

## Teleconsulting – An Opportunity or an Enemy?

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Consultations in dermatology should, whenever possible, be performed face to face (FTF). Patients appreciate in-person contacts with the physician, and physicians are more certain about their judgements when they have met the patient in real life. There are however situations when FTF consultations are not easily achieved, e.g. when there is a long distance to a specialist or there is a regional lack of specialists. In these situations we would benefit from being able to perform consultations from a distance. New technology offers both distant communication and the rapid exchange of images, such as visual impressions of a skin condition. In using this technology two types of telematic consultation have been introduced into dermatology. Store-and-forward technology has gained popularity in the USA, while real-time video-conferencing (RTV) has been more popular in Europe. Replacing FTF consultations with telematic consultations, however, raises concerns about the maintenance of qualitative medical service.

The first of these concerns is that our distant diagnosis could be incorrect. Optimal conditions for making a correct diagnosis are a

prerequisite for a good consultation. This prerequisite may be difficult to fulfil, however, since even between 2 observers performing FTF consultations there will be a disagreement about the diagnosis in some 6% of all cases (1). For lack of a true diagnosis most evaluations of telematic consultations in regard to the FTF diagnosis are referred to as the standard goal. This is of course an overestimation and must be kept in mind when we evaluate results from studies comparing diagnostic concordance. In published studies the interobserver diagnostic reliability of RTV consultations has varied from 51 to 80% and in Store-and-forward consultations from 70 to 90% (2). This is not optimal, but quite satisfactory. Interestingly the diagnostic reliability has been higher for Store-and-forward (87–95%) than for RTV consultations (63–71%) when intraobserver reliability is assessed (2). This could be attributed to better image quality in Store-and-forward compared to videos.

As in FTF consultations, a telematic consultation should end with a management plan, an essential part of the quality of the consultation. To some extent a management plan of good quality can even compensate for a false diagnosis. The management plan consists of recommendations for both treatment and further evaluations. These two aspects can be used separately to assess the accuracy of management between the two types of consultations. Examples of variables used to measure concordance of

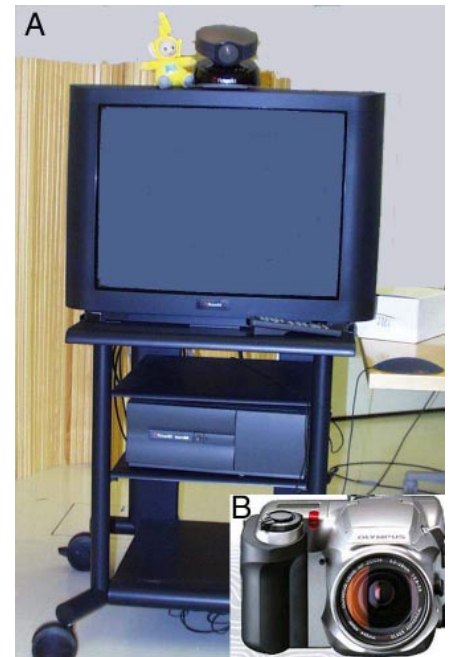


Fig. 1: A. Equipment for real-time video-consultations: camera, monitor, coder-decoder device and microphone. B. Video still-camera used for store-and-forward consultations.

management plans are the number of referrals, the proportion of suggested biopsies, and the ratio between suggested systemic and local treatments. The agreement between FTF consultations and teleconsultations for management plans has varied from 64 to 72% for RTV and between 87 and 100% for Store-and-forward consultations (2).

The quality of a management plan can also be judged from its influence on cost. In Helsinki we compared RTV consultations with FTF consultations in a study where patients were assigned to either type of consultation depending on referral centre; 22 and 25 patient in



Fig. 2: The author - a Teletubby

each respective group. We found no difference in the number of referrals and the number of patients to be recommended further investigations, but RTV consultations resulted in more treatment instructions. Our conclusion was that an RTV consultation seems not to increase the consumption of health care services.

How confident is a "tele-doctor" regarding his performance? Consulting dermatologists involved in teledermatology studies have been positive, but they may be biased as they have a special interest in information technology. On the other hand, dermatologists who are less experienced with information

technology can harbour a strong negative attitude for non-relevant reasons based on suspicions and fears. Many consultants prefer FTF consultations because they feel more confident with their judgements when based on conventional in-person examinations (3). Improvement in the quality of technology makes the basis for better confidence. This applies especially to RTV consultations, where affordable equipment is still hampered by weaknesses in image quality, especially blurred motion pictures. Store-and-forward technology already enables sufficient image quality, but a better exchange of information is needed. Probably a combination of digital images and real-time communication through an ordinary phone call would increase confidence.

The ultimate goal of medical care is of course a satisfied patient. Most clinical studies on the usefulness of teleconsultations have measured at least patient satisfaction. The immediate satisfaction of the patients has scored very high (2), but patients confronted with new technology tend to be enthusiastic and to overestimate their immediate satisfaction with its use, which could cause a positive bias. Younger patients seem to accept teleconsultation better than older people (4).

The question of quality in medical service is not answered until we ask "What really happened to the patient?" A "wrong" initial diagnosis

corrected with the contribution of a "correct" management plan can produce a helped and satisfied patient in the end. On the other hand, patients who are enthusiastic about the new technology and the untroubled way of meeting with doctors can turn into dissatisfaction when they have the final outcome in their hand. In a study comparing RTV and FTF consultations we did a follow-up survey 6 months after the initial consultation, by sending the patients a structured questionnaire. We asked the patients about their present status, whether they had been urged to make new visit to a physician and how pleased they were with the consultation. During these 6 months 44% and 46% of the patients in the RTV and FTF group, respectively, had revisited their GP because they still had problems with their skin condition. For each group, 19% and 31%, respectively, had been referred to the consulting hospital for further evaluation. Measured on a visual analogue scale graded from 0 to 10, overall satisfaction with the consultation decreased in both groups, i.e. by  $-1.2 \pm 3.7$  in the RTV group and by  $-1.4 \pm 4.5$  in the FTF group. The decrease in satisfaction is no surprise, but it is encouraging to note that there was no difference between conventional and telematic consultations.

The ultimate outcome of medical service must be measured as a sum of several interventions and can only be calculated after a sufficient follow-up period. In our experience the outcome of standard and

teleconsultations seems to be comparable. Teleconsultations do not increase the consumption of health care services and the estimation of quality seems not to decrease in time to any greater extent than is to be expected. Although teleconsultations cannot replace FTF consultations they provide dermatologists a way to practice

medicine that is not possible for all specialities.

**References**

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**Produkttresoré**

**1 LÄKEMIDDELSNAMN**  
 Metvix 100 mg/g kräm

**2 KVALITATIVT OCH KVANTITATIV SAMBAND ÖFVERHUVUDSAK**  
 Metvix kräm innehåller 100 mg/g av kemiska ämnet metaxalone (som är aktivt ämne).  
 För övriga innehållsämnen se 3.1.

**3 LÄKEMIDDELSFORM**  
 Kräm.

Metvix är godkänd för användning som...

**4 KLASSNING OCH EFFEKTER**

**4.1 Terapeutiska indikationer**  
 Behandling av svampinfektioner i huden som orsakas av dermatofyter och på huden på händer och fötter av svampinfektioner.  
 Behandling av hudinfektioner som orsakas av bakterier och på huden på händer och fötter av svampinfektioner.

**4.2 Dosering och administrering**  
 Metvix kräm ska användas...

**4.3 Kontraindikationer**  
 Metvix kräm ska inte användas hos patienter som är känsliga för metaxalone eller någon av de aktiva ingredienserna.

**4.4 Varningar och försiktighetsåtgärder**  
 Metvix kräm ska användas enligt följande...

**4.5 Interaktioner med andra läkemedel och växtämnen**  
 Inga interaktioner har observerats mellan Metvix kräm och andra läkemedel eller växtämnen.

**4.6 Gravitet och amning**  
 Metvix kräm ska inte användas under graviditet eller amning.

**4.7 Biverkningar**  
 De vanligaste biverkningarna är...

**4.8 Överdosering**  
 Inga överdoseringar har rapporterats.

**4.9 Förpackningsstorlekar**  
 Metvix kräm finns i förpackningar på 100 g och 30 g.

Dial med tillhörande sjukdomar (dial farmakokinetik)	Måttligt vanliga (≥1/10)	Reaktioner i huden, klåda, ödem, svullnad, utsläp, svårhet
	Vanliga (≥1/100, <1/10)	Prurit, akrosor, suppuration, blåsor, svår hudirritation, fjällning, hyperkeratoser
	Litit vanliga (≥1/1000, <1/100)	Urtikaria

Metvix kräm ska användas enligt följande...

**5.1 Farmakodynamik**  
 Metvix kräm är ett lokalt verksamt läkemedel som används för behandling av svampinfektioner i huden.

**5.2 Farmakokinetik**  
 Metvix kräm absorberas snabbt i huden och ger en hög koncentration av metaxalone i huden.

**5.3 Farmakodynamiska effekter**  
 Metvix kräm har en baktericid och fungicid effekt mot de svamparter som orsakar hudinfektioner.

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**6. REGISTRERING AV LÄKEMIDDELET**  
 Metvix kräm är registrerat i Sverige under namnet METVIX.

**7. NUMMER I REGISTRERINGSREGLERNA ÖVER LÄKEMEDEL OCH FARMACEUTISKA FÖRETAG**  
 Metvix kräm är registrerat i Sverige under namnet METVIX.

**8. DATUM FÖR FÖRSTA REGISTRERINGEN ÖVER LÄKEMEDEL OCH FARMACEUTISKA FÖRETAG**  
 Metvix kräm är registrerat i Sverige under namnet METVIX.

**9. DATUM FÖR ÖVERLYN AV REGISTRERINGEN ÖVER LÄKEMEDEL OCH FARMACEUTISKA FÖRETAG**  
 Metvix kräm är registrerat i Sverige under namnet METVIX.

