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*Published in:*  
Forum for Nordic Dermato-Venereology

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*Publication date:*  
2019

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*  
Mikkelsen, C. S., Ternowitz, T., & Arvesen, K. B. (2019). Teledermatology in Norway – An Absolute Necessity? *Forum for Nordic Dermato-Venereology*, 24(3), 105-106. <https://www.medicaljournals.se/forum/articles/24/3/105-106.pdf>

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## Teledermatology in Norway – An Absolute Necessity?

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### REASONS FOR THE DEVELOPMENT OF TELEDERMATOLOGY IN NORWAY

During the period 2005–2012 only 39 doctors were educated in Norway as certified dermatologists. The numbers vary significantly from year to year. At the beginning of January 2013 only 169 certified dermatologists in Norway were registered as members of the “Norwegian Society for Dermato-Venereologists”. Approximately 50% of the certified dermatologists work outside of the hospitals, either in private practice without reimbursement from the healthcare system, or in a so-called “avtalehjemmel”, with reimbursement.

Of all the Nordic countries Norway has the lowest number of dermatologists per 100,000 inhabitants (see statistics, below, from the year 2000).

Dermatologists per 100,000 inhabitants:

- Norway 2.7
- Denmark 3.1
- Finland 3.3
- Sweden 3.9

Number of dermatologists in each region in Norway:

- Helse Sør–Øst 44.1
- Helse Nord 1.4
- Helse Vest 7.3
- Helse Midt 7.2

Norway (total) 59.9

In Nordland and Finnmark, in particular, it is difficult to recruit certified dermatologists. Certified dermatologists recruited to this region from abroad may initially have difficulties with the Norwegian language and with computer systems, such as DIPS (eHealth system for Norwegian hospitals).

Most of the current certified dermatologists in Norway choose to live in cities (e.g. Tromsø, Trondheim, Oslo, Stavanger or Bergen), thus recruitment to remote areas in northern Norway is very difficult. The waiting time for patients with dermato-

The screenshot shows a digital form for a video consultation with a dermatologist. The form is in Norwegian and includes the following sections:

- Beskriv dine symptomer**: A section with two human icons and a 'Last opp bilder' button.
- Merk hvor opplever du symptomer**: A section with three columns for 'Klær', 'Svle', and 'Smerte', each with a text input field.
- Hvilke symptomer har du?**: A section with three columns for 'Klær', 'Svle', and 'Smerte', each with a text input field.
- Hvor lenge har du opplevd symptomene dine?**: A section with a timeline from 'Dager' to 'År' and a 'Last opp bilder' button.
- Har du prøvd noen form for medisinsk behandling?**: A section with 'Ja' and 'Nei' buttons and a text input field for the name of the treatment.
- Hva gjør du? Hva er ditt yrke?**: A section with a text input field for the user's name and profession.
- Helse bakgrunnsinformasjon**: A section with four questions: 'Bruker du noen medisiner regelmessig?', 'Har du allergi?', 'Er det noen arvelige sykdommer i din familie?', and 'Lider du av noen form for kronisk sykdom?'. Each question has 'Ja' and 'Nei' buttons and a text input field for the name of the medicine or condition.

logical problems, especially in Nordland and Finnmark, is very long; in some places exceeding 50 weeks (Bodø Poliklinikk).

The mean life expectancy in Norway will increase significantly in the near future. Age-related diseases, such as non-melanoma skin cancer, but also malignant melanoma, will therefore become more frequent.

Almost 33% of the current dermatologists are in the age range 60–69 years and 50% of the certified dermatologists are women. According to “Cancer in Norway 2012” ([https://www.kreftregisteret.no/globalassets/cancer-in-norway/2012/cin\\_2012-web.pdf](https://www.kreftregisteret.no/globalassets/cancer-in-norway/2012/cin_2012-web.pdf)) 40% of dermatologists working in the hospitals will retire in the period 2010–2020. This high number will not be replaced by newly certified dermatologists before 2020, since they cannot work with the same efficacy or high quality as the more experienced dermatologists.

The current situation in northern Norway is critical and will most likely remain so in the coming 8 years.

There is therefore a high potential for tele dermatology in Norway, based on the low number of available dermatologists, and long, expensive, travel times. Tele dermatology can provide better services to people with dementia, psychiatric patients, prisoners and nursing home residents. For people working offshore and in the maritime sector, tele dermatology will provide an improvement in health, safety and environmental services.

Internet coverage in Norway is extraordinarily good considering the geography and vast distances involved. Most people in Norway are familiar with digital devices. It is likely that young people especially will use tele dermatology services:

#### **ADVANCED MEDICAL SUPPORT (AMS) eCLINIC AND TELE-DERMATOLOGY SOLUTIONS**

Together with our partner Advanced Medical Support (AMS) we have developed digital dermatology services. For over 30 years the experts at AMS have delivered telemedical consultations to service patients in remote areas and in the offshore industry. Building digital solutions with a secure seamless flow of data has been a focus in the development of the new AMS eClinic.

The AMS eClinic provides specialist services, with dermatologists, psychologist and other specialties, covered by a network of 25 different specialties and 18 languages.

In addition to teleconsultations, the online dermatology service offers a range of treatments and videos to guide patient self-care and treatment follow-up. Patients will be provided with written summaries and links to relevant procedures or information. AMS tele dermatology doctors work within the framework for healthcare in Norway and can prescribe treatments and medication or refer patients to further assessment, if required.

The AMS eClinic also offers proven online self-care solutions, a high-quality SymptomChecker, and self-assessment tools backed by duty nurses and doctors at the AMS 24/7 virtual Medical Control Center. Dr Carsten Sauer Mikkelsen is Chief Medical Officer for the online dermatology service.

All data are stored in the AMS electronic patient record system and can be exchanged with public health institutions and GPs via Norsk Helsenett, or by giving relevant health personnel the option to log-in to the specific case in the EPR system.

The AMS management has more than 30 years' experience within remote care, working within management of medical assistance in the Norwegian Air Ambulance Foundation, Global Medical Support AS, and SOS International AS. They are experts in solving complex medical cases as well as providing general health advice to Nordic people worldwide. Since 2016, AMS has handled over 20,000 patient cases in 98 countries with no major incidents. The digital platform can be used by patients anywhere.

#### *Conflicts of interest*

Carsten Sauer Mikkelsen is Chief Medical Officer for the online AMS Dermatology service. Kristian Bakke Arvesen is Medical Officer for the online AMS Dermatology service.