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## 358. E-learning

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**Usage patterns and feedback of online E-learning modules for “Common Trunk” trainees in medicine**Josephine Busuttil, Martin Balzan. *Department of Medicine, Mater Dei Hospital, B'kara, Malta*

**Background:** - E-learning provides access after-hours for post-grad medical trainees. Learning management systems allow accurate recording of trainee activity.

**Aim:** To observe the pattern of usage of trainees and to assess feedback on utility of online modules.

**Method:** A Moodle online e-learning management system – including 24 online modules, and 24 quizzes is as part of an EU funded project ESF 1.19 (malta). All 23 (14Female) “Common-trunk” trainees at Mater Dei Hospital Malta were asked to complete these modules as part of their compulsory academic activities within a 6 week deadline. Data on usage was collected by the learning management system and trainees were asked to fill in an online feedback form.

**Results:** All trainees (n=23) completed all modules however 36.1% of modules (M=49.8%,F=27.4%), were completed in the last week. 19 (n=21) trainees found the e-learning as a useful or very useful tool. 19/21 and 13/21 of trainees reported streamed presentations and quizzes as of good/high quality. Acquisition of new knowledge was 7.95 (SD 1.75) on as scale of 0–10. The Quality of the IT work was rated 7.79 (SD1.75). 43.0% (M 36.6%,F 47.0%) of modules were completed from 16:00-19:59, 16.5% (M=29.3%,F=16.5%), from 20:00-23:59 and 4.5% (M=8.2%,F=2.2%) from 00:00-03:59. 31.2% of modules were performed on weekends (Sat=13.6%,Sun=17.6%, AverageMon-Fri = 13.8%). Average time to complete learning module F=49.7mins, M=76.4 mins, Quizzes, F=10.1mins, M=9.5 mins.

**Conclusion:** Overall feedback on E-learning was positive. There was significant after hour and weekend use. Gender differences in time of access, and total time needed to complete modules were noted.

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**A questionnaire study of available sources of information regarding medical conditions and access rate in patients attending chest clinics in a district general hospital (DGH) in the United Kingdom**

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**Background:** There is increasing availability of medical information on the internet, and patients now, tend to use it more often [1,2].

**Aim:** To survey patients attending chest clinics (new and follow up) regarding their use of internet and other sources to access prior information about their respiratory condition.

**Method:** Questionnaire study of patients in respiratory clinics about the sources of information accessed by them, including internet, general practitioners (GP), other hospital consultants involved in their care, family, friends, leaflets and audio-visual media for one month period.

**Results:** 139 questionnaires were completed out of 161. 60 were male. Mean age was 54 (20-88).

Results

Sources of information	Cancer (n=9) n (%)	Non-cancer (n=130) n (%)	Total (n=139)
Internet access by patient	3 (33)	26 (20)	29 (21)
Internet access by others	1 (11)	15 (12)	16 (12)
Internet access by both patients & others	3 (33)	10 (8)	13 (9)
Combination of all of the above	7 (77)	51 (39)	58 (42)
GP	7 (77)	82 (63)	89 (64)
Consultants	9 (100)	108 (83)	117 (84)
Family & Friends	0	18 (14)	18 (13)
Leaflets & Media	0	11(8)	11 (8)

**Conclusion:** The doctors remain the major source of information to the patients. However, the internet provides information to a significant proportion of our patients and this makes a compelling argument for making the internet resources more available and as reliable as possible. Our study noted that patients with cancer accessed the internet more.

References:

- [1] Alghamdi et al. *Int J Dermatol* 2011 Mar;50(3):292-9.
- [2] McMullan et al. *Patient Educ Couns.*, 2006 Oct;63(1-2):24-8, Epub 2006 Jan 6.

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**FeNO interpretation aid: A clinical decision support tool for interpretation of FeNO values in the patients with respiratory symptoms**

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**Background:** Exhaled nitric oxide (FeNO) is a validated non-invasive biomarker of airways inflammation that is easy to measure, and gives immediate results. Its use has been increasing recently in routine care. Several individual factors that affect FeNO values have been identified, including age, height, weight, sex, atopy and smoking habits. These can cause difficulties in the interpretation of FeNO values.

**Aims:** To design and develop a Clinical Decision Support System (CDSS) that classifies the FeNO values taking into consideration the individual characteristics of a patient. Specific aims are: 1) to define the information model and specifications 2) to retrieve from published literature data to setup the knowledge base; and 3) to develop the CDSS and present a functional beta version for public evaluation.

**Methods:** Collaborative development with multidisciplinary meetings between healthcare professionals and computer scientists. Systematic review of factors affecting FeNO and reference values. Development of a web-based CDSS.

**Results:** We have outlined the model and specifications of the CDSS, including feature description, information model, taxonomic description, clinical workflow integration and software and hardware requirements. In the systematic review, 10 studies met the selection criteria and were used to form the datasets for the Knowledge Base of the CDSS. A web-based CDSS, that is compliant with common standards, was developed using HTML, PHP, Javascript and CSS.

**Conclusion:** The CDSS was successfully developed, based on the best available medical knowledge, and is accessible online for testing at <http://feno.med.up.pt>.

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**Education of patients with sleep apnea syndrome: Feasibility of a phone coaching procedure**

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**Introduction:** The most commonly used treatment for sleep apnea syndrome (SAS) is the application of constant airway pressure (CPAP) during sleep. However compliance with this treatment is frequently below 70%.

**Methods:** The main aim of this study was to evaluate the feasibility of an educational intervention (EI) by phone calls in SAS patients (n=66) treated with CPAP by a home care provider (SADIR). The educational intervention consisted on 5-sessions (day 3, 10, 30, 60 and 90) of telephone-based counseling intervention by a competent staff. Secondary objectives were to compare using a case-control design CPAP compliance of SAS patients (n=133) with or without EI.

**Results:** 98% of patients accepted the intervention. Fifty seven patients (86%) received the full intervention program, and forty four patients (66%) strictly respected the protocol pre-defined timing. A higher adherence to CPAP at 6 months was observed in the EI group (94% versus 81%) compared to patient without EI (P< 0.05). CPAP compliance at 3 months increased of 54 minutes in the EI group compared to control group (4h39±2h17 and 3h45±2h45 respectively, P= NS).

**Conclusion:** An educational intervention dispensed by phone is applicable and would have an impact on CPAP compliance. Its efficacy on long term compliance has to be confirmed in a larger group using a randomized procedure.

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**PHD, the electronic patient's hayfever diary**

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The electronic pollen diary allows patients suffering from allergic rhinitis due to pollen to correlate the type (conjunctival, nasal, bronchial) and severity (degree 0–3) of her symptoms and the type and frequency of medication to correlate with the kind and intensity of the pollen exposure at the place of her stay.

The symptoms are entered daily in an online form by the patient anonymously.

The pollen exposition for the user is investigated with the help of the postcode, and the suitable data from the area's pollen trap are correlated with the symptoms and medication. Because pollen data are collected europe-wide and stored in a common database (EAN, Vienna) it is possible to correlate the pollen load and symptoms of the affected person even if that person was travelling (in Europe). The user can chart symptoms and pollen flight and interpret accordingly.

The pollen diary is retrievable under [www.pollenstiftung.de](http://www.pollenstiftung.de) and [www.pollendiary.com](http://www.pollendiary.com) free of charge and exists to date (1.2.2011) in 9 languages. In 2009 >4.000 and in 2010 >10.000 patients have used this tool.

The pollen diary supports the diagnosis of pollinosis and might be of help for therapy evaluation. It is appropriate for application in clinical studies on immunotherapy or for the effect of drug therapies. Also, this instrument is able to determine individual threshold values for pollen concentrations inducing symptoms and is likely to determine the clinical meaning of pollen kinds which were considered up to now not enough.

Furthermore any change of the threshold values is documented with these tools in the population throughout Europe and is measured.

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**Internet-based self-management (IBSM) in asthma, from evidence to practice: A qualitative study of barriers and facilitators for implementation**

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**Background:** Internet-Based Self-Management (IBSM) support cost-effectively improves asthma control, asthma related quality of life, number of symptom-free days and lung function in patients with mild to moderate persistent asthma [Van der Meer 2009]. The current challenge is to implement IBSM.

**Aim:** To assess relevant barriers and facilitators for implementing IBSM in current clinical practice.

**Methods:** We conducted focus groups (FG) and interviews (for those not being able to participate in focus groups) based on a theoretical model. 20 patients (PT), 17 general practitioners (GP) and 8 practice nurses (PN) participated in FGs. In each FG an average of four persons participated. PTs (18-50 yr) had mild to moderate persistent asthma (>3 months ICS in the past year). Interviews were conducted with 2 PTs, 5 PNs and 4 GPs. FGs and interviews were audio-taped, fully transcribed and coded independently, using an existing framework of barriers [Grol 2004].

**Results:** Main barriers at patient level: unawareness of the level of asthma control, asthma was not perceived as a chronic condition, PTs experienced difficulty of

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integrating self-management activities into daily life. Main barriers at professional/organisational level: unawareness of the level of asthma control, lack of structure of asthma care, lack of time and a lack of integration of IBSM in the GP electronic information system.

**Conclusion:** Our findings indicate that future implementation strategies for IBSM need to address relevant barriers at professional/organisational and patient level, i.e. assessment of the level of asthma control and integration within daily practice.