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THE UNIVERSITY OF
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**Report for Tonic Direct and the University of
Melbourne Shepparton Medical Centre**

Health promotion in general practice waiting rooms
***What role does a streamed TV health awareness
program play?***

February 2015

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The pilot project *Health promotion in general practice waiting rooms: What role does a streamed TV health awareness program play?* was carried out in August–November 2014 at the University of Melbourne Shepparton Medical Centre (SMC) in regional Victoria in collaboration with SMC and Tonic Direct. The project received seeding funding from the Medical Education Unit, University of Melbourne (UoM).

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Conflict of interest statement

There is no conflict of interest between the project team, Tonic Direct, and SMC. The project team and SMC received no funding from Tonic Direct; Tonic Direct had no involvement in the research design. Tonic Direct provided four ten minute video segments for the patient focus group discussions.

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report describes the aims, methods and outcomes of a case study which investigated how and to what extent patients and their accompanying persons engage with health information in a general practice waiting room, including their engagement with Tonic Direct, a streamed health awareness television program that was installed in the practice for the purpose of the project.

This project was initiated as a result of discussion in December 2013 between Dr Norman Swan, from Tonic Direct, and Geoff McColl, Professor of Medical Education and Training, University of Melbourne (UoM), about the role of Tonic Direct for patient education and health literacy. Professor McColl provided seeding funding for a part-time research fellow for 6 months for a pilot study, the findings of which would inform the design of a larger project. The site of the pilot study was the [University of Melbourne Shepparton Medical Centre](#), which is a purpose built teaching clinic designed to support the University's Rural Health Academic Centre. This site was chosen due to the clinic's affiliation with the UoM, and its outstanding reputation as a regional practice. These factors assisted with the conduct of the project.

The six month study commenced in August 2014. The objectives of the study were to:

1. Investigate patients', clinicians' and administrative staff's awareness of, and engagement with health information available

in the waiting room, including awareness of Tonic Direct;

2. Identify the barriers and enablers to patients' engagement with Tonic Direct programming including patients' health literacy, receptiveness to audio-visual material in the waiting room, and environmental factors;
3. Investigate the impact of Tonic Direct programming on health information exchanged between the patient and the SMC clinicians;
4. Examine patients' perspective of the utility and impact of health information of the streamed Tonic Direct programming at SMC.

These objectives were investigated by adopting a mixed methods research design, using predominantly qualitative methods to understand patients' behaviours and attitudes towards health information. These were i) approximately 14 hours of formal observation to gain insights into patient behaviours in the waiting room (objectives 1 & 2), ii) clinician logbooks to investigate patient health information seeking including whether patients asked their doctors about Tonic Direct health information (objective 3); iii) interviews conducted with all the practice clinicians ($n = 9$) (objectives 1 & 3), and iv) focus group interviews with patients ($n = 14$), who watched twenty minutes of Tonic Direct programming as part of the focus group discussion (objective 4). The data from these activities were analysed either thematically or by content analysis. In addition, v) 74 patients completed a questionnaire to provide a quantitative measure of patient perspectives on

behaviours and preferences (objectives 1 & 4).

Ethical approval for the project was granted by the Medical Education Unit Human Ethics Advisory Group (no. 1442871.1). Data collection was carried out in November and December 2014.

Outcomes

The findings show that patients' waiting room behaviours, preferences, and engagement with available health information is multi-faceted: patients browse audio-visual and paper-based material, including health information. Many do this with divided attention as they simultaneously undertake other activities such as check Smart phones and observe activity at the reception desk. Patients overwhelmingly responded positively to the introduction of Tonic Direct in the SMC waiting room.

The *questionnaire* findings show that there were a variety of activities that patients and accompanying persons undertook in the waiting room. Patients engaged with health messages from a number of sources in the waiting room, with Tonic Direct programming cited as the most common source of take-home messages and planned changes. Planned behavioural change and reported messages about health were largely about behaviour modifications such as altering diet or exercise regimen in some way.

The waiting room *observations* confirm that the SMC waiting room is a health-information rich environment with readily accessible visual, audio, and written health information on a range of clinical and preventative health measures. Patients were observed to engage with this information, glancing at posters, as well as watching Tonic Direct television; they tended to do

these activities with divided attention although some patients sit purposively close to the TV screen and watch the program attentively. In the waiting room environment, the visuals of Tonic Direct are clear, sound is mostly audible. Some older patients pay no attention to the TV screen, sitting with their backs to the TV and facing instead towards the doctors' offices.

The *focus group* discussions of Tonic Direct episodes elicited engaged discussion. Overall, participants found the segments interesting and relevant to their own and family members' health. Participants also reported intentional behaviour change as a result of the health messages, including losing weight, exercising more, and undertaking discussion with family members to seek healthcare. Participants, most of whom scored on the intermediate and upper band of the self-reported health literacy measure, found the segment content to be mostly accessible in terms of their understanding; they made suggestions to improve clarity and impact of the embedded health messages, including adopting captioning which could highlight the 'take home' message. Another outcome of the focus groups was that participants reported that they would now watch Tonic Direct in the waiting room.

The *clinician logbook* findings about external health information provision and seeking showed that the clinicians direct patients towards health information on websites more frequently than they provide patients with pamphlets. No patients in the study period reported asking their clinicians about Tonic Direct health information. The findings suggest that patients at SMC rarely seek or discuss externally available health information with their clinicians.

The findings of the *clinician interviews* confirmed that the clinicians considered patient education as part of their responsibility as a clinician and as one of the goals of SMC. Five out of nine

clinicians reported not having watched any of Tonic Direct, while the remainder reported having seen some in passing. Nevertheless, it was generally agreed that Tonic Direct's 'info-tainment' was a reasonable method of capturing patient attention about health issues and that narrowcast was a reasonable medium to deliver health information. The fact that Tonic Direct was utilising a medium that "*used to be churning out poor entertainment*" was seen as a positive. Four clinicians recalled instances when patients mentioned Tonic Direct during the consultation, yet the unfamiliarity of clinicians with Tonic Direct content meant that opportunities for potential patient education were missed.

Discussion

The findings are discussed in relation to the study's four objectives.

1. *patients', clinicians' and administrative staff's awareness of, and engagement with health information in the waiting room, including Tonic Direct;*

The observation, questionnaire, and focus group findings indicate that patients are receptive to the availability of health information in the waiting room, including Tonic Direct. A major finding from the patient questionnaires is that Tonic Direct is the main source of health information with which patients reportedly engage in the waiting room. Patients' awareness of and engagement with Tonic Direct is enhanced when they participate in a focus group as this provides opportunity for discussion of the material. While Tonic Direct appears to engage patients about their health, few patients reportedly discuss either Tonic health information or other externally available health information with their clinicians.

2. *barriers and enablers to patients' engagement with Tonic Direct including patients' health literacy, receptiveness to audio-visual material in the waiting room, and environmental factors;*

Barriers to patient engagement with Tonic Direct in the waiting room appear to be i) behavioural - many patients attend to health information in the waiting room, including Tonic Direct, in a semi-attentive manner ii) auditory and format - patient questionnaires and waiting room observations showed that some segments can be difficult to hear; the main message in some segments can be difficult to identify, requiring more concentrated viewing; lack of captions or transition screens compound difficulty for viewers in identifying main message of different segments, iii) health literacy - the focus group findings suggest that patients' limited comprehension or recall of some of the health messages may have been affected by their level of health literacy. **Enablers** to patients' engagement with Tonic Direct i) patient orientation, that is, their positive orientation to streamed health information in the waiting room; ii) perceived endorsement, that is, the clinicians' support and the environment of SMC, iii) focussed viewing: the focus group discussion sessions trigger interest and better understanding of Tonic Direct TV iv) high quality of the Tonic Direct audio-visuals and content.

3. *impact of Tonic Direct on health information exchanged between the patient and the SMC clinicians;*

Our findings from the clinician logbook and interviews suggest patients rarely ask their clinicians about information relating to Tonic Direct. Patients and clinicians at SMC appear to make minimal reference to external sources of health information during the consultation, with the exception of the practice nurses who regularly direct

patients to quality external sources of health information.

4. ***patients' perspective of the utility and impact of health information of the streamed Tonic Direct at SMC.***

Patients in the focus groups clearly endorsed Tonic Direct as a source of health information at SMC; this finding was supported by the questionnaire responses. The **impact** of health information in the waiting room, including Tonic Direct, appears to be in the domain of awareness raising of health and well-being issues. Clinicians were supportive of providing quality health information in the waiting room, including Tonic Direct; however, none of the clinicians had viewed any of the segments extensively, potentially limiting their engagement with patients about any of the health messages provided by Tonic Direct that patients had attended to.

Recommendations

For Tonic Direct

To enhance patient engagement with Tonic Direct

- adopt captioning that summarises the main content and 'take home' message, e.g. 'ask your doctor about...'
- include transition screens between segments with title of segment
- include URLs, QRs for patient follow-up in captioning

To facilitate greater impact of Tonic Direct with practice clinicians and integration

- provide a launch when Tonic Direct is installed in a new practice, inviting clinicians, particularly practice nurses, as well as administrative staff and patient

focus group for a viewing and discussion of Tonic Direct,

- Investigate other channels and mechanisms to integrate Tonic Direct with other health promotion and patient education activities conducted at the practice setting.

For University of Melbourne Shepparton Medical Centre

To enhance health promotion and patient education activities, including utilising Tonic Direct

- continue to provide audio-visual material of a high quality in the waiting room, including Tonic Direct
- facilitate registrars and medical students to develop a repository of high quality websites of health information and update all practice clinicians on these websites regularly, including bookmarking links on consultation room computers.
- Conduct clinician focus group sessions where Tonic Direct segments are discussed in order to raise awareness amongst staff on Tonic Direct content.

Limitations and recommendations for future research

This pilot study had several limitations. The first of these is the location of the study: the case study was one regional practice that is affiliated with the University of Melbourne, thereby restricting the generalisability of these findings to a broader population. A follow up study should include both metropolitan and rural sites as well as clinics in different socio-economic areas to ensure diversity of patient population and health literacy levels. The clinicians

in this study were supportive of health promotion activities and patient education. A follow up study should seek to include clinicians with different educational backgrounds and age ranges to gain a better understanding of a broad range of clinical practice in regards to patient education.

A second limitation was the ability to recruit a diversity of patients in terms of age and background to the focus group discussions. Participants were mostly older retirees. Future studies should include incentives such as movie tickets or pay people for their time to ensure a more diverse patient cohort. The focus groups were a rich source of information directly related to Tonic Direct and allowed for investigation of patient perceptions about the programme as well as its impact on health related behaviours. A future study should invest in providing the necessary resources to facilitate focus groups as a key source of data.

For Tonic Direct, a future study should investigate more closely patients' understanding of Tonic Direct content: that is, how patients engage with individual segments in terms of comprehension and impact on their health literacy. Participants in this study reported raised awareness of health issues; the study did not seek to evaluate the accuracy of their understandings in relation to the narrowcast health message and content. Some participants in this study reported confusion when contrasting points of view were presented. Future studies should examine more closely what patients report about Tonic Direct and compare this to Tonic Direct content.

Discourse analysis of Tonic Direct content compared to patient discussions of Tonic Direct could provide a better understanding of transfer and uptake of health information. Such a study could have implications for Tonic Direct

programming. Furthermore, it could inform theoretical understandings of *interactional* health literacy as most existing health literacy studies focus on its conceptualisation or measurement.

1. INTRODUCTION

This report describes a pilot study to investigate patients' engagement with health information available in a general practice waiting room. The impetus for the study was two-fold: first, the implementation of Tonic Direct TV in patient waiting areas, a streamed health information program providing evidence-based content with the aim of informing consumers about their health; second, the development of health literacy and patient education as a research and teaching theme in the Medical Education Department, University of Melbourne. The study was carried out at the University of Melbourne Shepparton Medical Centre (SMC), a purpose built clinic established to support teaching at the University's Rural Health Academic Centre. The choice of the study site was partly due to SMC's relationship to the Medical School but also due to one of the SMC clinician's aim to replace the existing daytime television in the waiting room with more meaningful content for a healthcare setting.

In this report, we use the term patient engagement to refer to immediate interaction with the health information as well as to longer term cognitive, physical and communicative behaviours such as awareness raising, further information seeking, and intended behaviour change.

The findings of the pilot study can inform both SMC and Tonic Direct about

- i) patient engagement with, and the appropriateness and impact of a streamed health TV program in the waiting room,

- ii) environmental enablers and barriers to patient engagement with streamed health information.

To provide a greater understanding of the findings in relation to patient preferences for health information as well as levels of health literacy, the study also reports findings on these aspects.

2. BACKGROUND

Australia is facing increasing demand on the healthcare system with rising prevalence of chronic disease, overweight and obesity, and an ageing population. In 2008, 75% of Australians had a long term condition and 50% of people aged 65 years and older reported having 5 or more conditions(1). Chronic diseases, Australia's biggest contemporary health challenge (2), are the leading cause of illness, disability and death, accounting for 90% of all deaths in 2011(3).

Consumers need to engage in preventative measures to improve their health outlook and many are required to self-manage increasingly complex conditions. The primary care setting, particularly general practice, plays an important role in supporting consumers to manage their own health through health counselling and the effective management of disease. It is also a setting in which population level health interventions, such as cancer screening, immunisation, mental health initiatives, and healthy lifestyles can be directly supported by primary care clinicians. The effectiveness of preventative health measures and management of disease will also be affected by consumer's health literacy, a socio-economic determinant of health (2). While early definitions of health

literacy emphasised an individual's capacity to access and engage with both written and spoken health information and services, more recent conceptualisations are aligned with three facets of public health, namely health promotion, health education, and preventative health measures (4, 5), and take into account that health systems and providers should play a role in enhancing consumer health literacy (4, 6). While no recent data are available on Australians' health literacy, according to the Australian Bureau of Statistics in 2009, only 41% of Australians had sufficient levels of health literacy to navigate the health system and make informed healthcare decisions(7). Therefore public health and patient education initiatives that address this health literacy gap are needed so that preventative health measures and health management can be more effective. The future of health prevention programs, according to *Australia's Health 2014* (1), include partnerships that promote government and business interests to ensure effective health promotion and disease prevention; while initiatives that address health literacy should integrate health literacy into education for consumers and healthcare providers (4), with healthcare providers working in partnership with healthcare systems and consumers (6).

2.1 Health promotion and education in general practice waiting rooms

The general practice waiting room is an environment that can facilitate health promotion and patient education, particularly as patients and accompanying persons are likely to be pre-disposed to engage with health issues. Health promotion activities in the GP waiting room that are aligned with patient-centred medicine have been shown to promote general health and contribute to improved patient satisfaction(8-10). Furthermore,

patients who may not usually engage with health information but who have increased risk may participate in waiting room interventions, as shown in a small study of rural Australian men (11). Waiting room-based interventions and education programs using videos have been found to be effective in educating patients about a variety of health issues including general health topics (12), tetanus vaccines (13), parenting (14) and sexual health (15, 16). However, we are not aware of studies evaluating streamed health information programs in waiting rooms.

A further factor recommending general practice waiting rooms as sites of health promotion is the role general practitioners play in tailoring health information sourced on the Internet (17). With the ubiquity of unregulated health information on the Internet, patients seek their general practitioners' advice about the quality and relevance of Internet sourced information (18). Patients therefore associate their general practitioners and by implication the health information they and the practice provide as trusted sources of health information. Since a number of the cited studies on health promotion activities in waiting rooms were conducted prior to the advent of the Internet, studies are needed that examine patient engagement with health promotion via digital media in waiting rooms that are also available to be followed up by patients via the Internet.

2.2 Tonic Direct: evidence-based health information via television

Tonic Direct produces and broadcasts evidence-based health information via ABC television and online programming with the aim of assisting people to improve their awareness of health issues, as well as the broader goal of

enhancing their health and well-being. The programming covers a broad range of health topics, including chronic disease, new treatments, and lifestyle modification to promote health. Tonic Direct is developed in collaboration with NPS MedicineWise, an independent and not-for-profit organisation, funded by the Australian Department of Health and Ageing. Tonic Direct is streamed to patient waiting rooms, including hospitals and general practices throughout Australia in private as well as public practices. A purpose designed screen is installed in the practice and content is determined by Tonic Direct. Practices are able to display advertisements of their choice, for example, notices about practice opening hours, and reminders about public health measures such as flu shots. To date, no studies have investigated from a qualitative perspective patient engagement with Tonic Direct.

3. STUDY AIM

The aim of this project is to investigate how and to what extent patients and their accompanying persons engage with freely available health information in a GP waiting room, in particular, their perspectives and engagement with Tonic Direct.

3.1 Objectives

1. To investigate patients', clinicians' and administrative staff's awareness of, and engagement with health information available in the waiting room, including awareness of Tonic Direct;
2. To identify the barriers and enablers to awareness of Tonic

Direct programming including patients' receptiveness to audio-visual material in the waiting room, health literacy, and environmental factors;

3. To investigate the impact of Tonic Direct programming on health information exchanged between the patient and the SMC clinicians;
4. To examine patients' perspective of the utility and impact of health information of the streamed Tonic Direct programming at SMC.

The findings of this study will contribute to understandings of the place of health information in the waiting room and its effectiveness. The findings will inform understandings of clinic waiting rooms as sites of health promotion, particularly the potential of television health information for health promotion. These findings will also provide quality assurance information to the University of Melbourne SMC and Tonic Direct.

4. STUDY DESIGN AND METHODS

The study objectives were investigated by adopting a mixed methods research design, using predominantly qualitative methods to understand patients' behaviours and attitudes towards health information. The study utilised ethnographic approaches including:

- close to 14 hours of formal observation to gain insights into patient behaviours in the waiting room and environmental factors (objectives 1 & 2),

- clinician logbooks to investigate impact of Tonic Direct on patient health information seeking (objective 1 & 3).

In addition, interviews were conducted with all the practice clinicians ($n = 9$) (objectives 1 & 3), and focus group interviews with patients ($n = 14$), who watched twenty minutes of Tonic Direct programming as part of the focus group discussion (objective 2 & 4). The data from these activities were analysed either thematically or by content analysis.

A questionnaire was used to provide a quantitative measure of patient perspectives on practices and preferences in regards to health information seeking and potential behaviour change (objectives 1 & 4). Seventy-four people completed the survey, which was analysed using simple descriptive statistics.

Ethical approval for the study was provided by the Medical Education Unit Human Ethics Advisory Group (no. 1442871.1). Participants were provided with a verbal explanation of the project's aim as well as with a written Plain Language Statement. Participants were asked to provide written consent. In addition, all SMC staff were invited to a project information session.

Data collection was carried out in November and December 2014.

The study setting was the University of Melbourne Shepparton Medical Centre (SMC), a bulk billing general practice in Shepparton in the Goulburn Valley of Victoria, which opened in 2009. SMC is a purpose built general practice designed to support the teaching and learning activities of the University of Melbourne's Rural Health Academic Centre by providing training to medical students and general practitioner registrars.

SMC's focus on education extends to their patients: a wide range of health information is accessible to patients in the form of brochures and posters targeting both particular populations and health priorities (see Figure 2). Staff at the centre promote and participate in public health awareness raising activities such as Movember. The model of care involves the nursing staff developing individual care plans with the patient to help address their complex needs. Time is taken to set achievable goals with the patient which helps to increase their understanding of the condition and improve self-management of chronic health issues. Integrated into the SMC practice is a Mental Health Social Worker, giving access to the holistic biopsychosocial model of care. It is thought that this service attracts patients with complex chronic conditions who require frequent appointments and benefit from a multi-disciplinary approach.

4.1 Study setting



Figure 1 The University of Melbourne Shepparton Medical Centre



Figure 2 Patient information brochures in SMC waiting room area

Tonic Direct was installed in SMC in July 2014. The screen faces the waiting room seating and is in the vicinity of the reception area (Figure 3 and Figure 4).



Figure 3 Tonic Direct TV screen and poster board in SMC waiting room

At the time of the study, SMC's clinical staff consisted of six full time general practitioners, two practice nurses and one social worker (part time). All of the doctors were international medical graduates from both English-speaking backgrounds and non-English speaking backgrounds. The four senior doctors were aged between 50-60 years whereas the two registrars were aged between 28 and 35 years. SMC patients are diverse in cultural backgrounds, socio-economic status and age ranges. Patients include long term country residents, a large Indigenous community, older generation European migrants, and recently arrived refugees. An Aboriginal health worker attends the clinic fortnightly as a patient advocate and advisor.



Figure 4 SMC reception room

Goulburn Valley is an agricultural region known for its orchards and canning industry. Its population includes seasonal workers employed in local orchards and it is home to a large Indigenous population. Goulburn Valley has a long history of welcoming migrants and refugees with its Islamic population the largest growing religious group. The area shares a similar level of unemployment as the rest of the state but has a higher proportion of low-income households. The region has one of the lowest school retention rates in Victoria. These factors, that is, low levels of educational attainment and household income, are known to be associated with low health literacy (4, 19). This suggests that health literacy may be a concern for the Goulburn Valley: indeed, the Victorian Department of Health acknowledges levels of health literacy in rural Victoria need to be improved as well as the existing health disparities addressed (20).

4.2 Data: instruments, collection, and analysis

The following section describes each type of data collected in this study: it describes the method of data collection, the participants, the data collection procedure, and the method of analysis.

4.2.1 Waiting room questionnaire

The purpose of the questionnaire was to survey patients about their activities and preferences while waiting for their doctor or nurse, particularly in regards to whether and how they engaged with health information. The questionnaire was a two-sided A4 page, with questions on demographic information, a self report of what they did in the waiting room that day, whether they received any health messages while waiting, and what they liked and disliked doing while waiting. The questionnaire included three brief questions intended to measure their self-reported functional, communicative and critical health literacy (5, 21).

Researchers were in the waiting room at various times of the day for a two hour period to approach patients and invite them to complete the questionnaire. The researchers explained the study verbally and gave patients a written plain language statement. Participants gave their consent in writing. Seventy-four people completed the questionnaire. The results of the questionnaire were entered into a spreadsheet and then the quantitative elements were imported into SPSS for further analysis and to analyse the relationship between variables. The qualitative elements were simplified to allow for some quantification but qualitative detail was preserved as much as possible. Analysis centred on comparison of reported practices and who did which of these.

4.2.2 Waiting room observations

While one researcher administered and collected the questionnaires, a second sat in the waiting room and made field notes on the type of activities people engaged in while in the waiting room. The notes were guided by a template designed to record information about environmental aspects such as the

number of patients present in the waiting room, the busy-ness and noise levels of the waiting room, audibility of the Tonic Direct programming, where patients were sitting in relation to the television screen (facing or with their back to the screen; proximity). In addition, the researcher made note of how patients spent their time in the waiting room, such as using their Smart phones, including their engagement with Tonic Direct. In accordance with the project ethics approval, notes summarised people's activities rather than attended to individuals. For this reason, we did not make note of which Tonic Direct segments attracted viewers' attention. We noted observed patterns of activities by particular age groups where relevant. Almost fourteen hours of observation and field notes in total were completed by three of the researchers. The field note observations were collated into a spreadsheet and summarised, then analysed for content and patterns of activities.

4.2.3 Patient focus groups

Three groups of SMC patients were invited to watch segments of Tonic Direct programming and discuss them. These participants were those who were willing to participate and could do so at the scheduled times from a larger set of candidates nominated by the SMC-based researcher (Dr Jane Gall). Two groups watched material set A ($n = 8$) and one set B ($n = 6$), to control for the influence of specific content. These materials were chosen in collaboration SMC and Tonic Direct. Twenty minutes of programming was shown to 3 to 6 people in a private room and the discussion was audio-recorded. The focus group participants also completed a shortened version of the questionnaire to capture demographic data and data about patient preferences. The focus group discussion was led by the researcher, and the conduct of the focus group was

informed by Kleiber (22), including providing opportunities for the participants to mingle prior to the start of the focus group and refreshments. After introductions and information about the purpose and conduct of the focus group, participants watched one ten minute segment, then responded to discussion prompts by the researcher (Table 1).

<i>Can you tell me about any messages you recall from these segments? What specific points do you remember?</i> <i>Tell me what this information means for you? (prompts – relevance, interest)</i> <i>Can you tell me anything new you got from watching this? What could you do with this information?</i> <i>What were some of the things you liked and/or disliked about this? Anything about the images? Anything about the content? Anything about the way they spoke and the language?</i>

Table 1 Focus group discussion questions

This process was then repeated for the viewing of the second segment (see Table 2 for an overview of segment contents).

The focus groups allowed for direct participant feedback on Tonic Direct material, opportunities for participants to give explanations of their waiting room preferences and practices, as well as opportunities for participants to comment on the impact of the Tonic Direct materials. The audio-recorded focus group discussions were transcribed then analysed for themes and content categories

Set A			
	Time	Duration (m:s)	Segment
1	0-5:40	5:40	The micro biome and the unwanted affect of antibiotics
2	5:40-10:47	5:07	Knee arthritis and arthroscopy
<i>BREAK FOR DISCUSSION</i>			
3	10:47-15:34	4:47	Reducing ovarian cancer
4	15:34-18:17	2:43	Informed consent using the ASK model
5	18:17-19:23	1:06	A glass of wine a day
6	19:23-19:59	0:37	Farewell and credits
Set B			
1	0-0:17	0:17	Brief introduction
2	0:17-8:37	8:20	Mr Depression - how depression affects men
3	8:37-11:50	3:13	Ask Share Know
<i>BREAK FOR DISCUSSION</i>			
4	11:50-18:12	6:22	Whooping cough
5	18:12-18:25	0:13	Farewell and credits
6	18:25-20:07	1:42	Little Black Dress safe sex campaign advertisement

Table 2 Tonic Direct segments

4.2.4 Staff logbooks

Clinical and reception staff at SMC were asked to record instances when a patient spontaneously enquired about health information from a source other than a healthcare professional, for example, about information on Tonic Direct programming. Staff recorded these events in a logbook for a designated 10 day period (from the 10th to 23th November). In addition, they noted instances when they gave health information materials to patients, for example, referred them to a website or gave them a leaflet. The logbook was designed to be completed quickly after each consultation. This instrument was used to give qualitative information about current practices and but also data that could be quantified. The logbooks were further used to see if patients were following up information from Tonic Direct programming and as a discussion prompt and memory aide for staff in their interviews with the researchers. The logbook information was collated for analysis and tallying.

4.2.5 Staff interviews

Semi-structured interviews were conducted with each practice clinician ($n = 9$) by one researcher. These semi-structured interviews sought information on the clinicians' practices, experiences and perspectives on the use of health information materials, Tonic Direct, and their own and current medical training in terms of preparedness to act as a patient-educator. The interviews were conducted at the conclusion of the logbook data collection phase; participants were also invited to comment on their logbook outcomes. The interactions were audio recorded and analysed for content. The interviews were between 10 minutes, and nearly twenty-five minutes in length.

Table 2 provides an overview of the data collection instruments, participants, types of analysis, as well as how these instruments address the study objectives.

Data instrument	Participant population	Analysis	Objective(s)
Data instrument	Participant population	Analysis	Objective
Questionnaires	Patients and accompanying persons	Descriptive statistics; thematic analysis	1, 2 & 4
Observations	Patients and accompanying persons	Content analysis	1 & 2
Focus groups	Patients	Thematic and content analysis	2 & 4
Logbooks	Clinical staff	Content analysis	1 & 3
Interviews	Clinical staff	Audio recordings summarised for core content ...	1 & 3

Table 2 Overview of the study data, participants, and analysis

5. FINDINGS AND DISCUSSION

5.1 Waiting room questionnaire

A total of seventy-four completed questionnaires were returned. The demographic characteristics of questionnaire respondents are shown in Table 4. The majority of respondents were female (69.4%), aged between either 45-55 years (26.4%) or 25-34 years (22.2%), spoke English as their first language (95.8%), were local residents (95.6%) and had a high self-reported level of health literacy (78.1%). A broad range of occupations were reported, with the most frequent being professionals (27.4%), intermediate clerical (17.4%) and home duties and carers (15.8%).

		Frequency	Percentage	Missing values
		Frequency	Percentage	Missing value
		N=74		
Gender	Female	50	69.4	2
	Male	22	30.6	
Age	18–24	6	8.3	2
	25–34	16	22.2	
	35–44	10	13.9	
	45–54	19	26.4	
	55–64	8	11.1	
	65–74	10	13.9	
	75–84	2	2.8	
	85+	1	1.4	
English as first language	Yes	69	95.8	2
	No	3	4.2	
Local resident	Yes	65	95.6	6
	No	3	4.4	
Occupation	Managers & Administrators	10	14.5	5
	Professionals	19	27.4	
	Associate professionals	1	1.4	
	Trades person	1	1.4	
	Intermediate clerical	12	17.4	
	Labourers	6	8.7	
	Retired	5	7.2	
	Home duties & Carers	11	15.8	
	Students	3	4.3	
	Unemployed	1	1.4	
Health literacy	High	57	78.1	1
	Medium	12	16.4	
	Low	4	5.5	

Table 4. Demographic characteristics of questionnaire respondents.

Participants responded to questions about waiting times, their activities and preferences in the waiting room, and whether and how they engaged with health information. Respondents reported waiting between 5 and 60 minutes with the most common responses 10 (13.5%) and 20 (17.6%) minutes. Twenty-two respondents did not complete this question. One researcher who observed the waiting room noted that respondents had often underestimated their waiting time. Waiting or waiting for too long was the

most reported dislike with 26 (39.4%) respondents. The questionnaire responses also provide a snapshot of the range of activities people engage in as well as their preferences.

Participants responded to the following activity prompts: reading or browsing a magazine from the waiting room/ from home; talking to others; looking after children; using a phone or tablet; reading health information (posters, brochures); watching Tonic Direct.

- *Reading or browsing magazines in the waiting room*

Almost half of the respondents (47.3%) reported reading or browsing magazines while waiting to see the clinician. Of these, twelve (34.3%)

reported reading health information in the magazines. This information was mostly in the form of preventative health measures. No clear pattern emerged about respondents' age, gender, or educational attainment. Eleven (14.9%) respondents reported reading a magazine, book, or newspaper from home.

- *Talking to others*

Eighteen (24.3%) respondents reported talking to someone else in the waiting room, mostly only for a few minutes and only one person reported talking to someone for longer than 20 minutes. Two people reported receiving take-home health messages from their conversations.

- *Looking after children*

Eleven people (14.9%) reported looking after children while waiting.

- *Using a smart phone or tablet*

Thirty two (43.2%) respondents reported that they used either a mobile phone or tablet while waiting in the clinic waiting room. The most common use was to ring/text/read messages (32% of all participants), then to access the Internet (21%). Phone or tablet use had a relationship to age, with the six respondents aged between 18 and 24 years reporting using their phone/tablet and no one over 65 years of age doing so. No respondents reported accessing health information via smart phone or tablet while in the waiting room.

- *Reading health information (brochures, posters)*

Eleven participants (14.9%) reported reading a pamphlet, booklet or poster while in the waiting room. Nine of these were women, six of whom were aged between 45-54 and eight of whom reported having a high level of health

literacy. Five respondents, all women, reported receiving take-home health messages. The most common topic was men's health, which had been a focus of the clinic in November. All respondents anticipated an action or change based on the information they read, for example, two women commented on referring their husbands to information on men's health and another reported she would be more aware of the issues raised. More specific actions were planned around other topics; to consider diet in relation to cardiovascular disease and to wear a hat and look for lumps in relation to skin cancer.

- *Tonic Direct*

Thirty-three participants (44.6%) reported watching Tonic Direct. Of these, 17 (51.5%) said that they watched the TV for a few minutes, 12 (36.4%) for about 10 minutes and 4 (12.1%) for more than 20 minutes. In terms of who watched the television, there were no significant relationships to collected demographic information. The 33 TV-watchers included 21 females, 11 males and one participant who did not declare their gender. There were some trends regarding TV watching by age group (see Table 5). For example, the percentage of TV-watchers generally decreased with age, although an exception to this trend was the 25-34 age group of which only 18.8% watched TV. This may be explained by the fact that these people were most likely to be looking after children with 5 of the 11 child minders in this age group. Parents /carers who looked after children in the clinic's play area faced away from the television screen. However, the numbers are too low in this format and the larger age groups produced no significance on chi-square analysis.

Age group	Watched Tonic Direct TV				
	No		Yes		Total
	Number	% within Age group	Number	% within Age group	
18-24	1	16.7	5	83.3	6
25-34	13	81.3	3	18.8	16
35-44	4	40.0	6	60.0	10
45-54	9	47.3	10	52.6	19
55-64	4	50.0	4	50.0	8
65-74	7	70.0	3	30.0	10
75-84	2	100.0	0	0	2
85+	1	100.0	0	0	1
Total	41		31		72

Table 5 Watched Tonic Direct by age group

Looking for further differences between the TV watching population and the general sample, there are some points worth noting. Firstly, none of the retired people watched television ($n = 5$), and low-watching rates were found among those describing their occupation as home duties. On the other hand, it was attended to by more than half of the students and those in retail and sales. No one who reported a waiting time of less than 10 minutes watched the television. TV-watchers represent over half of the participants who waited in excess of 30 minutes (6 of 11). Eighty seven percent of TV-watchers liked to have health information in the waiting room and 78% to learn more about health, with these figures similar to the overall population.

Sixteen people (24.2%) reported receiving a take home health message from Tonic Direct TV-programming. There were 24 broad messages reported, relating to 12 topics. The topics noted by more than one respondent were healthy eating ($n=6$), exercise and fitness ($n=4$), diabetes ($n=3$), (costs of) smoking ($n=2$) and wound dressing ($n=2$). Eight of these participants (50%) suggested they would take some sort of action based

on the message. Of the reported planned changes: 2 related to eating well, 3 to exercising (more), 1 to swimming and 1 taking more notice of change (in skin spots). One person noted just an increase in their general knowledge and also commented that the information was too dense but covered a range of topics.

There was a trend that participants who received health messages from Tonic Direct TV had spent longer watching the content with 41.2% watching for a few minutes, 35.3% about 10 and 23.5% more than 20. Also, there appears to have been particular uptake amongst the 18-34 year olds, with this group equalling 31.3% of those who took home a message and over 60% of this age group taking home a message from their time watching the television. However, these results were not statistically significant.

Table 6 compares the descriptive statistics for the health literacy measure included in the questionnaire with the answers weighted according to their level of difficulty. The results suggests that those who took health messages from the Tonic Direct programming had higher levels of health literacy on our measure than the overall population

and TV-watchers. It may be that a high level of health literacy is required to extract messages from health promotion materials, including Tonic Direct programming.

	Health literacy measure				
	<i>N</i>	Minimum	Maximum	Mean	SD
Whole population	73	8	28	24.84	4.950
TV-watchers	32	8	28	23.94	5.825
TV-messages	16	19	28	26.06	3.172
Magazine-messages	12	15	28	25.42	4.776

Table 6 Descriptive statistics for health literacy measure

Finally, comparing the different observation sessions at the clinic, one session stands out as having 80% of participants reporting watching the TV ($n = 8$) and 75% of them ($n = 6$) reporting receiving a take-home health message. From observation notes it appears that this Friday afternoon was one of the quietest periods, suggesting that the quiet environment could have facilitated a higher rate of TV-watching.

Across all activities and media formats in the waiting room, people watching Tonic Direct TV received the most take home health messages - just over half of the people who watched the programming reported a take home message (see Table 7). Less than half took a health message from the information displayed in posters, contained in booklets and from leaflets. Furthermore, some people reported getting health messages from sources not necessarily intended to be part of health promotion, with information coming from waiting room magazines.

Activity	Number participating	Number receiving health message(s)	% receiving health message(s)
Tonic Direct TV	33	17	51.5
Pamphlet/poster	11	5	45.5
Read a magazine	35	12	34.3
Mag/book from home	11	2	18.2
Talk	18	2	11.1

Table 7 Summary of waiting room activities

5.2 Waiting room observations

The waiting room observation findings confirm that the SMC waiting room is a health-information rich environment with readily accessible visual, audio, and written health information on a range of clinical and preventative health measures. Patients engage with this information, looking at posters, taking and reading leaflets as well as watching the Tonic Direct programming; they tend to do these activities in a semi-attentive state, simultaneously reacting to other distractions in the waiting room. Patients who choose to sit facing the TV screen, mostly attend to the program in this way. More patients tended to watch segments attentively where audio-visual images aided comprehension, such as video segments about exercise.

The quality of sound and imagery while shown in the waiting room environment appeared to be clear and audible; however, the sound and clarity for the listening range varied according to the segment and speakers. Patients did not appear to follow longer segments with interviews attentively; they divided their attention between magazines and the

television. Some patients chose to sit facing away from the screen, facing instead towards the doctors' offices. These patients tended to be older, infirm, and living with chronic conditions.

5.3 Patient focus groups

The focus group findings report patients' direct interaction and engagement with health information on Tonic Direct elicited in an experimental setting. Fourteen participants in total formed three focus groups, who watched one of two 10 minute episodes of Tonic Direct (see Table 2) together with two of the researchers; these segments were then discussed. Participant characteristics in terms of age, vocation, and self-reported health literacy measure are provided in Table 8. More than half of the participants were above 65 years of age; there were two married couples who attended together. Participant employment was varied, including home duties, trades, farming, factory, retail, and office work. All participants scored in the upper range of the self-reported communicative health literacy measures (understanding health information, asking questions, taking an active role in health care, comparing information).

Group/ person	Gender	Age	Occupation	Understand information	Ask questions	Active role	Compare information
A1	m	65-74	trade	usually	usually	usually	rarely
A2	m	65-74	trade	usually	usually	usually	usually
A3	f	65-74	office	usually	usually	usually	usually
B4	f	65-74	home duties	usually	usually	usually	usually
B5	f	75-84	home duties	usually	usually	usually	usually
B6	m	25-34	unemployed	usually	usually	usually	usually
B7	f	25-34	home duties	usually	usually	usually	usually
B8	m	65-74	trade	usually	usually	usually	rarely
B9	f	65-74	retail	usually	usually	usually	rarely
C10	f	75-84	retired	usually	usually	usually	usually
C11	f	18-24	voluntary work	usually	usually	usually	sometimes
C12	m	65-74	farmer	usually	sometimes	usually	usually
C13	m	75-84	farm hand	usually	usually	usually	sometimes
C14	f	65-74	Factory worker	usually	usually	usually	usually

Table 8: focus group characteristics and self-reported health literacy

The focus group discussion covered what health messages participants recalled, the relevance of these segments for participants, whether and how they would act on the health message, and a summing up evaluation of Tonic Direct based on the segments they had seen. In response to the opening questions about what health messages participants recalled, participants identified particular segments that resonated with them. Table 9 provides a frequency count of participants' initial responses to particular segments.

Set A	Group A n= 3	Group B n=6	Group C n=5
The micro biome / antibiotics	✓		✓
Knee arthritis and arthroscopy	✓✓		✓✓✓
Reducing ovarian cancer	✓		✓
Informed consent using the ASK model			
A glass of wine a day	✓		✓
Set B			
Mr Depression - how depression affects men		✓✓✓	
Ask Share Know			
Whooping cough		✓✓	
Little Black Dress safe sex campaign advertisement			

Table 9 Focus group participant recall of segment health messages

In their responses, participants discussed aspects of these segments, including their interest level, the relevance of the item to their own, family member or acquaintance's health, and the possible benefits. For example:

[1] *It was interesting, instead of having an operation, there are other options.* [female, 64-75yrs]

[2] *It was all interesting, especially the antibiotics. I have a yogurt some mornings. I don't know whether that helps.* [male, 64-75yrs]

[3] [referring to a son-in-law's experience with unsuccessful knee surgery] *I'm watching it wishing he could see this.* [female, 75-84 yrs]

[4] *I associated with the osteoarthritis because I have a little bit of arthritis. I just use Panadol osteo at night plus I exercise so I totally agree with what he is saying But I can also sympathise with some of my friends who are overweight and they maintain the overweight hoping that something is going to fix them so I think that would be rather beneficial if they saw that.* [male, 64-75yrs]

[5] *I was very impressed by the Ovarian cancer lady. She had something about her that attracted my attention, and I think what she was talking about was extremely important. I wish my daughters could see that.* [male, 64-75yrs]

The above excerpts demonstrate participants' perception of the segments as contributing to knowledge about health. Participants also responded in terms of the impact of the information on their own health, including activating them to change behaviours, and seek medical advice for themselves or encourage others to:

[6] [in response to surgery segment] *I could lose a bit of weight.* [male, 64-75 yrs]

[7] [in response to antibiotics segment] *I find if I have anything, I rip into the antibiotics, but maybe I shouldn't be.* [male, 64-75 yrs]

[8] [whooping cough] *As an adult, I need to be immunised* [male, 25-34yrs]

[9] [in response to men's depression] *If you know someone who is struggling, you can say, maybe you need to go and see your doctor* [female, 64-75 yrs]

[10] *The sooner the better you go to your doctor, if you are feeling low* [female, 75-84 yrs]

[11] *Actually...I did notice something. I'm going to go home and have a heart to heart talk with my husband. I have asked him do you think you are getting depressed? And he says no. But I'm seeing these things, because he is drinking more, and he's actually been really irritable* [female 64-75]

While none of the participants commented unprompted on the Ask, Share, Know segment, the younger women responded

positively when the researchers probed this segment.

[12] I think it's really great. I think the younger generation will ask a lot more questions...I think it's good to promote 'ask' questions. It's your body, we need to know what's going in it and why. [female, 25-34yrs]

[13] hmm...very interesting [female, 18-24yrs]

The study's second objective sought to identify the barriers and enablers to patients' engagement with Tonic Direct programming including their health literacy, receptiveness to audio-visual material in the waiting room, and environmental factors. Patients were asked to comment on the level of the Tonic Direct segments for their understanding. There was general consensus that the information was understandable, "*just at the right level*" [female, 18-24yrs]; however, the participants commented on aspects of particular segments, including content, cohesion of segments, impact, and environmental factors. For example, two respondents found the opposing viewpoints and levels of evidence presented challenging to critically appraise, wanting certainty:

[14] I found it confusing with the arthritis. Some say it works and others don't. Who do you follow? ...there were two versions. The version that says you'll get some advantage from it, and he says, you won't, so how do you know who is right? [male, 65-74yrs]

[15] I'm a bit confused about the red wine [male, 65-74yrs, same speaker as in 14]

[16] I still haven't found out if a glass of red wine is good for you [male, 75-84yrs]

The respondent in segments 14-15, had answered the communicative health literacy question about frequency in which he critically compared health information with 'rarely', while the respondent for excerpt 16, responded he only did this 'sometimes'; therefore, this finding may suggest that participants with lower communicative health literacy may find opposing viewpoints challenging, a finding that warrants further exploration. Furthermore, a perceived lack of cohesion between the segment transitions and lack of signposting about the new content reportedly delayed participants' understanding of the content. This finding related particularly to the transition between the whooping cough and safe sex segment in Set B [excerpts 17-18]. For example:

[17] It took me nearly the whole time to work out what it was about. [female, 25-34yrs]

[18] I lost it [male, 75-84yrs]

[19] How did we jump from depression to the pill? That was a bit random. [male, 25-34yrs]

To address this, participants suggesting adding captions with a general message summarising the content of the segment "*in English, and maybe in Arabic*" [female, 25-34yrs], and providing a web-link in the caption or the phrase "*ask your doctor about....*". Participants commented positively on the visual and emotional impact of some of the segments, for example on the whooping cough story, "*it gave a shock, it was in your face*" [female, 25-34yrs]; the images from surgery were

likewise viewed positively “*I reckon it’s a good idea showing it*” [female, 64-75yrs], with one participant suggesting a segment should be included showing someone on ice, “*they go beserk*” [male, 64-75yrs] as a disincentive. Several participants also commented on the high quality of the information presented, for example:

[20]. I think it gave a very good definition of what men’s symptoms are for depression, particularly irritability [female, 25-34yrs]

Others argued that the content, while interesting, would not gain people’s attention, particularly in a waiting room with other environmental distractions. For example:

[21] The first one [antibiotics] wouldn’t grab people’s attention. They’d just switch off. If it were in a waiting room...to grab people’s attention you probably need something a bit more dynamic. [female, 64-75yrs]

[22] It lacked a bit of punch. If I was sitting there watching [reading] the National Geographic and that was going on...I would be reading the National Geographic. I don’t know how you’d do it, it’s not going to attract people’s attention. [male, 64-75yrs]

Captions were also suggested as a means of overcoming environmental interference in the waiting room, such as noise, as a means to aid comprehension for people who are hearing impaired. To conclude the focus group discussions, participants were

asked to comment overall on their impression. These comments were resoundingly positive with the exception of one older male who said we would prefer to look at the posters. Participants unanimously preferred Tonic Direct to the daytime television that had been previously broadcast in the practice.

[23] It’s far better than the brainless stuff that is usually on the television. [female, 64-75yrs]

[24] It’s better to have that than some American rubbish where they are shooting one another, you know

The focus group sessions played a major role in not only raising patients’ awareness of Tonic Direct but also in engaging them further with the program:

[25] I’d watch it now that I know it’s there. [male, 64-75yrs]

[26] Now I’ve seen your presentation [i.e. the focus group session], I will watch it now...you’ve got me [male, 64-75yrs]

and you’ve got me [female, 64-75yrs]

you’ve got three listeners now [male, 64-75yrs]

Furthermore, their concluding comments reiterated that Tonic Direct had raised their awareness of health matters.

[27] A couple of months back, I noticed it had health things,

and I started watching it, cool!
[female, 18-24yrs]

*[28] I reckon it's fabulous, you
learn things, and you learn
what some people have to go
through with* [female, 64-75yrs]

*[29] you learn more about your
body* [female, 25-34yrs]

5.4 Staff logbooks

Whereas the previous findings relate to patients engagement with health information in the waiting room, including Tonic Direct, the following findings refer to staff reflections on their logbooks and interviews about external health information for patients. Six of the nine clinicians completed the staff logbooks in the designated ten day. Five of the participating clinicians reported recommending and/or

showing web sites with health information to patients, websites that were primarily about preventative health measures, men's health, sexual and reproductive health, chronic disease, and mental health. Table 8 shows the type of health information provided by clinicians (pamphlet, Internet), who provided what information, and the frequency with which information was provided.

Clinicians also referred patients to brochures about similar health aspects. The youngest participant (E) recommended websites more frequently than her colleagues and a greater variety of information sources. Similarly, the practice nurse (D) recommended health information more frequently than the GPs. The findings suggest the while SMC clinicians direct patients to externally available digital and paper based health information, most of the GPs do so infrequently.

Website /App Topic	Pamphlet/ brochure
Black Dog/ Beyond Blue: A; B x 5	Plasma rich protein injection: A
Men's Health: A,	Mirena fitting and information: A
Menopause and HRT: A x 3	PMS Information: A
Mirena fitting and information: A	Back exercises: C
Menopause matters: B x 2	Periodic syndrome, recurring abdominal pain: C
Back exercises: B; E	Immunisation – pneumorax: D
Jean Hailes: B, E x 3,	Physical activity options, Greater City Shepparton: D
You Tube Epilepsy (dizziness) B	Management Hypoglycaemia: D
Myrtl Exercises Glutes/ thighs – You Tube: C	NOSS forms, Diabetic living – recipes: D
Otitis media – glue ear: C	BG monitoring, meter provision: D
Patient co uk – (glucosamine C), diverticular disease: E	NHMRC health eating for adults: D x 2
Mens Health: Andrology Australia website and newsletter: D x 2	Alfred Men's Health booklet: D x 2, F x 8
Royal Childrens Hospital non specific vulvovaginitis: C	Thinking pregnancy, thinking immunisation: D
Better Health – Menopause, Tinea, Candida, pre-menstrual syndrome, pregnancy: E,	Primary care connect, group exercises and referral: D
Injury prevention: E	Pelvic floor exercises: D
Lactose intolerance: E	CAPS funding: D
National Heart Foundation: E x 4 (cholesterol)	Seretide MPI instructions: D
Implant: E	Pneumonia vaccine: D
Royal Women's Hospital – pregnancy: E	Myths and realities for immunisation: D
	Immunisation in pregnancy: D
	Medic alert: D
	Implants: E

A: GP - female; B: GP female, C: GP male, D: Practice nurse – female; E: GP female; F: GP male

Table 10 Clinicians directing patients to external health information

Clinicians also reported when patients enquired about externally available health information: for example to seek information or to discuss information they had found. Table 11 shows the type of external health information patients enquired about and the frequency with which this occurred. No patients in the study period reported

asking their clinicians about Tonic Direct health information. The findings suggest that patients at SMC rarely seek or discuss externally available health information with their clinicians.

Website /App Topic/ Tonic Direct
Moody Me App (patient showed doc): B
Prostate health: B
Healthy cooking/Recipes: B
Diverticular disease: cyclical mastalgia; back pain (patients reporting symptom check prior to seeing doctor): E

Table 11 Patients sharing health information with clinicians

5.5 Staff interviews

General views about patient education:

Clinicians considered that patient education was their responsibility, yet they held multi-faceted views on how to enact this. For example, it was considered to be helping patients make sense of information they had already sourced rather than active education, or helping patients understand presenting complaints more than prevention. One clinician noted, “... *most of the time information is tailored to the diagnosis in patient education*”.

Patient education activities:

All clinicians disseminated health information to patients, such as pamphlets, websites and online support groups, with many relying on familiar, trusted resources/sites. Several clinicians mentioned time as a requirement for patient education – time spent explaining materials to patients, searching for and become familiar with what resources were available, or locating relevant information within a pamphlet or website. Most clinicians evaluated the suitability of materials and took into account patient preferences when tailoring information for their use.

The waiting room as a place for patient education:

Five out of nine clinicians agreed that the waiting room had potential as a site for patient education since people were already thinking about health and were a captive audience. However, a number of caveats were raised – that the information being provided is reviewed and endorsed by the practice, and that

it is kept neat and tidy. The latter point reflects the aims of the clinic to provide an inviting atmosphere for patient, while the former relates to the fact that patients placed trust in materials in the waiting room because they were provided by the clinic. Clinicians who were less convinced of the waiting room as a site for patient education, were influenced by patients’ preferences, diagnosis and privacy, for example,

“... some people are really interested in browsing leaflets, and others totally ignore them”

“... if someone’s coming in for a cancer diagnosis they’re not going to be interested

“[you can’t] engage with a patient in a more intimate way [in the waiting room] because there is no privacy”

Tonic Direct for patient education

Five out of nine clinicians reported not having watched Tonic Direct, while the remainder reported having seen some in passing. The fact that they were unfamiliar with the content was raised by several clinicians:

“... probably should have stopped and considered it, and actually watched the programs”

“don’t know if treatments in Tonic are ‘pie in the sky’ or if they’re close to the market or not”

Nevertheless, all offered opinions on the usefulness of Tonic Direct: It was generally agreed that ‘info-tainment’ was a reasonable method of capturing patient attention about health issues and that narrowcast was a reasonable medium to deliver health information – “... *leaflets and posters are only for certain people, other people like visual and audio stuff*”. The fact that Tonic

Direct was utilizing a medium that “*used to be churning out poor entertainment*” was seen as a positive. With respect to programming, the varied topics, style of presentation and the fact that it was not tailored, were considered an advantage because it could relate to a broader range of people. Specifically, one male clinician felt the surgical segments were too gory, but acknowledged that they may have been designed to shock/motivate.

Instances of specific enquiries about Tonic Direct from patients

Only four clinicians recalled occasions when patients specifically referred to Tonic Direct:

1. A health professional from the nearby hospital – she said it was very good and she wished the doctor had been running late because she was enjoying listening to it.
2. A patient mentioned something that was on Tonic Direct - something that might be a new treatment for something they were concerned about - but the GP didn't know what it was about, not knowing the Tonic material.
3. People said they've just seen something on the TV in the waiting room, but one also noted “*I turned my back on it because I didn't want to watch it*” (the clinician didn't know if it was because of the topic or they were focussed on something else)
4. A patient asked about something they'd seen – heart health – they asked if they could see it again or if they could get a DVD – part of the patient's reasoning was that it must be proper if it was at the practice. Another patient commented that the volume was quite low, and

another who was hard of hearing asked if there could be subtext.

Clinicians' training in patient education:

Clinicians' training in this domain was variable, for example, one clinician had received specific training on patient education during undergraduate studies, several had received recent continuing professional development or post-graduate training, but others spoke of knowledge informed by experience. In fact, one male GP thought that patient education skills came with experience and was unsure how much could be taught. Another female GP noted that when she was originally trained, the thought was that doctors wouldn't play a role in patient education.

Current medical students' training:

Clinicians agreed that current medical students have more training and refer patients to sources of information, yet they felt that patient education deserved more emphasis in healthcare professions' curricula.

Summary

The shared goal of the clinic to take time for patient education was reflected in clinicians' awareness of, and level of engagement with health information. All clinicians disseminated health information (pamphlets, websites, online support groups) to patients, with many relying on familiar, trusted resources. Most clinicians evaluated the suitability of materials and took into account patient preferences when tailoring information for their use. Clinicians generally agreed that ‘info-tainment’, such as Tonic Direct, was a reasonable method of capturing patient attention about health issues and that narrowcast was a reasonable medium to deliver health information. Yet, the

unfamiliarity of clinicians with Tonic Direct content meant that opportunities for potential patient education were missed.

The clinic and the waiting room in particular, are regarded as a place for education by both patients and clinicians. The provision of educational materials alone, however, may not be enough with patients seeking endorsement of materials from clinicians. Clinicians' understanding of, familiarity with, and subsequent endorsement of Tonic Direct will be critical to the successful uptake of Tonic Direct for health promotion in the waiting room.

6. SUMMARY AND DISCUSSION

The findings are discussed in relation to the study objectives.

1. *patients', clinicians' and administrative staff's awareness of, and engagement with health information in the waiting room, including Tonic Direct;*

The observation, questionnaire, and focus group findings indicate that patients are receptive to the availability of health information in the waiting room, including Tonic Direct. A major finding from the patient questionnaires is that Tonic Direct is the main source of health information with which patients reportedly engage in the waiting room. Patients' awareness of and engagement with Tonic Direct is enhanced when they participate in a focus group as this provides opportunity for discussion of the material. While Tonic Direct appears to engage

patients about their health, few patients reportedly discuss either Tonic health information or other externally available health information with their clinicians.

2. *barriers and enablers to patients' engagement with Tonic Direct including patients' health literacy, receptiveness to audio-visual material in the waiting room, and environmental factors;*

Barriers to patient engagement with Tonic Direct in the waiting room appear to be i) behavioural - many patients attend to health information in the waiting room, including Tonic Direct, in a semi-attentive manner ii) auditory and format - patient questionnaires and waiting room observations showed that some segments can be difficult to hear; the main message in some segments can be difficult to identify rapidly, requiring more concentrated viewing; lack of captions or transitions screens compound difficulty for viewers in identifying main message of different segments, iii) health literac - the focus group findings suggest that patients' limited comprehension or recall of some of the health messages may have been affected by their level of health literacy.

Enablers to patients' engagement with Tonic Direct i) patient orientation, that is, their positive orientation to streamed health information in the waiting room; ii) perceived endorsement, that is, the clinicians' support and the environment of SMC, suggestive of the endorsement of Tonic Direct's content by SMC; iii) focussed viewing: the focus group discussion sessions to trigger interest and better understanding of Tonic Direct TV iv) quality of the audio-visual images and content.

3. *impact of Tonic Direct on health information exchanged between the patient and the SMC clinicians;*

Our findings from the clinician logbook and interviews suggest patients rarely

ask their clinicians about information relating to Tonic Direct. The logbooks and interviews suggest that patients and clinicians at SMC make minimal reference to external sources of health information during the consultation, with the exception of the practice nurses who regularly direct patients to quality external sources of health information.

4. ***patients' perspective of the utility and impact of health information of the streamed Tonic Direct at SMC.***

Patients in the focus groups clearly endorsed Tonic Direct as a source of health information at SMC; this finding was supported by the questionnaire responses. The **impact** of health information in the waiting room, including Tonic Direct, appears to be in the domain of awareness raising of health and well-being issues. Clinicians were supportive of providing quality health information in the waiting room, including Tonic Direct; however, none of the clinicians had viewed any of the segments extensively, potentially limiting their engagement with patients about any of the health messages provided by Tonic Direct that patients had attended to.

7. RECOMMENDATIONS

7.1 Recommendations for Tonic Direct

To enhance patient engagement with Tonic Direct

- adopt captioning that summarises the main content and 'take home'

message, e.g. 'ask your doctor about...'

- include transition screens between segments with title of segment
- include URLs, QRs for patient follow-up in captioning

To facilitate greater impact of Tonic Direct with practice clinicians and integration of Tonic Direct

- provide a launch when Tonic Direct is installed in a new practice, inviting clinicians, particularly practice nurses, as well as administrative staff, and patient focus group for viewing and discussion of Tonic Direct.
- Investigate other channels and mechanisms to integrate Tonic Direct with other health promotion and patient education activities conducted at the practice setting.

7.2 Recommendations for Shepparton Medical Centre

To enhance health promotion and patient education activities, including utilising Tonic Direct

- continue to provide high quality health information in the waiting room, including Tonic Direct
- foster registrars and medical students to develop a repository of high quality websites of health information and update all practice clinicians on these websites regularly, including bookmarking links on consultation room computers.

- Conduct clinician focus group sessions where Tonic Direct segments are discussed in order to raise awareness amongst staff on Tonic Direct content.

8. LIMITATIONS AND FUTURE RESEARCH

This pilot study had several limitations. The first of these is the location of the study: the case study was one regional practice that is affiliated with the University of Melbourne, thereby restricting the generalisability of these findings to a broader population. While SMC is a bulk-billing practice, the patient profile in recent years has changed from a low socio-economic demographic to a more middle-class population, possibly due to the practice's high quality of care with emphasis on developing care plans with its patients. The health literacy measure showed participants in the study had a mid to high range of health literacy. A follow up study should include both metropolitan and rural sites as well as clinics in different socio-economic areas to ensure diversity of patient population and health literacy levels. A follow up study should seek to include clinicians with different educational backgrounds and age ranges to gain a better understanding of a broad range of clinical practice in regards to patient education.

A second limitation was the researchers' limited success with recruiting a diversity of patients in terms of age and background to the focus group discussions. Participants were mostly older retirees. Future studies should include incentives such as movie tickets or a small cash incentive to assist with recruiting a more diverse

patient cohort. The experimental setting of the focus groups was a rich source of information directly related to Tonic Direct and allowed for investigation of patient perceptions about the programme as well as its impact on health related behaviours. A future study should invest in providing the necessary resources to facilitate purposive sampling of the focus groups as a key source of data.

For Tonic Direct, a future study should investigate more closely patients' understanding of Tonic Direct content: that is, how patients engage with individual segments in terms of comprehension and impact on their health literacy. Participants in this study reported raised awareness of health issues; the study did not seek to evaluate the accuracy of their understandings in related to the narrowcast health message and content. Some participants in this study reported confusion when trying to identify simple health messages when contrasting points of view were presented. Future studies should examine more closely what patients report the Tonic Direct health messages to be, and compare these responses to Tonic Direct content. Discourse analysis of Tonic Direct content compared to patient discussions of Tonic Direct could provide a better understanding of transfer and uptake of health information. Such a study could have implications for Tonic Direct programming. Furthermore, it could inform theoretical understandings of *interactional* health literacy as most existing health literacy studies focus on its conceptualisation or measurement.

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10. APPENDICES

10.1 Appendix 1: Project team

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10.2 Appendix 2: Patient questionnaire

About you

1. What is your gender?	☐ Female	☐ Male
2. What is your age?	☐ 18-24	☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ 65-74 ☐ 75-84 ☐ 85+
3. Are you a local resident?	☐ Yes	☐ No
4. What is your occupation e.g. student, home duties, electrician (if retired, occupation before retirement)?	<i>Please specify...</i>	
5. What is your first language?	<i>Please specify...</i>	

The waiting room today

1. About how long did you wait in the waiting room today?	<i>Please specify...</i>
2. What did you do during the wait?	
<i>Please tick all activities below that you did today. If you tick an activity, please answer all further questions about it. If you didn't do an activity, please leave blank.</i>	
A) ☐ READ A MAGAZINE FROM THE WAITING ROOM	
How much time did you spend doing this?	☐ A few minutes ☐ About 10 mins ☐ More than 20 mins
Were there any take home messages about health in the magazine?	☐ Yes ☐ No
If you answered Yes to the previous question, what was the message(s)? <i>Please specify...</i>	
What will you do differently because of the health message(s)? <i>Please specify...</i>	
B) ☐ READ A MAGAZINE, PAPER OR BOOK YOU BROUGHT WITH YOU	
How much time did you spend doing this?	☐ A few minutes ☐ About 10 mins ☐ More than 20 mins
Were there any take home messages about health in your reading material?	☐ Yes ☐ No
If you answered Yes to the previous question, what was the message(s)? <i>Please specify...</i>	
What will you do differently because of the health message(s)? <i>Please specify...</i>	
C) ☐ READ A PAMPHLET/BOOKLET/POSTER FROM THE WAITING ROOM	
How much time did you spend doing this?	☐ A few minutes ☐ About 10 mins ☐ More than 20 mins
Were there any take home messages about health in the pamphlet/booklet/poster?	☐ Yes ☐ No
If you answered Yes to the previous question, what was the message? <i>Please specify...</i>	
What will you do differently because of the health message? <i>Please specify...</i>	
D) ☐ READ A PAMPHLET/ BOOKLET YOU BROUGHT WITH YOU	
How much time did you spend doing this?	☐ A few minutes ☐ About 10 mins ☐ More than 20 mins
Were there any take home messages about health in the in the pamphlet/brochure?	☐ Yes ☐ No
If you answered Yes to the previous question, what was the message? <i>Please specify...</i>	
What will you do differently because of the health message? <i>Please specify...</i>	

Waiting Room Questionnaire Page 2

Please tick all the activities below that you did. If you tick an activity, please answer all questions about it.

E) ☐ WATCHED THE TV

How much time did you spend doing this? ☐ A few minutes ☐ About 10 mins ☐ More than 20 mins

Were there any take home messages about health on the TV? ☐ Yes ☐ No

If you answered Yes to the previous question, what was the message? Please specify...

What will you do differently because of the health message? Please specify...

F) ☐ TALKED TO SOMEONE IN THE WAITING ROOM

How much time did you spend doing this? ☐ A few minutes ☐ About 10 mins ☐ More than 20 mins

Were there any take home messages about health during your conversation? ☐ Yes ☐ No

If you answered Yes to the previous question, what was the message? Please specify...

What will you do differently because of the health message? Please specify...

G) ☐ USED YOUR PHONE OR TABLET TO...

☐ Ring/text/read messages ☐ Listen to music ☐ Play games ☐ Access the Internet

If you ticked *Access the Internet*, how much time did you spend doing this? ☐ A few minutes ☐ About 10 mins ☐ More than 20 mins

If you ticked *Access the Internet* were there any take home messages about health on the Internet? ☐ Yes ☐ No

If you answered Yes to the previous question, what was the message? Please specify...

What will you do differently because of the health message? Please specify...

H) ☐ LOOKED AFTER CHILDREN

How much time did you spend doing this? ☐ A few minutes ☐ About 10 mins ☐ More than 20 mins

In general...

1. Is what you did today what you normally do in this waiting room? ☐ Yes ☐ No

2. Do you like to have access to information about health in the waiting room? ☐ Yes ☐ No

3. Do you like to learn more about health in the waiting room? ☐ Yes ☐ No

Please list two things you like to do while you are in the waiting room:

4. i)
ii)

Please list two things you don't like to do while you are in the waiting room:

5. i)
ii)

6. I understand the information I am given by my doctor and/or nurse. ☐ Rarely ☐ Sometimes ☐ Usually

7. I ask the questions I need to ask when I talk to my doctor and/or nurse. ☐ Rarely ☐ Sometimes ☐ Usually

8. I take an active role in managing my health and well-being. ☐ Rarely ☐ Sometimes ☐ Usually

9. I compare information from different sources and then decide what is best for my health. ☐ Rarely ☐ Sometimes ☐ Usually

Thank-you

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