IMPACT OF SENSORY MODULATION IN MENTAL HEALTH ACUTE WARDS ON REDUCING THE USE OF SECLUSION

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

This report outlines Te Pou's work in the area of sensory modulation. The report has three main sections that together describe Te Pou's work in this area. These sections are:

(1)   the background to sensory modulation as a clinical intervention aimed at reducing seclusion and restraint in acute mental health inpatient wards

(2)   the pilot research that Te Pou has undertaken into the usage of sensory modulation in adult and child and family/child and youth mental health acute inpatient units, and

(3)   the current Te Pou work to support the implementation of sensory modulation in District Health Boards (DHBs).

Sensory modulation is a clinical intervention that aims to limit the use of seclusion and restraint in acute mental health inpatient wards. Seclusion and/or physical restraint of service users thought to be of risk to themselves or others is a clinical intervention used in acute mental health inpatient wards in New Zealand and internationally. However the New Zealand Ministry of Health (MOH) has called for the limiting of seclusion and restraint (Ministry of Health, 2010).

Sensory modulation denotes a range of prevention tools identified in the Six Core Strategies© advocated by the USA's National Association of State Mental Health Program Directors (NASMHPD). It is a clinical approach using 'sensory tools' to promote preferential sensory stimulation with a goal toward optimised arousal and/or de-escalated emotions. The approach emerged from occupational therapy where it has been used since the early 1970s to help children with attention and performance delays to regulate their own arousal and promote social engagement (King, 1974).

Te Pou undertook the Ministry of Health (MOH) funded, mixed-methods project *Seclusion: Time for a change* in both adult and child and family/child and adolescent acute mental health inpatient wards. The project was designed to assess whether the locating of Sensory Rooms in such wards would have an impact on seclusion and restraint rates by facilitating self-regulation of arousal among service users. Quantitative data from the adult arm of this study has been completed, with data analysis due for completion in September 2010. Qualitative data from service users has been collected, and is currently being analysed. Further qualitative data from clinicians is being gathered. This should be completed by June 2011. The child and family/child and youth study is also due to be completed in June 2011.

In this project, designated spaces (Sensory Rooms) were created in inpatient mental health wards. Sensory tools were offered in Sensory Rooms to service users who felt the need to manage distress, or were judged by clinical staff to require de-escalation. All nursing staff from the intervention sites in both arms of the study were trained in the use of the tools and the study protocol.

Qualitative data collection from service users in the adult arm of the study is complete. This data shows promising support for the suitability of sensory modulation as a clinical intervention. Strong feedback from the study sites indicates the need for further implementation initiatives for sensory modulation if the initiative is to be safely and consistently used within acute mental health wards.

This data supports feedback from the mental health sector that DHBs have, to varying degrees, begun to implement sensory modulation. In effect sensory modulation has had strong sector uptake, even without the results of the Te Pou research studies being known. There has been strong support for Te Pou to lead strategies to support safe implementation.

Te Pou's current work is focussed on supporting the completion of analysis of quantitative data and qualitative service user data in the adult arm of the study, strengthening qualitative data from clinicians in the adult arm, gathering and analysing data in the and child and family/adolescent arm of the study, and developing and implementing strategies to support the safe implementation of sensory modulation for DHBs that have already started using sensory modulation, or intend to do so. These strategies are currently in three forms:

(1)   the development of a blended delivery (on-line and face-to-face) sensory modulation workshop, to be tested in the first week of July 2010

(2)   an introduction to sensory modulation package that will sit on Te Pou's website, and

(3)   a sensory modulation change management package.

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INTRODUCTION

Sensory modulation is a clinical strategy that has been identified as a possible way of reducing rates of seclusion and restraint rates in acute mental health inpatient units (Huckshorn, 2005). This report describes the work that Te Pou has undertaken in the assessment and implementation of sensory modulation in acute mental health inpatient wards.

This report has three main sections, which mirror the development of Te Pou's work. The first section is a background into sensory modulation and its relationship with seclusion and restraint reduction. It explains Te Pou's involvement in this area of work.

The second section outlines a research study (with both adult and child and family/child and adolescent ward arms) undertaken by Te Pou in partnership with key experts from the School of Occupational Therapy at Auckland University of Technology and mental health units into the use of sensory modulation as a tool to reduce seclusion and restraint in acute mental health inpatient wards. Although the complete data from these studies is not yet available, qualitative information from the adult arm gives clear indications for the need to support further development of implementation initiatives to ensure that sensory modulation is delivered in safe and sustainable ways.

The third section of this report describes feedback from the mental health sector that shows how sensory modulation is being used in various forms in wards in New Zealand. This sector feedback, along with the preliminary research results, indicates the clear need for the development of a toolkit to support the implementation of sensory modulation. Te Pou's work in this area is well developed, and is described in this report.

BACKGROUND

Seclusion and restraint is used as a clinical intervention in many New Zealand mental health acute inpatient settings; however the MOH (2010) report *Seclusion under the Mental Health (Compulsory Assessment and Treatment) Act 1992* identifies the need to limit these practices. The report also reiterates the need for seclusion to be used only as a last resort when other interventions are exhausted.

Te Pou's work has been supported by preparatory research into best practices for reducing seclusion (O'Hagan, Davis, & Long, 2008). Te Pou's action plan to reduce rates of seclusion and restraint in New Zealand was crafted in 2008 and was informed by Six Core Strategies© (to reduce seclusion) of the USA's National Association of State Mental Health Program Directors (NASMHPD) (Huckshorn, 2005). Sensory modulation, as a clinical approach, has been cited as a key strategy in seclusion reduction by NASMHPD (Huckshorn, 2005).

Te Pou undertook discussions with key persons and groups in the New Zealand mental health sector to determine how Te Pou might be able to support clinicians to reduce rates of seclusion and restraint. These groups included the Directors of Mental Health Nursing (DOMHNs) and regional fora of Calming and Restraint / Safe Practice and Effective Communication trainers in the Northern, Central and Southern DHB regions. These key stakeholders indicated that clinicians required practical applied practice tools that could ensure safety if they were going to be able to engage with the goals of seclusion and restraint reduction.

Information from the 11 inpatient sites participating in Australia's seclusion reduction initiative (Beacon Project) suggested there were two types of tools that were showing promise for supporting change in practice. These were generally classed as either audit tools or sensory modulation. The audit tools are processes with forms designed to capture data related to seclusions (from antecedents through post-event debriefing). Overseas initiatives indicate positive impacts of sensory modulation (Teitlebaum et al, 2007; Dorman et al., 2009; MacDaniel, 2009). Specifically, the sensory modulation approach:

- is practical and easily learned

- operates at the level of personal engagement with service users

- has a theoretical framework that 'makes sense' in a clinical setting

- does not increase the burden of delivering care (e.g. it did not involve completing forms or reports)

- has no reported adverse effects when used in the context of clinically assisted engagement.

Sensory modulation is a clinical approach that is used to help service users who are distressed and agitated by decreasing their arousal. It has a theoretical basis in neurological and observational studies (King, 1974; Ross, Buchanan, Medoff, & Lahti et al, 1998; Mouchet-Mages, Canceil, Willard & Krebs, 2007), which suggest that service users in acute phases of serious mental illnesses sometimes have difficulties processing and integrating sensory information. This can in turn lead to over or under-sensitivity to the social and physical environment and difficulty in responding to these situations. This difficulty is exacerbated when service users are distressed (Champage & Sawyer, 2003).

Sensory modulation in acute mental health inpatient wards involves a service user voluntarily entering a Sensory Room, preferably before his or her arousal escalates. The service user is then guided to use sensory quipment under the direct supervision of a clinician. Service users will optimally have already been introduced to the Sensory Room at an earlier time and had opportunities to assess, along with the clinician, sensory equipment that suited him or her. Once in the Sensory Room, service users are able to choose from a variety of sensory tools to assist with self-soothing. Examples of these tools include audio and video equipment, soft or pleasant feeling materials, pleasant aromas, and small blankets for the lap or shoulders that are weighted and provide sensation of pressure.

Te Pou's acute project work has been focussed on sensory modulation as a clinical intervention that might reduce seclusion and restraint rates in acute mental health inpatient wards. This work, supported by the MOH, has two parts:

(1)   research on sensory modulation in acute mental health inpatient wards, and

(2)   the development of a suite of tools to support the implementation of sensory modulation in New Zealand acute mental health wards.

The rest of the report gives an overview of this work.

SENSORY MODULATION RESEARCH

The use of sensory modulation as a tool to reduce seclusion and restraint has been described in studies from centres in Europe, USA and Israel (Teitlebaum et al, 2007; Lindley & McDaniel, 2009; McDaniel, 2009) but had been untested in a controlled study. The Te Pou project team therefore collaborated with subject area experts from tertiary education from the School of Occupational Therapy at Auckland University of Technology and mental health units to develop a research protocol for a multi-centre pilot study.

Based on various models of emotional and physical arousal, notably polyvagal theory (Cooley Dickinson Hospital, 2003 cited in Champagne & Sayer, 2003), the Te Pou project team hypothesised that seclusion and restraint use would be reduced through a calming and de-escalating result of Sensory Room use. The aim of the study was to test the effectiveness of sensory modulation in reducing seclusion and restraint through the mediating variable of diminished arousal and to assess its acceptability to clinicians and service users. Ethics approval for the study was given by the multi-region ethics committee in November 2009 (amended 6 January 2010) (approval number MEC/09/05/0508).

Managers of seven inpatient units self-identified as being interested in participating in the research trial, which had developed two separate arms: adult inpatient and child/adolescent inpatient trials. Three adult units (study sites "A", "B", and "C") were selected as intervention sites and two as controls; one child and family/child and adolescent unit was selected as the study site, with a second as a control. The criteria for selection as the study site included the high proportion of Māori and Pacific people in the inpatient population to ensure their representation in the project. Two hundred inpatient clinicians were given a 4-hour training module in the theory and practice of using sensory tools to manage arousal/aggression and an introduction to the study protocol (see appendix A).

Analysis of the quantitative data from the adult arm of the study will be completed in December 2010, while the data gathering in child and family inpatient ward study will be completed in November 2010. Qualitative data from group interviews with service users and individual and group interviews with clinicians has been analysed and has given some useful early information and direction for further study. This early data will be added to by further clinician and service user interviews, which should be completed and analysed by June 2011.

Strong sector feedback, supports the preliminary findings from data, and is described in the next section. This feedback and data gives a clear rationale for the current Te Pou suite of tools focussed on sensory modulation implementation.

CHALLENGES IN IMPLEMENTATION

The presence of the Sensory Room in the ward was initially very awkward, despite the in-depth training clinicians had received in sensory modulation. Analysis of initial interviews and focus groups with clinicians identified barriers to implementation:

- The intervention was novel and emerged from a clinical approach to treating cognitive and behavioural delays, not psychiatrically disordered behaviours that are the core work of nurses in acute mental health units. The background to the intervention may explain why nursing staff initially viewed sensory interventions as a form of 'play', rather than the 'more serious' business of medication and risk management. This perception was an early barrier for nurses but was ameliorated by the demonstrated positive effects of sensory modulation on aroused service users.

- The pressure of daily ward routines was cited as a reason why it was difficult to integrate the intervention into daily cares. A common expression from staff nurses was that 'being off the floor' (and in the Sensory Room) for 15-20 minutes was a burden.

- Clinicians required time to come to terms with the concept of the intervention, using the tools, and building confidence in taking distressed service users into the room and working with them in this new way.

THE SENSORY ROOM LOCATION IMPACTED ON SENSORY MODULATION USE

In all of the adult study sites the Sensory Rooms were sited cautiously in the open wards, rather than in intensive care units or high-dependency areas where the seclusion rooms are located. This resulted in three different adaptations to the intervention:

- Study site A did not use the room as the nursing team leader decided that there were no service users on open wards who would have benefited from the intervention. This site was subsequently withdrawn from the study.

- Study site B, within the first month of operation, began to extend the intervention into the other open ward. Halfway through the measurement period the unit management opened a Sensory Room in the intensive care unit of the inpatient site.

- Clinicians in study site C rapidly engaged with the use of the Sensory Room in the open ward. However these clinicians in the high dependency unit (HDU) did not take distressed service users from the HDU to the open ward to use the Sensory Room. This had the effect of rendering the Sensory Room unable to be accessed for the purpose of reducing seclusion, although initial data analysis suggests that it may have reduced the use of restraint.

Flexibility for sites to make these local adaptations was important for assessing feasibility of the intervention in practice. However it is possible that guidance is needed for the best location of rooms. This is supported by feedback from the sector.

RESOURCE MANAGEMENT

Service users and charge nurses both indicated that the physical management of sensory resources (the room, its contents and so on) requires a designated person. Where Occupational Therapists performed this role the room was accessed by service users in the company of clinicians (rather than simply being there alone). However when the room was not locked service users often entered alone and the room was merely used as another lounge area. Having the room locked requires a clinician to open it and facilitates the presence of staff with the service user in the room. This arrangement optimises the potential of the room.

CONFIDENCE BUILDING

Clinicians found that if they used the intervention with service users at the earliest signs of distress then there were fewer demands to deal with crises. This basic tenet of clinical care has significant implications for the possibility of dramatically reducing seclusion rates. Clinicians were not confident in using sensory interventions when service users were most agitated. Attention to educating clinicians on the use of sensory modulation at times when service users are most agitated is therefore likely to be needed.

SAFETY OF SENSORY MODULATION

The trial identified a potential risk to service users if interventions in Sensory Rooms are not correctly supervised by clinicians. Although no apparent harm came to any persons as a result of the study, it is apparent that 24-hour supervised access to a Sensory Room is needed to ensure that the room is:

(1)   used as a safe, guided clinical intervention, and

(2)   is not accessed by persons using for purposes other than sensory modulation.

It seems likely that sensory equipment could potentially be misused (and therefore pose a risk to individual service users) if not guided by good assessment or not supervised by a clinician. This risk appears easily ameliorated if good practice is utilised.

Sensory Rooms can be misused for non sensory modulation purposes if left unlocked. This is likely to be disruptive to good practice (for example, by other clinicians and service users who need the room not having immediate access) but also carries a risk of misuse of the equipment that could lead to harm to individual service users. Again this risk can be minimised by the use of good clinical practice along with locking of the room when not in use. Written protocols about clinician supervision and access to the room are therefore likely to be needed.

LINKS WITH
LET'S GET REAL

The *Let's get real* framework (Ministry of Health, 2008) sets out the essential knowledge, skills and attitudes that clinicians need in order to effectively engaged with service users. Feedback from clinicians and early analysis of data indicate that the use sensory modulation is particularly helpful in the first skill in the framework- engagement with service users.

Sensory modulation appears to be particularly helpful in rapidly building relationships with service users. Although the exact reason for this is not yet known, feedback suggests that this may be in part due to clinicians being able to proactively offer an intervention that is seen as non-coercive and therapeutic. Sensory modulation with distressed persons also requires clinicians to be physically present in Sensory Rooms with service user, something that feedback suggests is seen as supportive by service users, and assists in engagement.

As noted, further qualitative research with clinicians and service users is planned. It is hoped that the results of this will give further insights into the ways that the use of sensory modulation supports engagement skills.

TE POU'S CURRENT WORK: SENSORY MODULATION IMPLEMENTATION

The trial of sensory modulation has led to interest in the use of sensory modulation at other inpatient units in New Zealand. By the time the data collection was complete, the two inpatient units that served as control sites had requested sensory modulation training to get their own initiatives underway. Subsequently five other DHBs sought advice and similar training from Te Pou to support their implementation of this approach in their inpatient and community centres. By March 2010, with the formal three-day sensory modulation workshop in Auckland, some clinicians from 18 DHBs had received an in-depth orientation to this intervention and 10 of those DHBs indicated some level of active engagement with implementation of sensory modulation.

The three-day Sensory Modulation workshop was led by Tina Champagne, of the Center for Human Development in Massachusetts, an authority on the use of sensory interventions in mental health settings (see http://www.ot-innovations.com/). A cohort of clinicians from the two control sites attended this training from 10-12 March 2010, as did groups of clinical staff from eight other DHBs. Evaluation feedback from the training indicates that more than 80% of the participants plan on implementing at least one aspect of sensory interventions in their workplace.

Although the Tina Champagne workshops received positive evaluations, subsequent feedback from the sector - aligned with some of the qualitative data from the research - strongly indicates the need for more focussed implementation. The *Seclusion: Time for a change* work also identifies the need for a 'toolkit' to help DHBs implement sensory modulation.

There is strong interest in sensory modulation as a suite of clinical interventions to reduce seclusion and restraint. Sensory modulation is being effectively used in a minority of DHBs; however other DHBs are requesting assistance in safely implementing the intervention. Many of these DHBs have either bought or are considering buying sensory modulation equipment and/or are considering the development of Sensory Rooms in acute mental health inpatient units.

Feedback from the sector indicates a request for Te Pou leadership in sensory modulation implementation. The Tina Champagne workshops were considered useful for attendees but the affordability of future workshops is prohibitive, given her domicile in the United States of America. There appears to be a need for workshops to focus tightly on local issues of implementation. Local needs are varied and range from a need to have clear guidance on the location of Sensory Rooms to clarity around disciplinary assessment and usage of sensory modulation, matching appropriate sensory tools with service users' clinical presentations and the development of local policies.

A second indication from the sector is that sensory modulation is not clearly understood, even at a rudimentary level, by many clinicians and non-clinicians alike. Tellingly, there is little information readily available that describes sensory modulation. The sector has requested that Te Pou develop a way for clinicians and non-clinicians in the mental health sector to gain an overview of sensory modulation.

Similarly, clinicians in the research study have informally advised Te Pou that a lack of understanding of the intervention, coupled with their own inexperience in change management, is a significant barrier to effective implementation of sensory modulation.

Te Pou's current work is therefore focussed on developing the following:

(1)   a blended delivery (on-line and face-to-face) sensory modulation workshop for DHBs

(2)   an introduction to sensory modulation package that sits on Te Pou's website

(3)   a sensory modulation change management package that sits on Te Pou's website

(4)   a sensory modulation package for DHB funders and planners

(5)   further increasing the evidence base of sensory modulation by undertaking further interviews with clinicians and service users
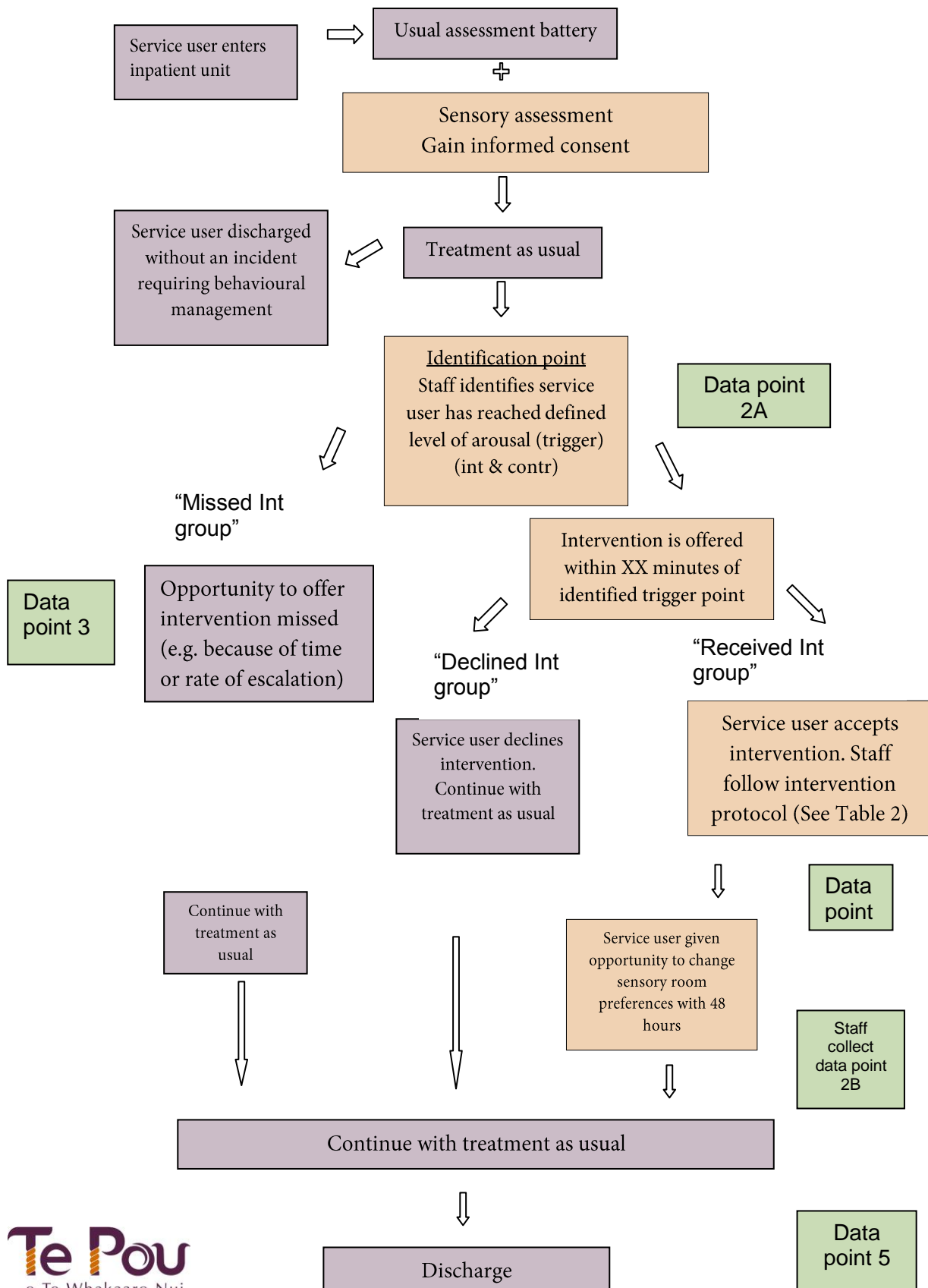
CONCLUSION

Sensory modulation is a promising clinical intervention aimed at limiting seclusion and restraint rates in acute mental health inpatient wards. Te Pou has used the best available theoretical and research evidence as a foundation for research into the use of the tool in New Zealand settings. The research evidence from this study is not yet completely available; however the analysed qualitative data gives guidance into necessary considerations of implementation if sensory modulation is to be safe, effective and sustainable.

Te Pou has been instrumental in securing a foothold for sensory modulation in New Zealand, but with the formal project coming to an end it is appropriate that direction for this innovation devolve into the community of practitioners and users. Indeed sensory modulation has effectively taken on a 'life of its own', with many DHBs in varying stages of using the intervention. Strong anecdotal feedback from the sector, along with the available qualitative data indicates that clinicians need a targeted training program to guide implementation for those units that have already been introduced to the practice. Guidelines for best practice have been developed and tested by Tina Champagne (see Champagne and Stromberg, 2004; Champagne, 2010). These are useful. However there is a clear need for local implementation of training and other tools to support these initiatives. Te Pou has responded to the needs of the sector and is providing the training and a toolkit to assist implementation of sensory modulation.

APPENDIX A: PROTOCOL FOR INTERVENTION DESIGN

Service user enters inpatient unit

Usual assessment battery

Sensory assessment
Gain informed consent

Service user discharged without an incident requiring behavioural management

Treatment as usual

Identification point
Staff identifies service user has reached defined level of arousal (trigger)
(int & contr)

Data point 2A

"Missed Int group"

Opportunity to offer intervention missed (e.g. because of time or rate of escalation)

Intervention is offered within XX minutes of identified trigger point

Data point 3

"Declined Int group"

"Received Int group"

Service user declines intervention. Continue with treatment as usual

Service user accepts intervention. Staff follow intervention protocol (See Table 2)

Continue with treatment as usual

Data point

Service user given opportunity to change sensory room preferences with 48 hours

Staff collect data point 2B

Continue with treatment as usual

Discharge

Data point 5

APPENDIX B: CASE REPORT FORM ("GUEST BOOK")

ON ENTRY

(Your Surname (Please print)	De-identification Code No. AKS		Med	Nur	OT	Psych
Service user last name	NHI		De-identification Code No. AKP			
Today's Date & Day:	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Time of entry	24hr clock						
PRN meds given to decrease arousal w/in 30 mins prior to entry	□YES □NO						

Arousal level at entry (circle one)	0 usual baseline	1 anxious	2 irritable	3 agitated	4 escalated threats or posturing
Did staff member initiate room use? (please circle)	□YES □NO				
Time of exit					

AFTER SESSION

Arousal level at end of session (circle one)	0 usual baseline	1 anxious	2 irritable	3 agitated	4 escalated threats or posturing
Was this session used post-seclusion or as a post-seclusion trial?	□YES □NO				

Please record service user evaluation below, within 24 hours of session - *if* informed consent has been obtained

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Person's reported distress level on entering the room	0 ok	1 anxious, worried	2 feeling irritated, fearful	3 feeling terrible, maybe angry
Person's reported distress level on exiting the room	0 ok	1 anxious, Worried	2 feeling irritated, fearful	3 feeling terrible, maybe angry

Primary presenting symptom (please tick one)	Hallucination / Delusion	Mania / hypomania	Self-Harming	Depression	Cognitive Impairment	Other

Tools used during this session (tick as many as apply)

☐ Massage chair   ☐ Aromay

☐ Rocking chair   ☐ Handcreams

☐ Bean bag   ☐ Stress balls

☐ Weighted blankets   ☐ Visual photos/DVD

☐ Fake fur blanket   ☐ Music player

☐ Stuffed animal   ☐ Lollies

Reason for ending this session (tick one)

☐ The service user asked to leave the room

☐ The service user's level of arousal escalated to unsafe level

☐ The staff member was required to attend other events on the ward

☐ Service user arousal level returned to 1 or lower and the service user accepted staff prompt to end session

☐ Other ………………………………………………………………………

How confident did you feel supervising this session?	Very confident 3	Somewhat confident 2	Not confident 1

Any comments, observations?

Your (staff member) comments on session

Service user comments on session

REFERENCE LIST

Champagne, T. (2010). *Sensory modulation and environment: Essential elements of occupation.* 3rd edition, revised. Pearson Publishing, Melbourne Australia.

Champagne, T., & Sayer, E. (2003). The effects of the use of the sensory room in psychiatry. A quality improvement study. Retrieved June 4, 2009, from: www.otinnovations.com/pdf_files/QI_STUDY_Sensory_Room.pdf

Champagne, T., Stromberg, N (2004). Sensory Approaches in Inpatient Psychiatric Settings: Innovative Alternatives to Seclusion and Restraint. *Journal of Psychosocial Nursing and Mental Health Services, 42*(9) 34-44.

Dorman, C., Lehsten, L.N., Woodin, M., Cohen, R.L., Schweitzer, J.A., Tona, J.T. (2009, November 23). *Using Sensory Tools for Teens With Behavioral and Emotional Problems.* Retrieved from http://findarticles.com/p/articles/mi_7687/is_20091123/ai_n42280502/?tag=content;col1.

Greenhalgh, T., Robert, G., MacFarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations. *The Milbank Quarterly, 82*(4), 581-629.

Huckshorn, K. A. (2005). *Creating violence free and coercion free mental health treatment: Snapshot of the six core strategies for reducing seclusion environments for the reduction of seclusion rates.* National Technical Assistance Center / NASMHPD. Alexandria VA.

King, L. J. (1974). A sensory integrative approach to schizophrenia. *American Journal of Occupational Therapy, 28,* 529-536.

MacDaniel, M. (2009). *Comfort Rooms: A preventative tool used to reduce the use of restraint and seclusion in facilities that serve individuals with mental illness.* New York State Office of Mental Health. New York, NY.

Ministry of Health. (2008). *Let's get real: Real Skills for people working in mental health and addiction.* Wellington: Ministry of Health.

Ministry of Health. (2010). *Seclusion under the Mental Health (Compulsory Assessment and Treatment) Act 1992.* Wellington: Ministry of Health.

Mouchet-Mages, S., Canceil, O., Willard, D., & Krebs, M-O. (2007). Sensory dysfunction is correlated to cerebellar volume reduction in early schizophrenia. *Schizophrenia Research, 91,* 266-269.

O'Hagan M., Davis M., & Long J. (2008). *Best practice in the reduction and elimination of seclusion and restraint; Seclusion: time for change.* Auckland: Te Pou Te Whakaaro Nui: the National Centre of Mental Health Research, Information and Workforce Development. http://www.tepou.co.nz/file/PDF/FINAL-SECLUSION-REDUCTION-BEST-PRACTICE-Research-Report.pdf

Prinsen E. J. D. & van Delden J. J. M. (2009). Can we justify eliminating coercive measures in psychiatry? *Journal of Medical Ethics, 35*; 69-73.

Ross, D., Buchanan, R., Medoff, & Lahti et al. (1998). Association between eye tracking disorder in schizophrenia and poor sensory integration. *The American Journal of Psychiatry,* 155, 1352.

Teitelbaum, A. Volpo, S., Paran, R., Zislin, J., Drumer, D. (2007) Multisensory environmental intervention as a preventive alternative to seclusion and restraint in closed psychiatric wards. *Harefuah 146*(1), 11-14 [Article in Hebrew]. Abstract retrieved from http:// www. ncbi. nlm. nih.gov/pubmed/1729484

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