult**

Patient data

1111111111

01-01-1978

Female

Testperson

Photos



Referral letter

Ref. reason Itchy torso and arms, after consumption of gambas. Not familiar with allergies. Locoidcreme didn't help. Exanthema and annular desquamation

Comments NB: I did not make a test on funghi.

Test Hospital - Test Consultant

Medication

no.	Type	Dosage	Since
1			
2			
3			

Consultant Dermatologist's report

Description of findings Erythematousquamous pityriasiform, partly oval macules and plaques on trunk and arms, partly excoriated.

Diagnosis Pityriasis rosea (working diagnosis)
DD:
Pityriasis lichenoides acuta/chronica

Additional questions

How was the time relation to the consumption of gambas (gambas ususally give a type IV allergic reaction with urticaria and swelling of

Treatment recommendations

Heals spontaneously, eventually shortly betametason ointment 1dd for 1 week for itch, then tapering off. Bloodtest Lues

Do you need to see this patient urgently ☐ Yes ☒ No

GP's response

Answer/question

Comments

[Close](#)[Save](#)[Save and Send](#)

Welcome

New Consultation

Open Consultation

Closed Consultation

Settings

Logout

Consult

Patient data

1111111111

01-01-1978

Female

Testperson

Photos



Referral letter

Ref. reason Itchy torso and arms, after consumption of gambas. Not familiar with allergies. Locoidcreme didn't help. Exanthema and annular desquamation

Comments NB: I did not make a test on funghi.

Test Hospital - Test Consultant

Consultant Dermatologist's report

Description of findings

Erythematousquamous pityriasiform, partly oval macules and plaques on trunk and arms, partly excoriated.

Additional questions

How was the time relation to the consumption of gambas (gambas ususally give a type IV allergic reaction with urticaria and swelling of

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Pityriasis rosea (working diagnosis)
DD:
Pityriasis lichenoides acuta/chronica

Treatment recommendations

Heals spontaneously, eventually shortly betametason ointment 1dd for 1 week for itch, then tapering off. Bloodtest Lues

Do you need to see this patient urgently ☐ Yes ☒ No

GP's response

Answer/question

Time relation: 8-12 hours after eating gamba's

Comments

Consultant Dermatologist's response

Treatment recommendations

Allergic reaction not probable

Comments

Close

Welcome

Consultation

Consultation

Consultation

Settings

Logout

Consult

Patient data

1111111111101-01-1978Female

Testperson

Medication

no.

Type

1

2

3

Consultant

Description of findings

Diagnosis

DD:

Pityriasis lichenoides acuta/chronica

GP's response

Answer/question




Time relation: 8-12 hours after eating gamba's

Consultant Dermatologist's response

Treatment recommendations

Allergic reaction not probable

Photos



Handwritten notes

Hand and arms, after consum

Not familiar with allergies.

reme didn't help.

ema and annular desquamati

d not make a test on funghi

ospital - Test Consultant

the time relation to the cons

e (gambas usually give a ty

action with urticaria and sw

ntaneously, eventually short

betametason ointment 1dd for 1 week

itch, then tapering off. Bloodtest Lues

Do you need to see this patient urgently

Evaluation questions

1. Will you still refer the patient to a Consultant?

☐ Yes

☐ No

2. To what degree has the answer from the Consultant helped you?

☐ Not

☐ A little

☐ Average

☐ A lot

3. Have you learned from this teleconsultation?

☐ Not

☐ A little

☐ Average

☐ A lot

Ok

recommendations

betametason ointment 1dd for 1 week

itch, then tapering off. Bloodtest Lues

Do you need to see this patient urgently

☐ Yes

☒ No



Patient data

First name(s)

Surname

Gender

Address

Number

Postcode

Town

Date of Birth

Email address

Telephone no

NHS number

Testperson

female

1978-01-01

undefined-

1111111111

Medication

NR

1

2

3

Type

Dosage

Since

Photos



Referral letter

Referral reason

Itchy torso and arms, after consumption of gambas. Not familiar with allergies. Loodicrowe didskitTM help. Erythema and annular desquamation DD: allergy or pityriasis versicolor?

Comments

NB: I did not make a test on fungi.

Consultant Dermatologist response

Description of findings

Erythema-squamous pityriiform, partly oval macules and plaques on trunk and arms, partly excoriated

Diagnosis

Pityriasis rosea (working diagnosis)DD:Pityriasis lichenoides acuta/chronicaLues stage 2/ type IV allergic reaction to gambas

Treatment recommendations

Heals spontaneously, eventually shortly before/when ointment 1dd for 1 week for itch, then tapering off. Bloodtest Lues

Additional questions

How was the time relation to the consumption of gambas (gambas usually give a type IV allergic reaction with urticaria and swelling of mucosa) Airways/respiratory problems? Unprotected sexual contact (Lues II)?

Urgent visit requested

no

GP response

Answer / Question

Time relation: 8-12 hours after eating gambasTMs

Comments

Consultant Dermatologist report

Treatment recommendations

Allergic reaction not probable

Comments



Referral criteria

TeleDermatology can be used:

- To prevent a physical referral
- To get advice for both diagnosis and treatment
- To offer better triage for the patient
- To reduce within lists

Teledermatology applied following patient selection by general practitioners in daily practice improves efficiency and quality of care at lower cost

J.P. van der Heijden, N.F. de Keizer,* J.D. Bos, P.I. Spuls and L. Witkamp†

Departments of Dermatology and *Medical Informatics, Academic Medical Centre, University of Amsterdam, PO Box 22700, 1100 DE Amsterdam, the Netherlands

†KSYOS TeleMedical Centre, Amstelveen, the Netherlands

Summary

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Job van der Heijden.

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Accepted for publication

26 June 2011

Funding sources

Funding for this study was provided by the Department of Dermatology of the Academic Medical Centre in Amsterdam.

Conflicts of interest

J.P.v.d.H. is employed (part-time) by KSYOS TeleMedical Centre, and L.W. is the Director of KSYOS TeleMedical Centre. The remaining authors state no conflicts of interest.

DOI 10.1111/j.1365-2133.2011.10509.x

Background Teledermatology, the application of telemedicine in the field of dermatology, has similar accuracy and reliability as physical dermatology. Teledermatology has been widely used in daily practice in the Netherlands since 2005 and is fully reimbursed.

Objectives This study prospectively investigated the effect of teledermatology on efficiency, quality and costs of care when integrated in daily practice and applied following patient selection by the general practitioner (GP).

Methods Teledermatology consultations between GP and regional dermatologist were performed in daily GP practice in the Netherlands. Efficiency of care was measured by the decrease in the number of physical referrals to the dermatologist. Quality of care was measured by the percentage of teleconsultations for second opinion, physical referrals resulting from these teleconsultations, the response time of the dermatologists and educational effect experienced by the GP. Costs of conventional healthcare without teledermatology were compared with costs with teledermatology.

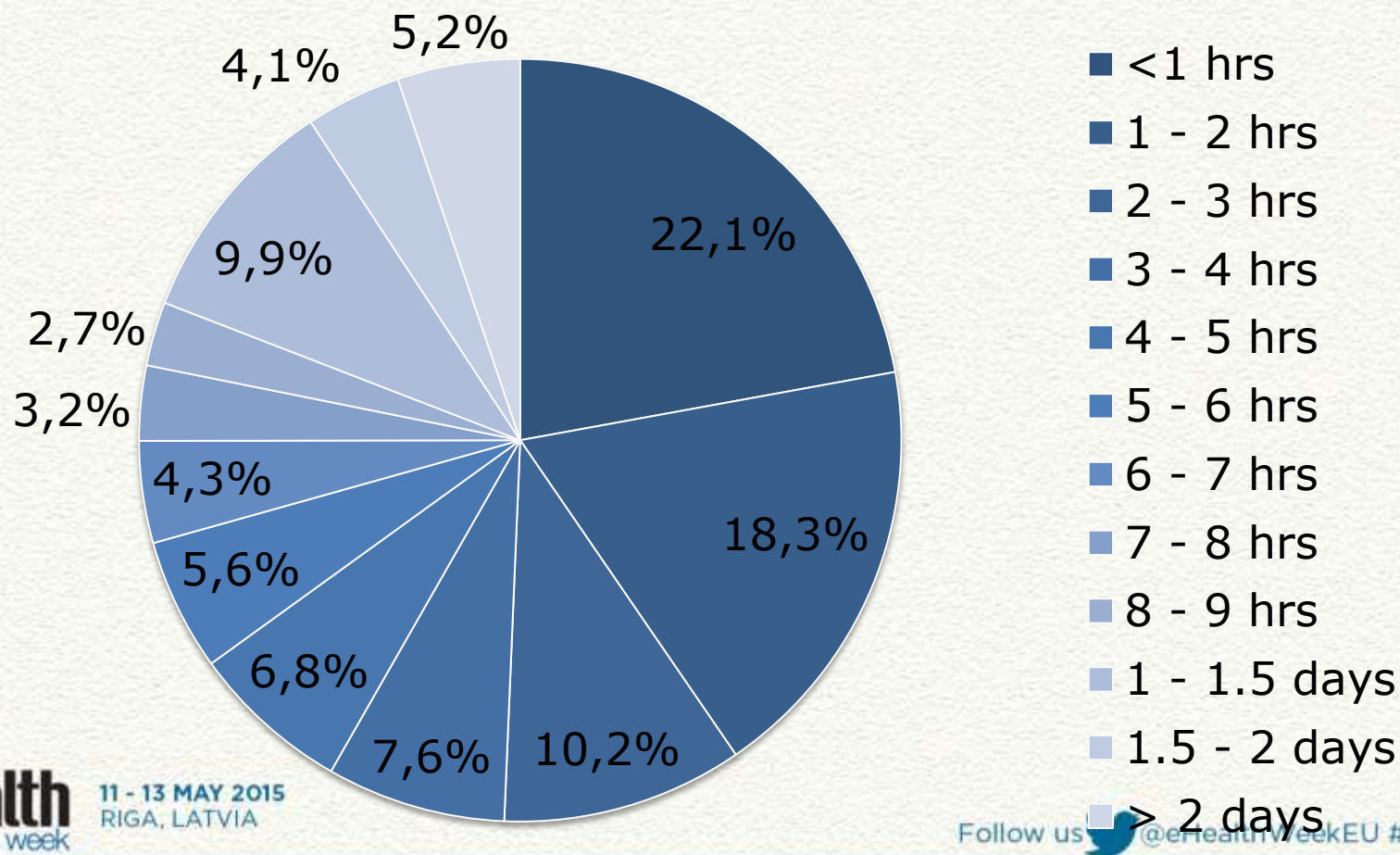
Results One thousand, eight hundred and twenty GPs and 166 dermatologists performed teledermatology, and 37 207 teleconsultations performed from March 2007 to September 2010 were included. In the group of patients where the GP



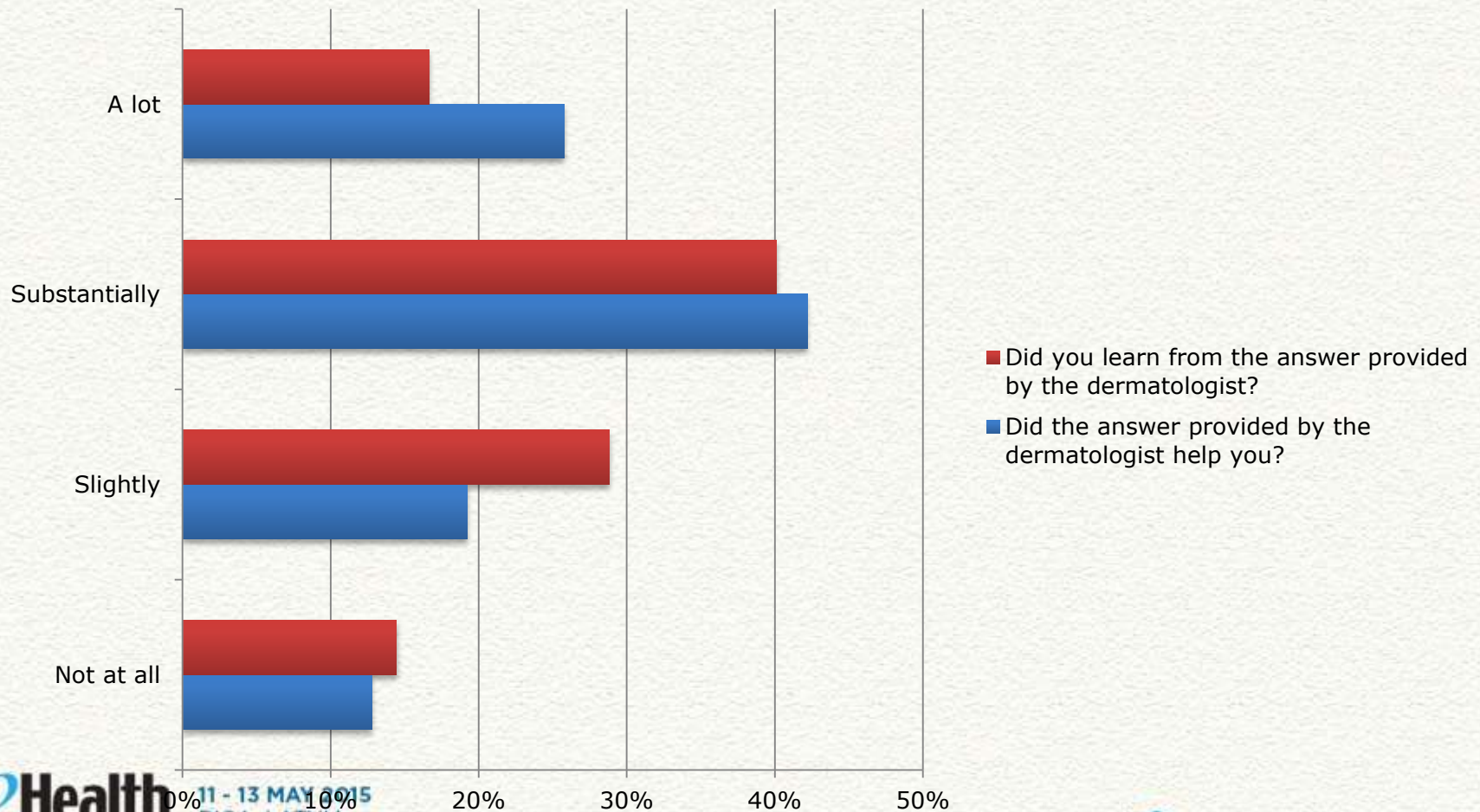
Avoided referrals

- 73% prevented referrals in group TD for referral prevention

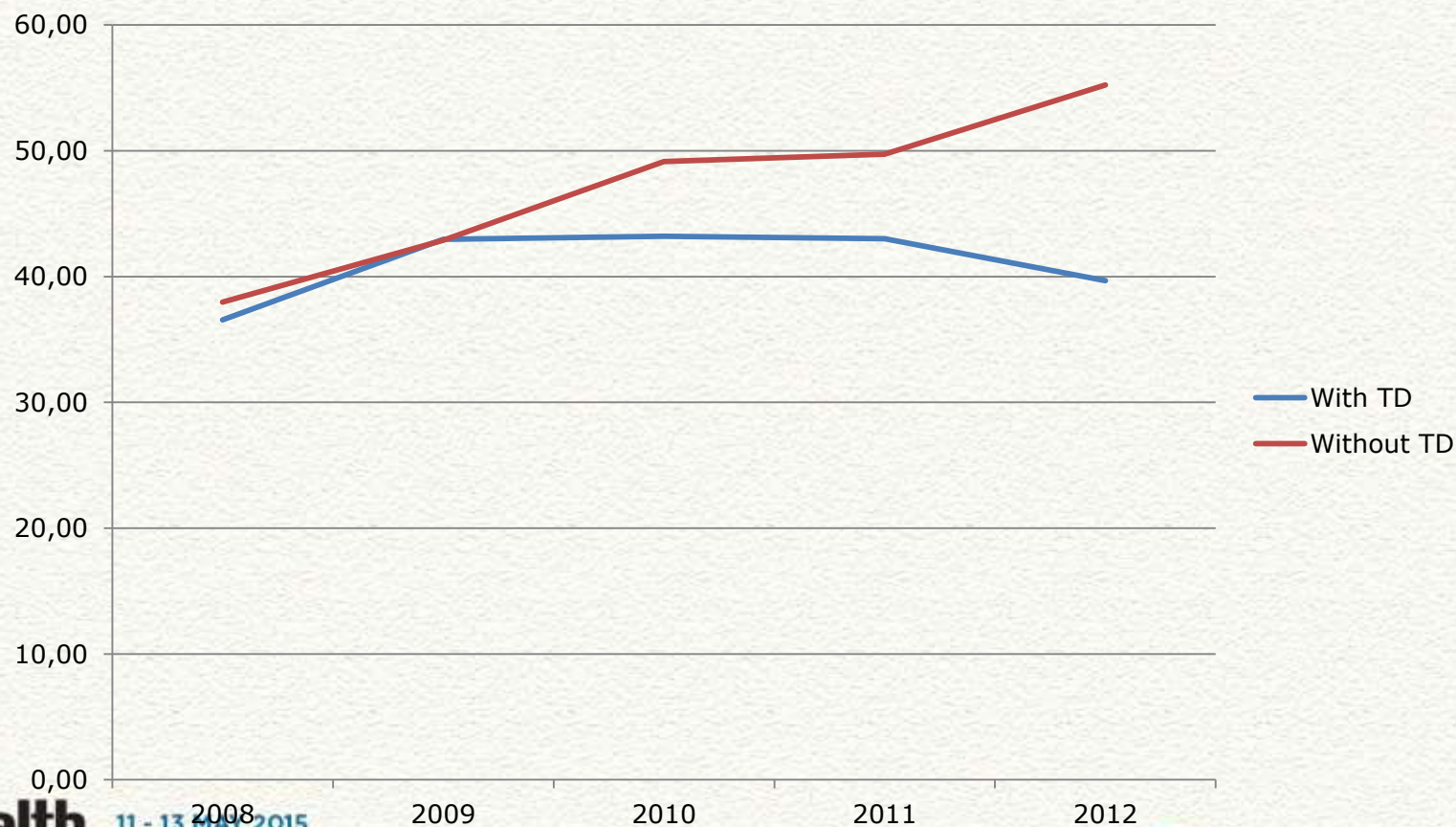
TDC response time



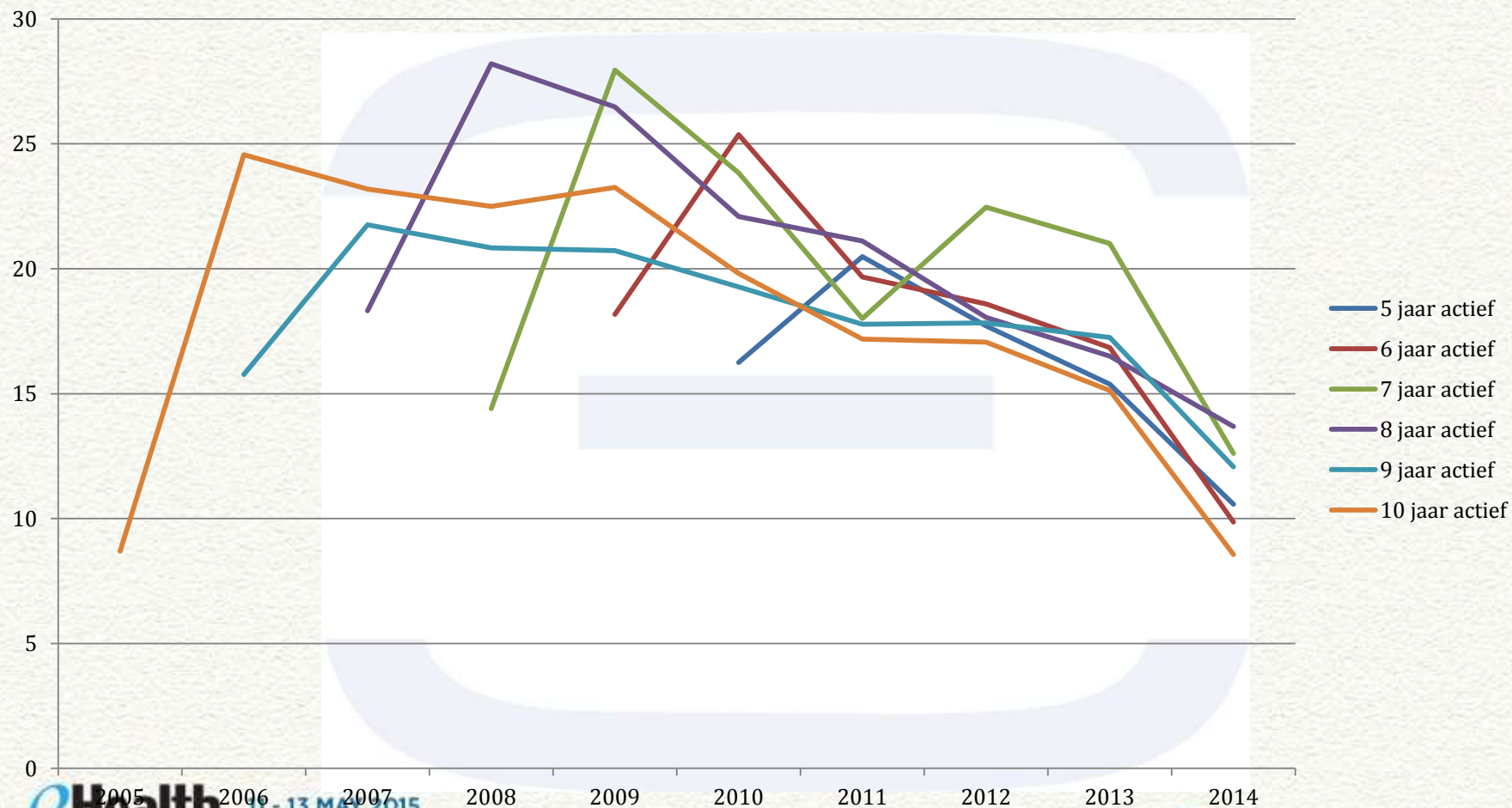
TDC learning effect



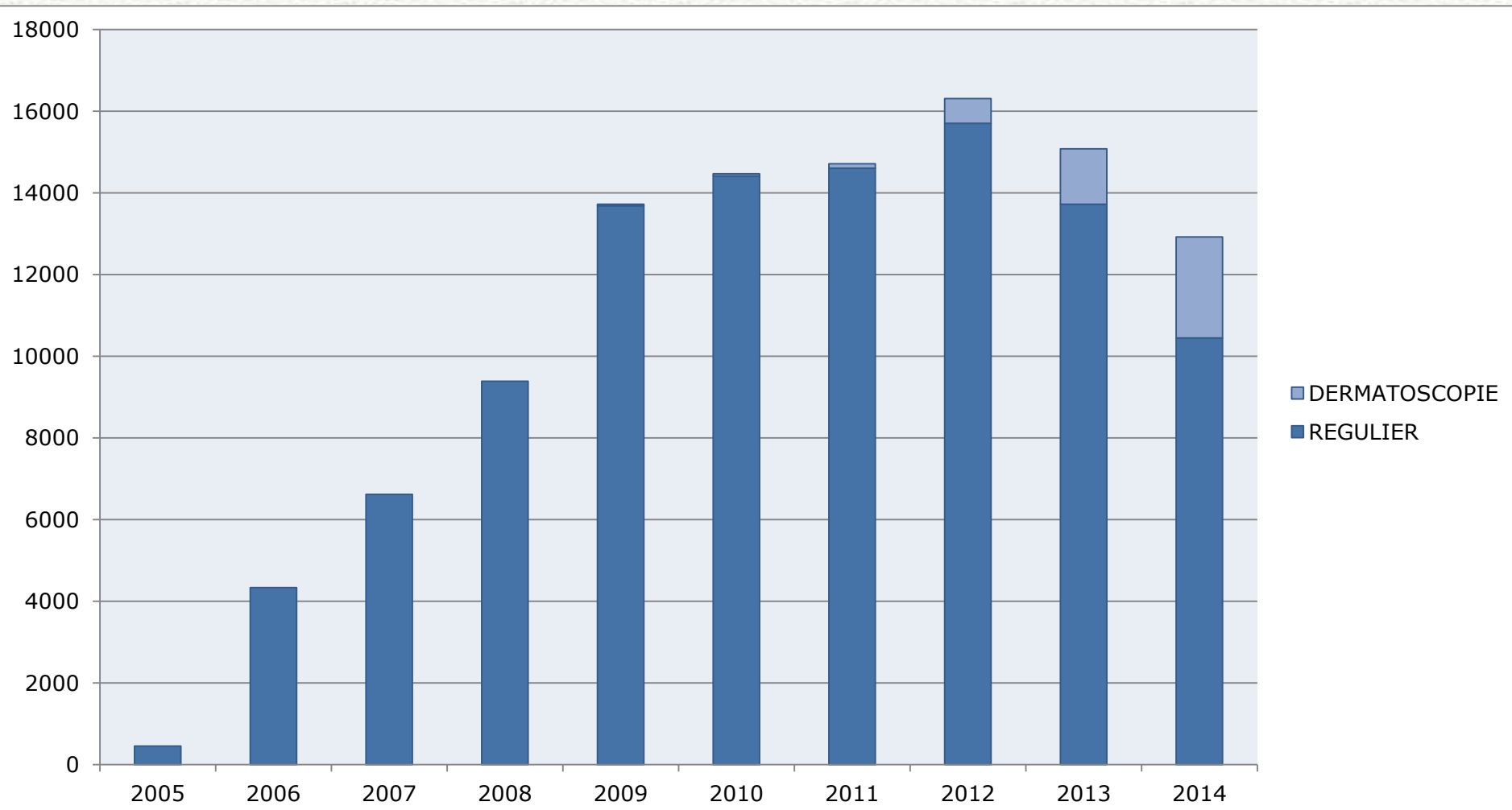
Long Term Effect on physical referrals Per GP in The Netherlands



Decrease in TDC's per GP due to learning effect



Decrease in total TDC's due to learning effect





Results

- 70% of all live referrals could be prevented
- Significant reduction of waiting list
- Average response time 4.6 hours (median 2 hours!).
- 40% cost reduction.
- TeleDermatology enriches GP's and dermatologists' work experience.
- Quality improvement and learning effect



Challenges in setting up TeleMedicine services *

Challenge:	TD with KSYOS:
Obtaining reimbursement	to be resolved in regional setting
Resolving technical-related issues	resolved
Communicating with referring providers	resolved
Setting up regional operation	resolved
setting up staff education programmes	resolved



Reimbursement options

- Government based
- Insurance based
- Patient based
- Hospital based
- Innovation based
- Primary care group based



THANK YOU



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Professor Academic Medical Centre

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