Guidelines into practice: An international pilot study of "Asthm Crystal Byte

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ABSTRAC

Introduction Decision support software offers a opportunity to improve the care of patients wit asthma by linking individual management decision to guidelines

Method A guidelines based software packag linked to a large database and incorporating a morbidity predictive function was developed in th United Kingdom. Clinicians from several Europea countries volunteered to evaluate the package i their own clinical environment

Results The package was run during consultation with patients in the UK, Portugal, Switzerland an Italy. Clinicians agreed on a need for local translations, local drug choices and guidelines to b developed. An emphasis on allergy, immunolog and smoking cessation advice in asthma care i some countries highlighted a need to adapt countr specific versions

Conclusions This International pilot study demonstrated that clinicians can learn from eac other and work together around a common theme o implementing guidelines using decision support software

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INTRODUCTIO

The Global Initiative on Asthma (GINA) has highlighted that asthma is a major health care proble in all parts of the world [1] In the absence of an "asthma cure" the priority for developed and developing countries is to make best use of existin therapies [2] Successful work on guideline developmen in individual countries led to the realisation that global "gold standard" of asthma care should be established

In theory guidelines are an excellent way to sho standards of best attainable practice [3] In realit improvement in patient care requires guidelines to b produced, disseminated and implemented [4,5,] Attempt to disseminate and implement guidelines have included display on Websites, distribution of pape copies, education meetings and facilitation projects [6,] Unfortunately such attempts are not often successfu because health care professionals struggle to link th theory of ideal practice to the realities of clinical car of individuals [9,1]

In the United Kingdom (UK) a series of general practice and nurse audit projects based on the Britis Asthma Guidelines led to the development of a syste of providing patient specific feedback and audit critiques [11,12,13,14,15] A database of over 12,000 patient with asthma in the UK provided a means to compar individual patients with matched controls, and in tur produce comparative statistics for practices who collaborated in audit projects [4]

A natural extension of this work was thus the design development and evaluation of decision support computer software which, during consultations, provided clinicians and their patients with a full rang of audit support based. The "Asthma Crystal Byte can run on a desktop personal computer, and consist of a windows based series of screens, which recor patient symptoms, current treatment and lung function [6] Use of either an "Asthma Attack" o "Clinic Management" pathway then informs the clinician (and patients) how current management compares to British Asthma Guidelines, and provide on screen non judgmental feedback and managemen options. Additional facilities include the automati production of written individual guided self-management plans and a print out of a summar of the consultation. Each patient is then matched b age, sex, treatment step and symptom level to patient within the database of 12,000 patients with asthma The software then displays the risk of asthma attack o hospital admission for this matched group of patients Clinicians then have the option of revising treatmen or assessment screens and determining what effect thi might have on risk prediction of future morbidity

Interest in "Asthma Crystal Byte" from clinicians i Europe led to the opportunity to test decision suppor software designed from one healthcare system – th UK National Health Service – in other clinical setting and cultures

The project thus acted as a pilot for the implementation of asthma guidelines through the us of patient specific feedback and morbidity predictio based on decision support software during the consultation

METHO

A description of "Asthma Crystal Byte" was displaye on the UK General Practitioners in Asthma Grou (GPIAG) Website, which is hosted by the Asthm Research Unit of the University of Dundee [5] Clinicians from Portugal, Italy and Switzerlan expressed an interest in testing the software in thei own practices. A set of computer disks was then sen to these clinicians on the understanding that copyrigh rested with RN, CMcC and IR on behalf of th University of Dundee, and that the software was fo use on a trial basis only. The software displayed a disclaimer that it was for study purposes only and tha management decisions rested solely with clinicians not the software design team. This is analogous to th situation where the author of a medical textbook i responsible for the accuracy of the text, not fo patients managed by doctors who consult the textbook Clinicians who accepted delivery of the software di so on the understanding that they would provide feedback to the design team on its use

clinicians communicated their experiences of the use of "Asthma Crystal Byte" by e-mail and then in an informal meeting of international users at the European Respiratory Society, Madrid 1999

The e-mail reports and discussion from the international users meeting was then collated by the project director (RN)

RESULTS

All users reported that the Windows based system ran satisfactorily on their personal computers or clinical desktop computers. One participant expressed the frustration that different software systems are difficult to integrate. Participants agreed that in the long term an Internet based Hypertext version of "Asthma Crystal Byte" would be preferable to Windows based floppy discs

All users agreed that "Asthma Crystal Byte" met their need for software, which linked the management of their individual patients to guidelines. The morbidity prediction function was perceived as being innovative and a stimulus for doctor and patient to work together to try to improve management. Due to language differences the print out of self-management plans or consultation summaries in English were not used

The Portuguese participant, who worked in University Hospital environment, reported that the British Asthma Guidelines took no account of individual patients allergies and made no mention of immunotherapy. Identifying and avoiding asthma triggers, such as allergens, is a well recognised aspect of asthma management addressed by GINA guidelines [1] The Portuguese participant also underlined the need for evaluating related diseases such as rhinosinusitis [9,18] and for a section to address allergen immunotherapy [20]

The Italian participant, a general practitioner with a interest in asthma and allergy, reported similar concerns The lack of a facility to record smoking status and in turn print out anti smoking literature was a short coming which is pertinent to all countries, but particularly in Southern Europe where smoking prevalence is unacceptably high

In Switzerland, a hospital pulmonologist highlighted the reluctance, which many doctors have, to refer to a computer screen throughout consultations. A recently published analysis about computer and internet use in Swiss doctors offices showed, that more than 93 have a computer, but in less than one third is the computer located in the consulting room [21] She opted to use the package as an audit tool to review case records. The lack of a comprehensive range of patient educational materials available as print outs was another deficiency which was commented upon. The British Asthma Guidelines are dominated by placing patients on treatment steps based around dosage of inhaled steroids. The UK "Crystal Byte" was awkward for a Swiss clinician to adapt to a consulting style, which took a broader view of patient management

All participants shared the view that the core set of guidelines incorporated into decision support software should be GINA international guidelines. It was a informative process for each clinician to hear their colleagues from Europe report their own preference and priorities for the management of the same disease

DISCUSSION

Computer assisted decision support software may represent the best opportunity to implement guidelines for the management of asthma in routine clinical care [8,1] This modest international pilot study has shown some of the opportunities for collaborative work, but also the barriers to implementation. The positive aspects of the study were that clinicians from several countries in Europe worked together on a guideline implementation project. Each participant enjoyed sharing their experiences and views with colleagues from different backgrounds, cultures and healthcare systems but united in their vocation to improve the care of patients with asthma. Each participant was able to cope with a new software system, written in a foreign language (English), and adapt it to become relevant to their own patients. The core problems of asthma management – appropriate clinical assessment, modern drug therapy, doctor and patient sharing management decisions – transcend cultures and healthcare systems. Clinicians who manage patients with asthma from different countries have more in common than issues which divide them

The study demonstrated several barriers to the use of common management systems. Language barriers are relatively easy to overcome with translation facilities but GINA guidelines are not yet available in all world languages. There is a need for all countries with Access to modern anti asthma therapy to use GINA guidelines as their adopted standard. It is difficult to justify country specific guidelines for a condition which does not respect national borders. The different emphasis which clinicians from different countries place on aspects of asthma management – such as allergy assessment – causes problems with international collaboration. The low profile which allergy and its assessment has in UK clinical practice and thus guidelines was in stark contrast to experience in other countries

This small scale pilot study has many weaknesses The development team of Crystal Byte have an academic, but not financial incentive, to see their system used. The European participants are obviously biased towards English speakers, familiar with computer technology and with a research interest The experiences of participants are not necessarily generalisable to practitioners with less enthusiasm and more scepticism towards computers, guidelines, audit and sharing clinical experience. We have no data on whether patients themselves in different European countries benefited from their clinicians use of "Asthma Crystal Byte"

There are several research opportunities presented by the pilot work presented here. Does assessment of allergic status alter the outcome of care in asthma? I

the dominance of inhaled steroids dosage in Britis Asthma Guidelines justified or should a more holisti approach be adopted? Do anti smoking educationa advice and print outs lead to smoking cessation

In conclusion, this small scale study with an ambitiou aim has a very simple message: some enthusiasti clinicians in Europe are willing to use decision suppor software to translate the theory of asthma guideline into the realities of patient care ■

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Conflict of interes

Ron Neville, Colin McCowan and Ian Ricketts hol Copyright on behalf of the University of Dundee fo Asthma Crystal Byte, but are not in receipt of an payment for its use or distribution

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