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Teledermatology as a Service Tool for Hospitals.

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The broad and upscaled use of telemedicine is hampered by rigid decision structures, slow adaptation processes and concerns for its consequences. Health Management Practice (HMP) addresses these issues by developing, investigating and implementing telemedicine tools in a modular way. KSYOS TeleMedical Centre, the first virtual healthcare institution in The Netherlands, has successfully applied HMP on Teledermatology. KSYOS has been able to prove on a broad scale that teledermatology has led to higher satisfaction and learning effect, a 63% reduction of all physical referrals to dermatologists, 21% cost savings, and better quality of care.

Furthermore, teledermatology has proven to be an excellent tool for hospitals to balance their waiting lists, increase and strengthen their contact area with general practitioners, and provide them and the patients with better service. HMP has enabled KSYOS to perform over 10.000 Teledermatology consultations, expand Teledermatology to other EU countries, as well as to other areas such as teleophthalmology, telespirometry and telecardiology.

Health Management Practice

With the use of Health Management Practice, private and public parties and independent scientific institutes jointly develop telemedicine tools, study their effect on efficiency increase of the primary healthcare process and empower their modular and subsequent upscaled introduction in regular care. It enables a step by step introduction of new telemedicine tools in daily care, not by weakening it but on the contrary by intensifying it.

All stakeholders – manufacturers, users, policy makers and health insurers – are involved in the design of practice and reimbursement research. The interested parties together establish a price for the use of the telemedicine tool, and predefine performance indicators that are conditional for reimbursement.

	higher satisfaction	cost reduction and/or higher production volume at equal or lower costs	better quality of care
Patients	answer within 2 days, no waiting list	accessibility of care in the coming decades, no costs for travelling and absence of work	quicker and better care, advice in case of non external, emergencies
General Practitioner	working satisfaction, service to the patient, learning effect, innovation	extra budgetary income	learning effect, advice, emergencies
Dermatologist	working satisfaction, service to GPs, increased adherence	extra budgetary income	learning effect, more time for more dermatology related patients
Hospital	service to GPs, increased adherence	increased adherence to GPs, closure of waiting lists, marketing instrument, free service (no investment for hospital)	
Policy Maker	innovation	accessibility of care in the view of the aging population	quicker better care
Health Insurance Company	service to clients in the view of the aging population	accessibility of care in the view of the aging population	quicker better care, better service for clients

Table: Perceived benefits of teledermatology

Health Management Practice has been successfully applied to develop, investigate and upscale Teledermatology in the Netherlands. Teledermatology has proven to enable the general practitioner to provide a dermatologist with digital images and short description through a secure internet connection. Teledermatology has led to higher volume growth of dermatological care at equal costs in the Netherlands.

KSYOS Teledermatology Consultation System (TDCS®) as an Integrated Service.

Health Management Practice has led to the introduction of the KSYOS Teledermatology Consultation System (TDCS®), through which general practitioners safely perform teledermatology consultations thanks to the unique health worker identification passport (UZI-pas), guaranteeing all patient data to remain confidential, complete and available. This digital pass is issued by the Dutch Ministry of Health. The TDCS® does not only include software, but also the provision of hardware (digital camera, docking station, UZI-pas and card reader), quality monitoring, helpdesk, on site monitoring, billing, administration, education, and malpractice insurance.

On 1 June 2007, a total of 1732 health workers were working with the UZI-pas; 733 of them provided by KSYOS for the use of the KSYOS Teledermatology System (43% of all UZI-passes in The Netherlands). This UZI-pas can be used for different other (transmural) services and by other institutions. Teledermatology thus adds significantly to the development of the national health infrastructure and the electronic patient record.

Number of Prevented Physical Referrals to the Dermatologist

KSYOS has monitored the general practitioner's decision points before and after the teledermatology consultation. Out of 1,369 TeleConsultations evaluated, 71.9% of the population would have been referred to the dermatologist without the availability of teledermatology (Group A). In the whole population, the total number of physical referrals to the dermatologist decreases from 71.9% to 26.8%, a reduction of 63%. This reduction includes extra referrals due to advice, quality improvement and potential lowering of the referral threshold.

This reduction does not include the long term reduction of referral due to the learning effect of teledermatology. Reductions of referrals have, of course, a non negligible cost reducing effect as well, in this case 21%.

The faster response time of the dermatologist also offers better service to the patient. Mean response time of the dermatologist is 5.6 hours, 95% of patients received a response within two working days. Most TeleConsultations were sent at the end of the morning or afternoon. This applied also for the response by the dermatologist.

Perceived Benefits of TeleDermatology

In interview sessions among patients, general practitioners, dermatologists, hospital management, policy makers and account managers of health insurance companies, Teledermatology was considered to lead to increased service, more working satisfaction, cost savings and higher production volume at equal costs as well as better quality of care.

Implementation of Teledermatology

Eight percent of all general practitioner consultations concern dermatology of which 93% are treated by the general practitioner. Within the last 1.5 years, KSYOS TeleMedical Centre has connected 1.500 general practitioners and 142 dermatologists. In total, over 10,000 TeleConsultations have been performed through KSYOS.

KSYOS TeleMedical Centre: The First Virtual Hospital in the Netherlands

KSYOS TeleMedical Centre has been officially recognised in December 2005 as a healthcare organisation performing teledermatology consultations. KSYOS contracts health insurance companies which pay for each teleconsultation performed. KSYOS in return pays the general practitioners and dermatologists, manages security, software and hardware (digital camera, docking station, UZI-pas and card reader), all logistics and infrastructure with ongoing instruction, quality monitoring and helpdesk functions, takes care of invoicing and account management, price negotiating, quality monitoring and liability insurance. It is the partner for (future) parties that certify telemedicine in terms of healthcare service, the logistical process with regards to security and privacy rules, and the information process with regards to data storage, continuity and accessibility of information. In this scheme, KSYOS is a new business partner for integrated services for health insurers.

TeleDermatology as a Service Tool for General Hospitals

With an ageing and more demanding population, healthcare provision is bound to undergo drastic changes. Telemedicine is perceived as an excellent tool to respond to these changes, combining innovating techniques, evolving working conditions, prevention and education.

On one hand, it enables these hospitals to further focus on highly specialised care as, with the help of telemedicine, less routine care will end up with them. On the other hand, telemedicine enables these hospitals to maintain their supervising role in "bulk routine care".

In the Dutch setting, KSYOS has taken care of all safety, quality and administrative issues for general practitioners and has contracted all health insurance organisations for reimbursement. It has therefore enabled hospitals to offer this innovative service to their general practitioners and

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dermatologists without any investment, thereby reducing any risk for the hospital. TeleDermatology allows hospitals and dermatologist to cut their waiting lists.

Thus, hospitals deliver quicker and better care to general practitioners and patients without cannibalising on their own production. Teledermatology also strengthens the health chain and contacts between general practitioners and dermatologists.

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