

When's best to text? Optimum timing of SMS appointment reminders

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Impact of SMS reminders

- Outpatient DNA rates are estimated to cost the NHS £600m per year¹ and impacts on service efficiency and continuity of care¹⁻⁷
- High DNA rates are seen Sexual Health Clinics throughout the UK including Derby Hospitals¹⁻³
- SMS reminders for appointments are common and widely accepted in multiple clinical settings^{3,5-15} as a convenient, cost effective and confidential way of communicating with patients^{2,3,5,8}
- SMS reminders have been shown to decease DNA rates in SH^{2,3,8,9,15,16}



Derby Sexual Health Service

- Single Level 3 clinic located near Derby City Centre seeing patients for SH and HIV care
- Covers a large geographical area including Derby city and county
- Seeing a total of ~20,000 patients per year, 380 for their HIV care
- Offer a mixture of walk-in and pre-booked appointments throughout the day
- Separate asymptomatic screening offered as both pre-book and walk-in appointment



Project Rationale

- Prior to April 2013:
 - Clinics mainly pre-booked with some walk-ins
 - All HIV clinics were pre-booked
 - High DNA rate (>25%) especially for follow up/HIV appointments
- April –Nov 2013:
 - Introduced:
 - 'on the day' SMS reminders,
 - new appointment schedule with increased walk-ins
 - telephone recall
 - DNA rate dropped but remained high



Baseline DNA rates





Methods

- Data was collected on three cohorts of patients during 3 consecutive 4 week periods between 30/12/13-6/4/14
- In addition to the routine 'on the day' SMS reminder an extra reminder was sent 1, 2 or 3 days prior to patient appointments
- Data was collected on patient attendance during these periods for pre-booked appointments for HIV and Sexual Health



Cohorts and Exclusions

Cohort No.	No. SH Appointments	No. HIV Appointments	Total number	SMS schedule
1	1271	247	1518	1 day prior & on the day
2	1215	270	1485	2 days prior & on the day
3	1264	254	1518	3 days prior & on the day

Exclusions:

- Walk-in appointments
- Appointments booked after the time the SMS should have been sent for that cohort.



The Cohorts

Cohort	Total No. patients	No. Males (%)	No. Females (%)	Median Age (range)	Previous attendance (%)
1	1124	530 (47)	594 (53)	25 (13-83)	730 (66)
2	1058	468 (44)	590 (56)	25 (14–79)	698 (66)
3	1087	492 (45)	595 (55)	26 (14-75)	698 (64)



Results





Results

Attendance Type		Baseline	1 day	2 days	3 days	Pearson's co- efficient	
	DNA rate	20.22%	16.60%	16.30%	10.24%	P – 0 72	
HIV	Absolute % change from baseline	-	-3.62%	-3.92%	-9.98%*	p=0.042	
	DNA rate	10.57%	8.26%	9.96%	11.16%	P0.40	
Sexual health	Absolute % change from baseline	-	-2.31%	-0.61%	0.59%#	p=0.014	

*For HIV appointments, $\chi^2 = 6.728$, **p** = **0.009** for additional SMS sent three days before appointment compared with single SMS reminder.

[#] For sexual health appointments, $\chi^2 = 14.63$, p < 0.001 for additional SMS sent one days before appointment compared with single SMS reminder.



Discussion

- Sending a second SMS reminder at an optimised time appears to reduce DNA rate in our population
- This optimised timings is different depending on type of clinic visit
- HIV patients had lower DNA rates when texted further from the appointment time, whereas Sexual Health patients DNA'd less often if texted nearer to their appointment



Discussion

- Limitations:
 - Small sample size done over a short time period
 - No data on cancellation rates
 - One site only
 - Conducted prior to integration of services
- Areas for further work:
 - Generalisability of our findings to other settings
 - Investigating appointment type and optimal timing for SMS
 - Reasons underpinning the difference in optimised SMS schedule
 - Impact of integration has on the timing of SMS



Thank you, Any Questions?

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