



Jamiroquai “Virtual Insanity”

Social Media and Diabetes:  
adjunct or adversary?

Dr Debbie Wake

Please do NOT to switch off your mobile phone

Tweeting, Texting and Facebooking during this presentation is actively encouraged!

Are you sitting comfortably?

<https://www.youtube.com/watch?v=jottDMuLesU>

# Overview

- Social Media
- Online Communities
- Online tools- Social Media Integration (App's, ePHRs etc)
- Barriers and Inequalities
- Take home messages

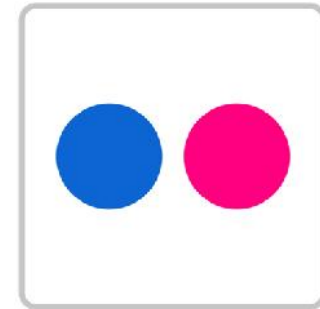


# Social Media



- 1 in every 5 people on Earth is on Facebook
- 71.2 % of all USA internet users are on Facebook
- About 20% of all photos taken will end up of facebook
- 1 in 5 divorces are blamed on Facebook
- One third of all divorce filing in 2011 contained the word 'facebook'
- Lady Gaga, Justin Bieber, Britney Spears have more Twitter followers than the entire population of Chile, Israel or Australia
- The meaning of the term 'poke' has never been defined

# Social Media – Are you in the Club?



# Social Media for Diabetes



Twitter: 140 characters

## Hash Tags #

#DOC

#diabetes

#GBdoc (tweetchats)

#dblog

#pwd

#ourD (tweetchats)

## Who to Follow @

@ninjabetic

@grumpy\_pumper

@anniecoops

@parthskar

@doctorinsulin

@WDD

@DiabetesUK

@ABCDiab

@IntDiabetesFed

@alldiabetesnews

@diabetesDaily

@JDRF

@diabetes.co.uk

@dlife

# Evidence for Social Media (Facebook)

Tara McClay

Greene et al – 15 most common facebook pages for diabetes (qualitative)

- Providing and requesting information
- personal experience of self-management
- recommendations of different tools, such as phone apps as an adjunct for diabetic control,
- promoting patient-patient education
- Sharing experiences and the “story-telling” very common
- 25% personal topics (CHO counting, alcohol)/ emotional support
- Rarer- diabetic triatheletes to share ideas (“the experienced patient”)

Farmer et al

“enables relationships to be formed that otherwise would not have existed, providing peer support to others with similar conditions. This development was seen especially within the younger age group, and promoted discussion about experiences, medication side effects while providing continual support”

Petrovski G et al,

more than 80% of people within the age of 18-24 would be willing to share information about their health over social media



# Evidence for Social Media (Twitter)

Tara McClay

## Harris et al<sup>3</sup> (2015)

- most common tweets were those regarding medical and non-medical resources for self-management
- tweets most favourited and retweeted were those related to a diabetic event or life experience

# Online Peer Support

1. Gilbert K et al **Online Communities Are Valued by People With Type 1 Diabetes for Peer Support: How Well Do Health Professionals Understand This?** Diabetes Spectrum. 2012;25(3):180–91.
  
1. Eysenbach G, Powell J, Englesakis M, Rizo C, Stern A. Health related virtual communities and electronic support groups: systematic review of the effects of **online peer to peer** interactions. BMJ. 2004;328(5):1–6.
  - 38 distinct studies (20 RCTs, 3 meta-analyses of n of 1 trials), 3 non-randomised controlled trials, 1 cohort study, and 11 before and after studies
  - 6= “pure” peer to peer communities
  - The outcomes measured- depression and social support measures; **NO effect.**
  - **No evidence to support concerns over virtual communities harming people.**

# Online Diabetes Interventions; Do they work ???

Web-based interventions aimed at improving the management of diabetes have been shown to improve clinical outcomes.

- A Cochrane Systematic Review of Computer-Based Self-Management Interventions for Adults with Type 2 Diabetes (2013). [Kingshuk Pal\\*](#), et al
  - Heterogenous studies (number of studies = 16 RCTs (3578 participants))
  - Overall small effect on HbA1C (0.2% HbA1C, -2.3mmol/mol), some lipid lowering benefit
  - Mobile Technology better results (averaging around -0.5% HbA1C, but up to -1.5%)
  - No effect of QOL, behavioural outcomes  
cognitive outcomes
- Ramadas A, Quek KF, Chan CKY, Oldenburg B. Web-based interventions for the management of type 2 diabetes mellitus: a systematic review of recent evidence. *Int J Med Inform* 2011;80:389–405.
- Pereira K, Phillips B, Johnson C, Vorderstrasse A. Internet Delivered Diabetes Self-Management Education: A Review. *Diabetes Technol Ther* 2014;17:55–63.



# Predictors of Success

## Success Predictors (Ramadas et al)

- Goal-setting
- Personalised coaching
- Interactive feedback and on-line peer support
- Mobile device
- HCP interaction

“Internet technologies that combine the broad reach of mass media with the interactive capabilities of interpersonal media provide a wide range of advantages over standard modes of delivery”, and may be “cost saving” (Brown et al)

# Diabetes Apps / m-health

> 1,300 Diabetes Apps!!

## FEATURES:

- Blood Glucose Monitoring
- Insulin Logging (+/- CHO ratios)
- Activity Tracker
- CHO tracking
- Ratio wizard
- Physiological Measurements (Home BP, blood results etc).
- Weight Tracker
- Medication (Rx) (+/- alarms)
- Graphic Displays and Analytics
- Reminders and Alarms (RA)
- Patients Education
- Online data backup
- Social Media Integration
- Multiple user/ family features

# Apps/ mHealth; do they work ???

Krishna S1, Boren SA (2008) **Diabetes self-management care via cell phone: a systematic review.** J Diabetes Sci Technol.;

- 18 studies
- 9/10 studies significant improvement in HbA1C
- Cell phone and text message interventions increased patient-provider and parent-child communication and satisfaction with care.

Frazetta, D., Willet, K. and Fairchild, R. (2012). **A systematic review of smartphone application use for type 2 diabetic patients.** *Online Journal of Nursing Informatics (OJNI)*, 16 (3),

- 4/7 studies- significant change in HbA1C from -0.4 to -1.9%

# Few Specific Examples: SMS text

**Diabetes Prevention** (Imperial) in IGT patients (SE India)-  
motivational text messages

- 8 % of the text message group v's
- 27 % of the control group developed diabetes

**Diabetes Motivation and Treatment** (SweetText, Greene et al)

- HbA1C reduction

**Post Education Adjunct** (Diabtext, Wake et al)

- HbA1C reduction (unpublished)

# ePHRs/ Patient Centred Care/ Patient Empowerment

- Kaiser Permanente
- Year of Care



**KAISER PERMANENTE®**







Laboratory Results



Community Health Index



Audit and Reporting



Primary Care Systems



Secondary Care Systems



Inpatient Linkage



Diabetic Retinopathy Screening



Scottish Diabetes Research Network

my diabetes my way :: home - Windows Internet Explorer

http://www.mydiabetesmyway.scot.nhs.uk/default.asp

File Edit View Favorites Tools Help

my diabetes my way :: home







mydiabetes \* myway  
... the interactive diabetes website

NHS SCOTLAND

home | my mind | my body | my lifestyle | my diabetes | my local services | my involvement

**my diabetes my way** is the NHS Scotland interactive diabetes website to help support people who have diabetes and their family and friends. You'll find leaflets, videos, educational tools and games containing information about diabetes.

We work with [Diabetes Information Plus](#), an NHS Scotland elibrary of quality assured information for people with diabetes, you will find links to this throughout the site.

 <p><b>My Mind</b> Understand and take control of your diabetes.</p>	 <p><b>My Body</b> How diabetes affects your body.</p>	 <p><b>My Lifestyle</b> How diabetes affects your lifestyle.</p>	 <p><b>My Diabetes</b> Access to your individual information and goals.</p>
 <p><b>Diabetes Search Engine</b> Search this site and other good sites to find answers to your diabetes questions.</p> <p>Google™ Custom Search <input type="text"/> <input type="button" value="Search"/></p>	 <p><b>Hot Topics</b> No Breaking news at present</p>		

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### ARCHIBALD MACKIE

#### My Test Results

[?](#) **My target chart:**

[?](#) **HbA1c:** 36.0 mmol/mol (5.4%) on 17/11/2011

[?](#) **Blood Glucose:** 14.0 mmol/L on 12/06/2014

[?](#) **Blood Pressure:** 180/70 mmHg on 24/03/2014

[?](#) **Total Cholesterol:** 4.5 mmol/L on 29/11/2013

[?](#) **HDL Cholesterol:** 1.50 mmol/L on 31/01/2012

[?](#) **LDL Cholesterol:** 1.2 mmol/L on 30/01/2012

[?](#) **Triglycerides:** 1.3 mmol/L on 29/01/2012

[?](#) **Creatinine:** 88.0 umol/L on 17/11/2011

[?](#) **Albumin/Creatinine Ratio:** 50.0 mg/mmol

[?](#) **eGFR:** [no result]

#### My Links

- [What Care to Expect](#)
- [Blood Sugar Testing](#)
- [Change in HbA1c Results](#)

#### Print Options

- [Create PDF](#)
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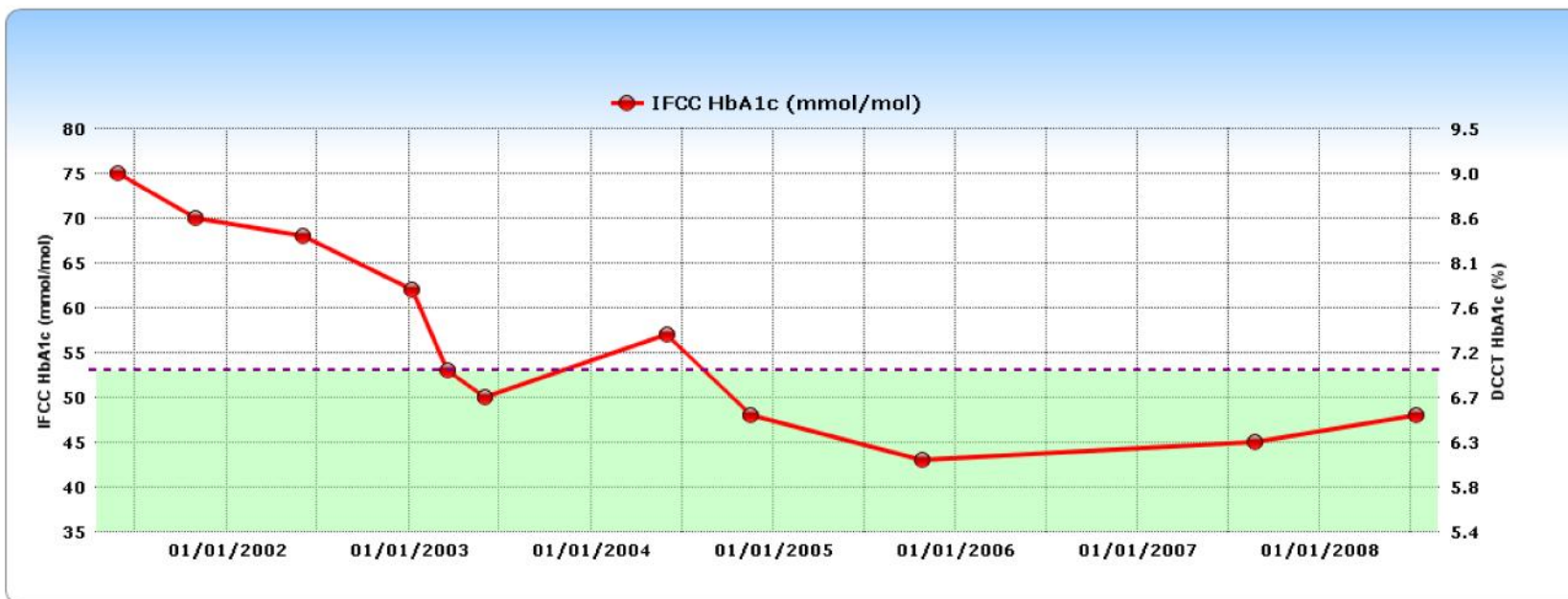
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**ARCHIBALD MACKIE**

**My HbA1c History**

Select period to view



Date	IFCC HbA1c (mmol/mol)	DCCT HbA1c (%)	Source
12/07/2008 18:56	48.0	6.5%	Tayside Practice 1 - GPASS, Primary Care
24/08/2007	45.0	6.3%	Tayside Practice 1 - GPASS, Primary Care

# ePHRs Evidence

- ePHR may improve both patient outcomes and disease management in diabetes patients while reducing complications
- However, the impact and effectiveness of ePHR is impinged by barriers of access and adoption.
- Privacy and security of personal health information is a potential concern, most patients do not seem to be deterred by this”

MDMW use associated with significant improvements in:

- HbA1c ( $p < 0.001$ ),
- Albumin/creatinine ratio ( $p=0.015$ ),
- body mass index ( $p=0.022$ ),
- total cholesterol ( $p=0.002$ ),
- HDL cholesterol ( $p=0.012$ ),
- LDL cholesterol ( $p=0.001$ ),
- diastolic blood pressure ( $p=0.007$ ) and
- weight ( $p=0.003$ ) amongst active users (*unpublished data*)



mydiabetes + myway  
... the interactive diabetes website



# MyDiabetesMyWay



Patient Portal

- Patient Health Record
- Moderated Patient discussion forum
- Asynchronous patient HCP Messaging system
- Patient educational materials

- Display disease relevant patient data
- Facilitate communication between primary and secondary care
- Support audit and Research

**ON-LINE EDUCATION GROUPS**

My Diabetes My Way

Electronic Patient Record  
SCI Diabetes

**HCP AND PATIENT ON-LINE MESSAGING**

**DIASEND LINK**

Scottish Digital Diabetes Network

Integration with other Data sources

Remote Consultation

**SKYPE STYLE CLINICS**

Input from

- Blood glucose meters,
- Insulin Pumps
- Continuous Glucose monitoring systems
- Handheld patient devices

**MOBILE APP DEVELOPMENT**

Tele-consultation Module handling Audio, video and data streams

# Patient Readiness

Scottish Government. Scotland's People Annual Report: 2014

- 82% of the Scottish population access internet for personal use or work (2015), (84% across UK)
- Mobile devices and tablet use has increased from 30% in 2013 to 41% in 2014.
- Non-users cited dislike in using internet, having no need for the internet, nothing of interest on internet and not knowing how to use a computer as main reasons
- Secondary care diabetes – 67% access to internet (2013)

# Barriers to Use

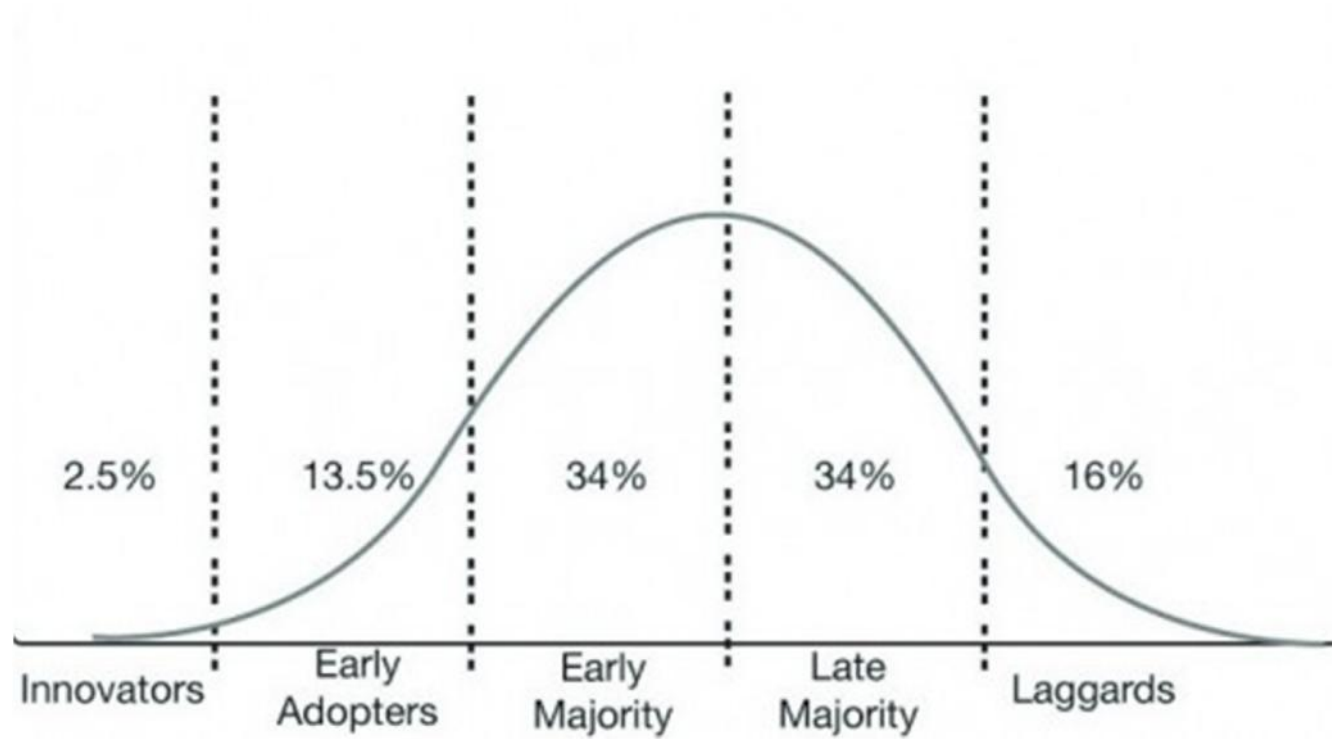
Davy He

- Lack of awareness (48.9%),
- Difficulties using computers (28.0%),
- Not owning a computer (24.7%),
- Remembering passwords (16.6%)
- Concerns about Privacy (14.3%)
- No interest (13%)
- Having other priorities (11%)

n=196



# Barriers to Using



# The Digital Divide

# Health and Digital Literacy

*'the wide range of skills and competencies that people develop to seek out, comprehend, evaluate and use health information and concepts to make informed choices, reduce health risks, and increase quality of life'*

- USA -only 12% of patients were considered fully health literacy proficient
- UK- 1 in 3 have low health literacy
- **Low health literacy levels** are associated with:
  - **increased rates of chronic conditions such as diabetes, obesity and hypertension.**
  - **Poor disease management, poor glycaemic control, complications hypoglycaemia and higher risk of death**
- Patients with **lower health literacy/ educational attainment and racial/ethnic minority patients (versus Caucasian patients)** are less likely to adopt ePHRs/ digital tools.

# Take Home Message

- There is evidence of glycaemic improvement with some online/ mobile tools
- Patients who use 'social media' like it
- There is no evidence for significant harm for diabetes management from social media (qualitative studies)
- Health Care Team should be more aware of online opportunities to signpost patients

## Questions

- Should we be prescribing apps?
- Should we be encouraging more peer- peer interactions ?
- Do we need a new member of the Diabetes team “The Technologist” to support patients with lower digital literacy?