Using Patient Tablets to Support a Data-Driven, Sustainable Shared Care Group Approach to Mental Health

Presented by:

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Hamilton FHT

Presenter Disclosure

- **Presenters:**
  - Jesse Lamothe
  - Brad Laforme

- **Relationships with commercial interests:**
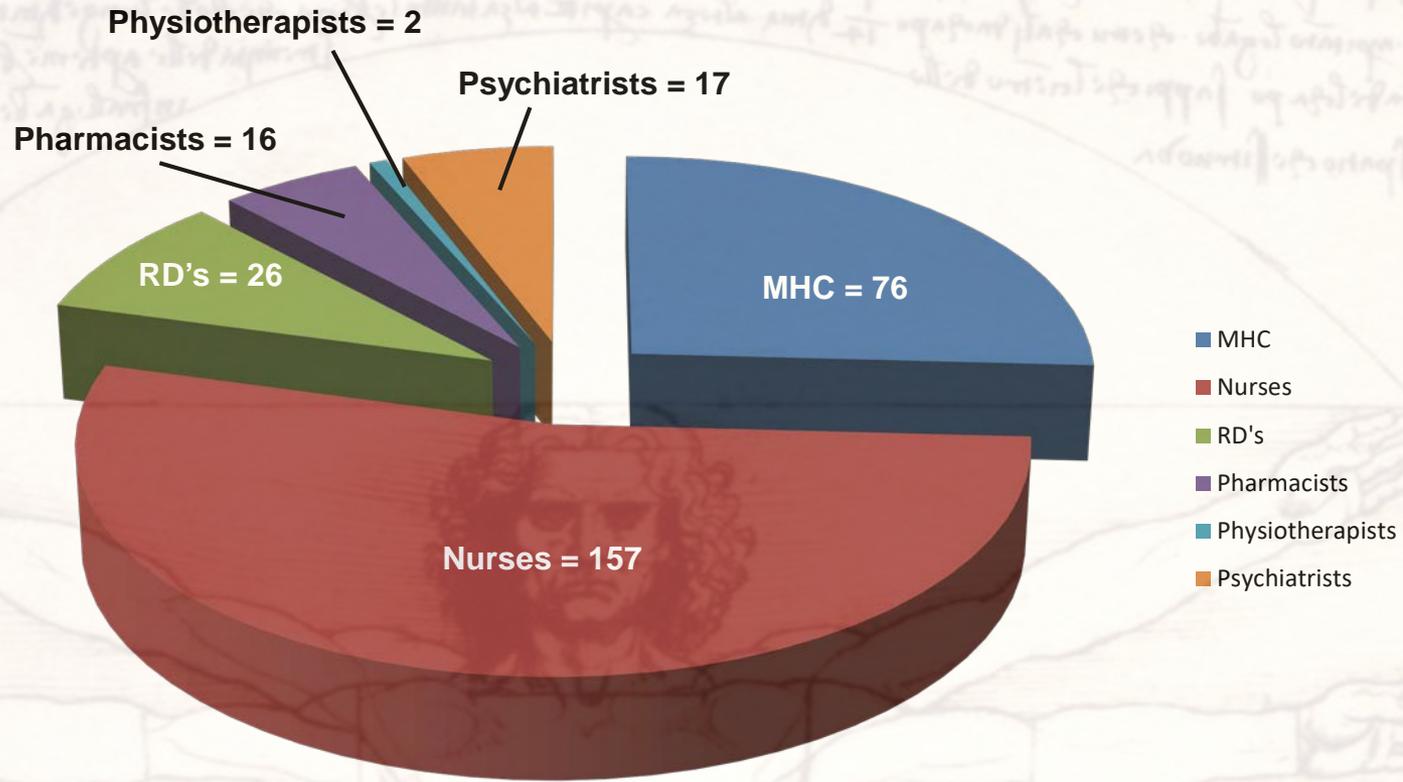 - **none**

Disclosure of Commercial Support

- The program itself and the development of the pathway through CAMH was partially funded through ARTIC, but not directly funding our program or our presentation.

- **<u>Potential for conflict(s) of interest:</u>**
  - CognisantMD is the developer of the Ocean tablet platform, a product that will be discussed in this program.

Mitigating Potential Bias

- CognisantMD and their product, Ocean, will be outlined in a technical overview slide, "tablet platform" will be used to refer to the product afterwards

Hamilton Family Health Team at a Glance

Physiotherapists = 2

Psychiatrists = 17

Pharmacists = 16

RD's = 26

MHC = 76

Nurses = 157

- MHC
- Nurses
- RD's
- Pharmacists
- Physiotherapists
- Psychiatrists

166 Family Doctors serving approx. 300,000 patients

ARTIC Opportunity
Adopting Research To Improve Care

Joint funding program of HQO (Health Quality Ontario) and CAHO
(Council of Academic Hospitals of Ontario)

What is an INTEGRATED CARE PATHWAY (ICP)

"A Clinical Pathway is a multidisciplinary outline of anticipated care, placed in an appropriate timeframe, to help a patient with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes".

Middleton S Barnett J & Reeves D (2001)

DA VINCI Project Overview

- GOAL

  - The DA VINCI Project is to support and accelerate the implementation of the Integrated Care Pathway for Major Depressive Disorder and Alcohol Dependence (ICP)

  - Provide increased access to treatment for concurrent disorder, improve integration of care and to ensure high quality patient-centered care.
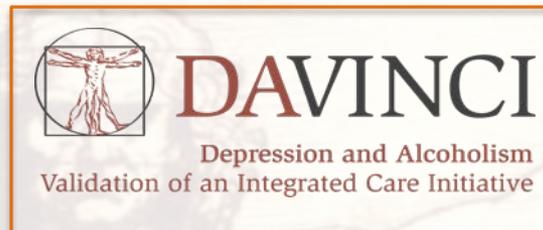
The Program

"We took a 16 session out-patient hospital based program and transformed it into a 17 week primary care psychotherapy group."

DAVINCI
Depression and Alcoholism
Validation of an Integrated Care Initiative

The core elements of the pathway include: measurement-based care, pharmacological and psychotherapeutic interventions, and a clinical workflow that incorporates an inter-professional team.
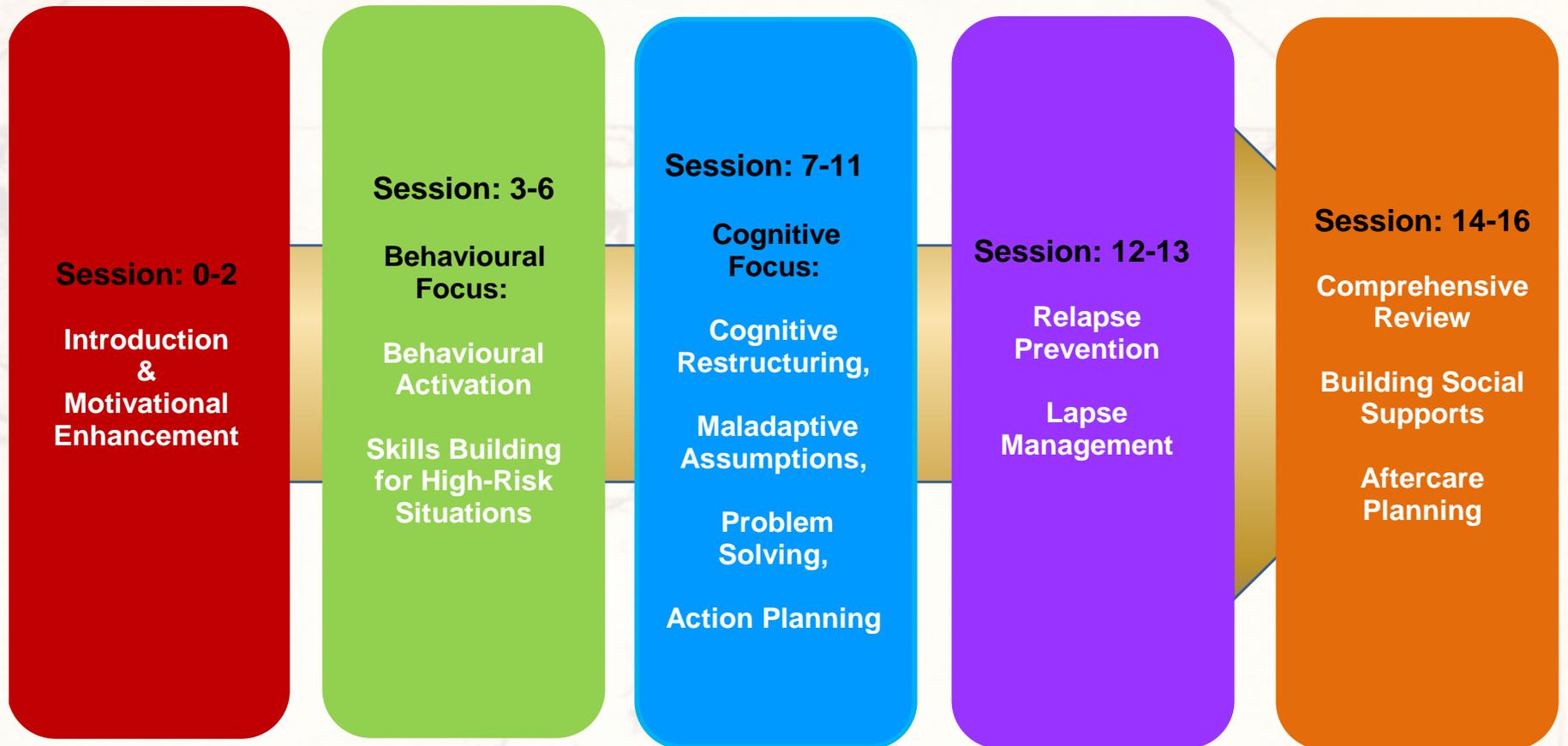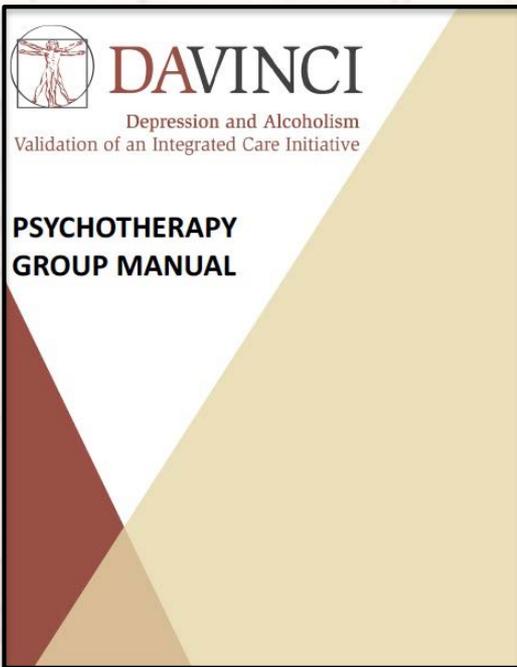
Program Structure

o Concurrent Treatment of Major Depressive Disorder and Alcohol Use Disorder as defined by DSM V

o 17 - 2 hour weekly group psychotherapy sessions.

o Pharmacological intervention via anti-depressant and anti-craving medication.

o Pre and Post group assessment tools, as well as…

  o Bi-Weekly screens for depression symptoms, alcohol cravings scales, and weekly drinking results.

  o Bi- weekly medical visits with team psychiatrist to review screening tools scores and adjust medication as informed by the DA VINCI anti-depressant and anti-craving medication algorithm.
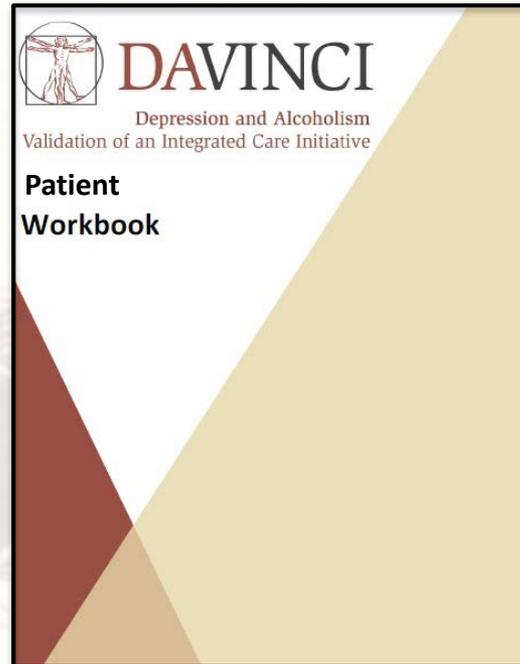
DA VINCI: Psychosocial Therapy Overview

Session: 0-2

Introduction & Motivational Enhancement

Session: 3-6

Behavioural Focus:

Behavioural Activation

Skills Building for High-Risk Situations

Session: 7-11

Cognitive Focus:

Cognitive Restructuring,

Maladaptive Assumptions,

Problem Solving,

Action Planning

Session: 12-13

Relapse Prevention

Lapse Management

Session: 14-16

Comprehensive Review

Building Social Supports

Aftercare Planning

Group Materials

Therapeutic Modalities

Cognitive Behavioural Therapy (CBT)
Motivational Interviewing (MI)
Structured Relapse Prevention (SRP)
Dialectic Behaviour Therapy (DBT)
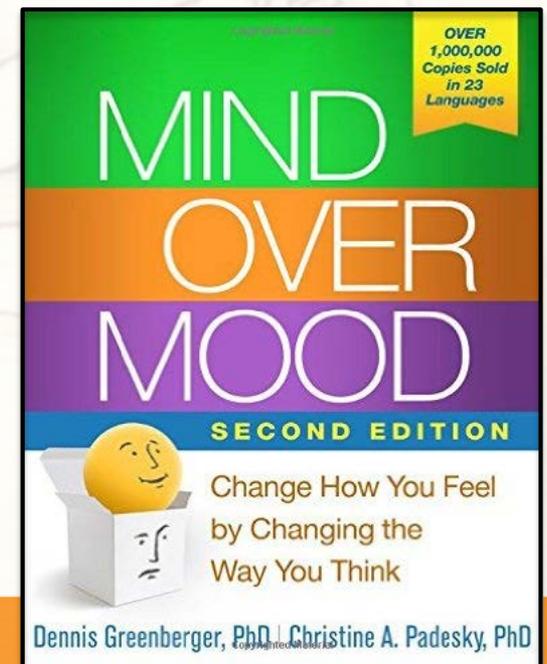
DA VINCI:
The Medical Visit

- <u>Weeks 2, 4, 6, 8, 10, 12, 14, 16</u>
  - Brief Medical Interview
  - Charting
  - Medication Titration
  - Psychosocial Stressors
  - Management of Comorbidities
  - Scales Used
    - QIDSS – Quick Inventory of Depressive Symptomatology Scale
    - PACS – Penn Alcohol Craving Scale
  - Guide for Pharmacotherapy

DA VINCI: The Medical Visit

Weeks   2, 4, 6, 8, 10, 12, 14, 16
- Algorithm:
  - Antidepressants:
    - Sertraline, Fluoxetine, Venlafaxine XR, Mirtazapine

DAVINCI
Depression and Alcoholism
Validation of an Integrated Care Initiative

The DA VINCI Pharmacotherapy Algorithm

Antidepressant Trials:
Trial A - Sertraline (Fluoxetine, Venlafaxine XR, Mirtazapine -if Sertraline previously tried and failed)
Trial B - Untried drug from Trial A Group
Trial C - Untried drug from Trials A and B Groups

Type	Medication	Dose	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8 →	Max Dose
Antidepressants	Sertraline	mg AM	25	50	50	Increase dose by 50 mg every 2-4 weeks depending on tolerability and response					200 mg/day
	Fluoxetine	mg AM	10	20	20	Increase dose by 20 mg every 4 weeks depending on tolerability and response					80 mg/day
	Venlafaxine XR	mg AM	37.5	75	75	Increase dose by 75 mg every 2-4 weeks depending on tolerability and response					375 mg/day
	Mirtazapine	mg QHS	15	30	30	Increase dose by 15 mg every 2-4 weeks depending on tolerability and response					60 mg/day

Tactics and Critical Decision Point and Critical Status Plan for the Treatment of Major Depressive Disorder

STARTING POINT → Week 0 (CDP#1) QIDs ≥ 9 Symptomatic   **PLAN →** Initiate antidepressant medication; adjust dose to lower end of therapeutic dose rang or serum level.

QIDS-C16 SCORE	Week 2	Week 4	Week 6	Week 9	Week 12
QIDS ≤ 5 (Remission)	Continue current dose.				Go to follow-up phase.
QIDS = 6-8 (Partial Response)	Gradually increase dose as tolerated.	• Continue current dose. • Consider increasing dose.	Increase/maximize dose.	• Increase dose. • Switch to another antidepressant.	• Switch to another antidepressant. • Increase dose and reevaluate in 2 weeks.
QIDS = 6-8 (SEs intolerable)	• Continue current dose and address SEs. • Decrease dose and continue for 2 additional weeks. • Switch to another antidepressant	• Continue current dose and address SEs. • Switch to another antidepressant.	• Continue current dose and address SEs. • Switch to another antidepressant.		
QIDS ≥ 9 (Non-response)	Gradually increase dose as tolerated.	• Increase dose. • Switch to another antidepressant.	Switch to another antidepressant.	Switch to another antidepressant.	Switch to another antidepressant.
QIDS ≥ 9 (SEs intolerable)	• Decrease dose and continue for 2 additional weeks. • Switch to another antidepressant.	• Switch to another antidepressant.			

DA VINCI:
The Medical Visit

- <u>Weeks 2, 4, 6, 8, 10, 12, 14, 16</u>
  - Algorithm:
    - Anticraving
      - Naltrexone; Acamprosate; Topiramate

Type	Medication	Dose	Week 1		Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8 →	Max Dose
Anticraving	Trial 1: Naltrexone	mg/day	25	25	50							50 mg/day
	Trial 2: Acamprosate	mg TID	333	333	666							666 mg TID
	Trial 3: Topiramate	mg AM				25	50	50	100	100	150	300 mg/day
		mg PM	25		50	50	50	100	100	150	150	

Criteria for Anti-Craving MedicationTreatment Non-Responders	**Criteria for Anti-Craving Medication Switch**
Treatment non-Responder will have more than 7 (women) or 14 (men) drinks per week on average. **OR** More than 1 day on which more than 3 drinks (women) or 4 drinks (men) were consumed over the period of 2 weeks.	Being defined as a Treatment non-Responder at 3 consecutive visits will trigger a switch of anticraving medication to the next level.

Group Personality

More than just alcohol and depression

Other substance use
Other mental health issues (anxiety)
Personality issues (BPD)
Relationship issues
Trauma
Physical health
Chronic pain
Employment

Like opening Pandora's box
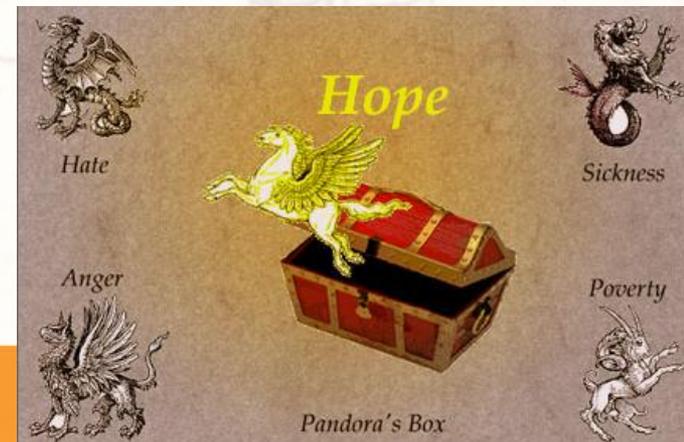
Therapist Experience

Therapist and system that suits the client population

Going beyond the Manual

Adapting to meet the evolving need for support

It can be exhausting!!

Pre and Post Group Measures

Standard Drinks Per Week (SDW)
SDW were self-reported by participants every 2 weeks from week 0 (orientation)
to week 16 (end of treatment).

SDW Bi-Weekly Scores
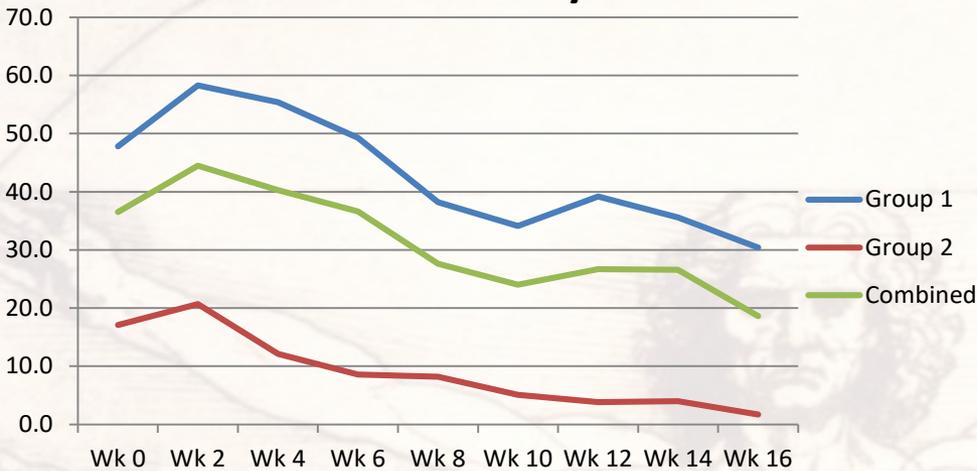
Pre and Post SDW
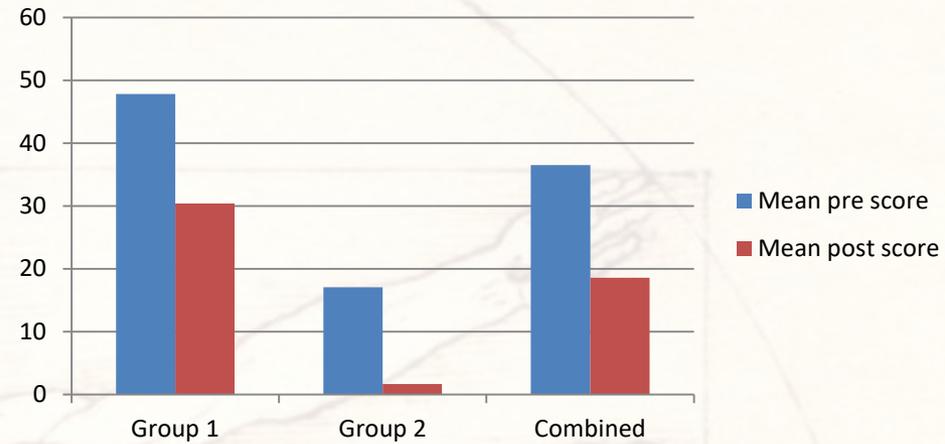
	Group 1 (n=13)	Group 2 (n=7)	Combined (n=20)
Mean SDWs at orientation	47.8	17.1	36.5
Mean SDWs at end of treatment	30.4	1.7	18.6
Percent decrease from pre- to post-group	**36.4%**	**90.0%**	**49.0%**

Pre and Post Group Measures

Standard Drinks Per Drinking Day (SDDD)

SDD were self-reported by participants every 2 weeks from week 0 (orientation)
to week 16 (end of treatment).

SDDD Bi-Weekly Scores
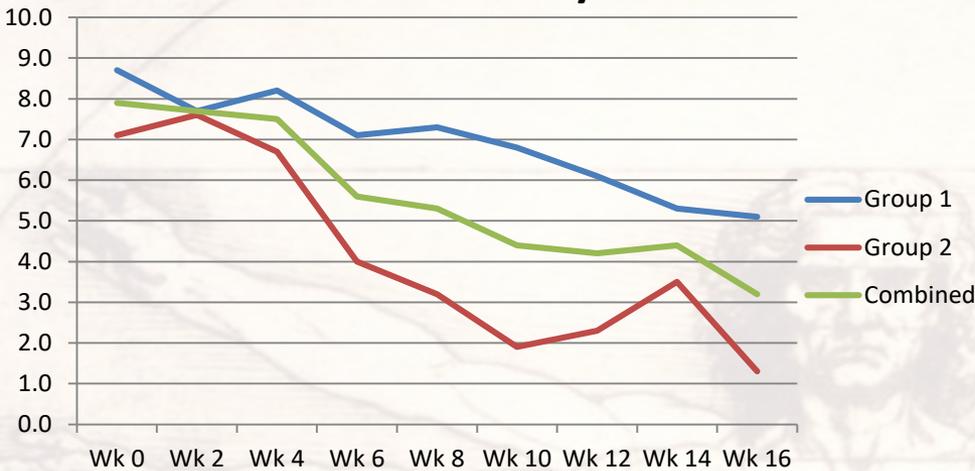
Pre and Post SDDD
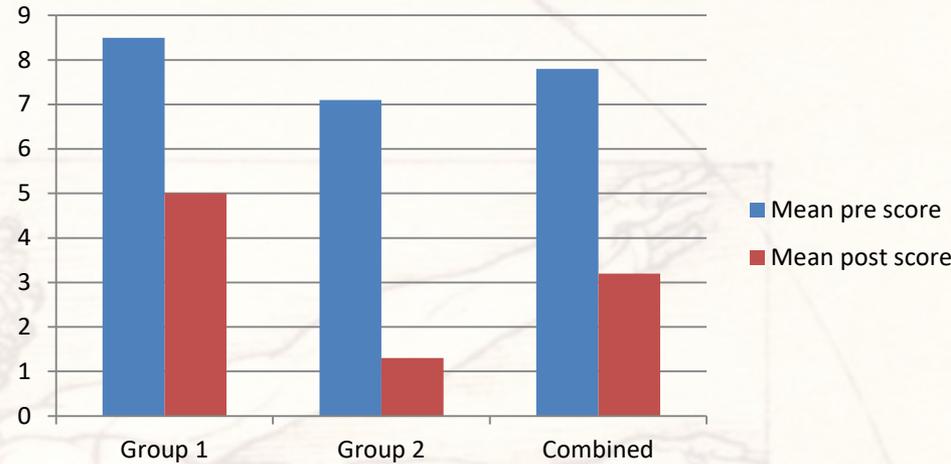
	Group 1 (n=13)	Group 2 (n=7)	Combined (n=20)
Mean SDDDs at orientation	8.5	7.1	7.8
Mean SDDDs at end of treatment	5	1.3	3.2
Percent decrease from pre- to post-group	**41.2%**	**81.7%**	**60%**

Pre and Post Group Measures

Penn Anti-Craving Scale (PACS) (min=0, max=30)
The PACS was administered every 2 weeks from week 0 (orientation) to week 16 (end of treatment).

PACS Bi-Weekly Scores
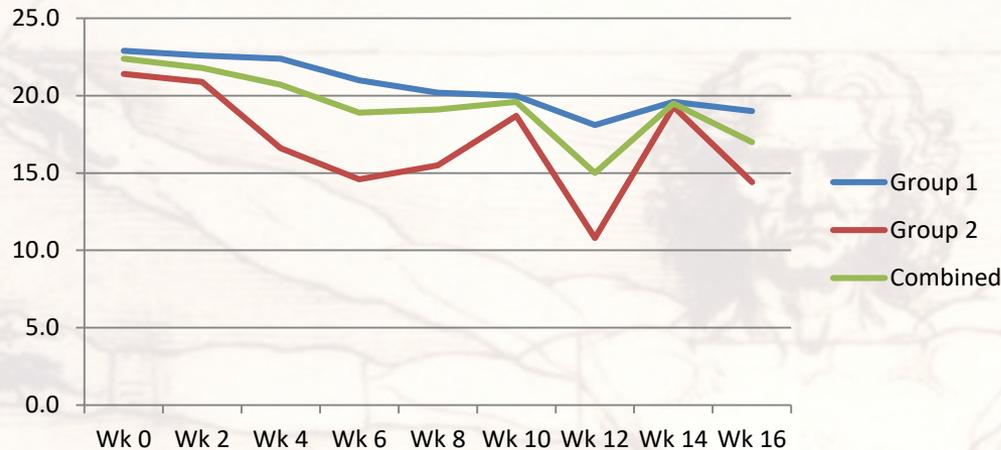
PACS Pre and Post Scores
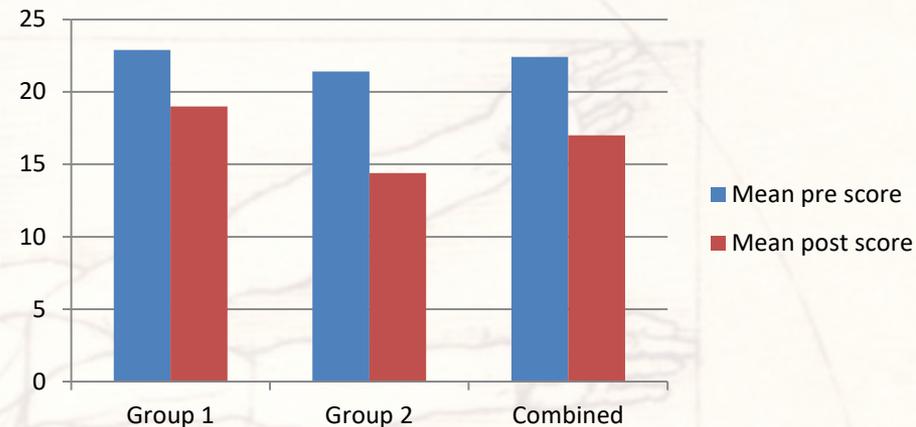
	Group 1 (n=13)	Group 2 (n=7)	Combined (n=20)
Mean score at orientation	22.9	21.4	22.4
Mean score at end of treatment	19.0	14.4	17.0
Percent decrease from pre- to post-group	**17.0%**	**32.7%**	**24.1%**

Pre and Post Group Measures

Quick Inventory of Depressive Symptomology (QIDS) (min=1, max=27)
The QIDS was administered every 2 weeks from week 0 (orientation) to week 16 (end of treatment).

QIDS Bi-Weekly Scores
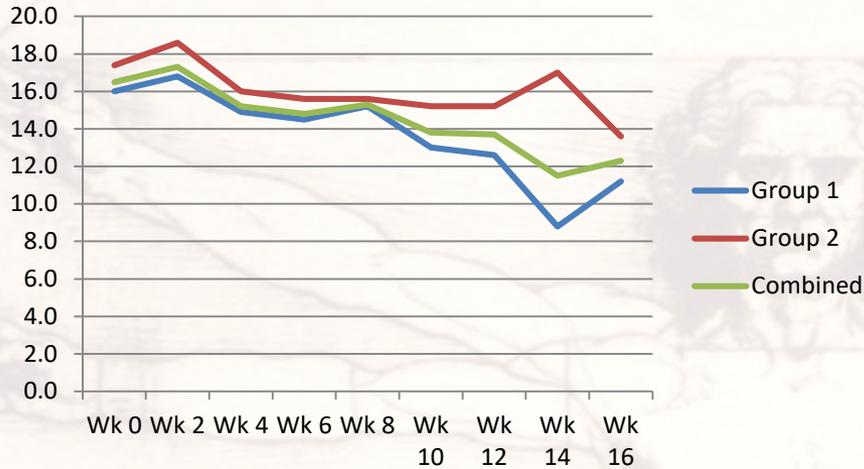
QIDS Pre and Post Scores
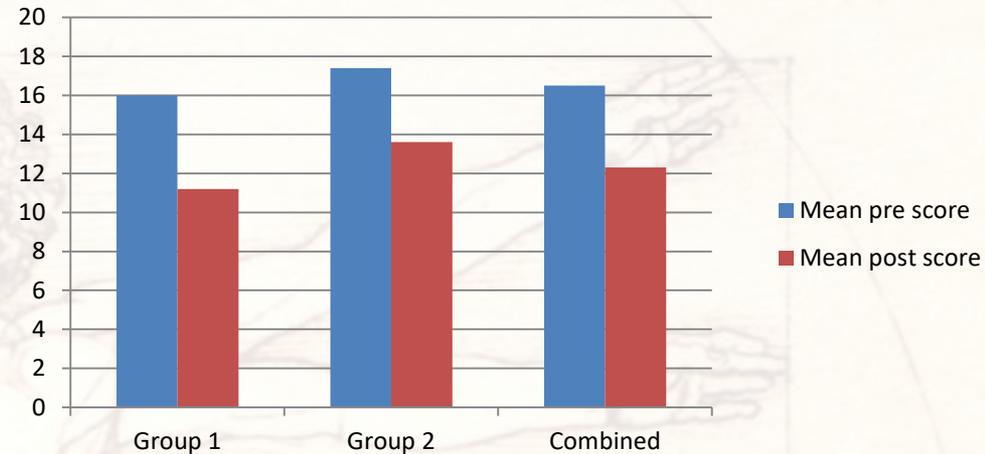
	Group 1 (n=13)	Group 2 (n=7)	Combined (n=20)
Mean score at orientation	16.0	17.4	16.5
Mean score at end of treatment	11.2	13.6	12.3
Percent decrease from pre- to post-group	**30.0%**	**21.8%**	**25.5%**

Standardized Assessments

Assessment Tools	Measures
Alcohol Use Disorder Identification Test (AUDIT)	Enter the Pathway Exit the Pathway
Penns Alcohol Craving Scale (PACS)	Enter the Pathway Biweekly Exit the Pathway
Quick Inventory of Depressive Symptomology (QIDS)	Enter the Pathway Biweekly Exit the Pathway
Suicide Risk Assessment	Enter the Pathway If required Exit the Pathway
The Quality of Life Scale (QOLS) World Health Organization Disability Assessment Schedule (WHODAS 2.0)	Enter the Pathway Exit the Pathway

The Innovation
Use of the Ocean Tablet

Technical Overview

- Ocean software by CognisantMD
- Cost - $50 per tablet per month
- Telus PS Suite EMR

- Hipstreet Phoenix 10.1" 16GB (Android 4.4)
- 1:1 tablet to patient ratio

How does it work?

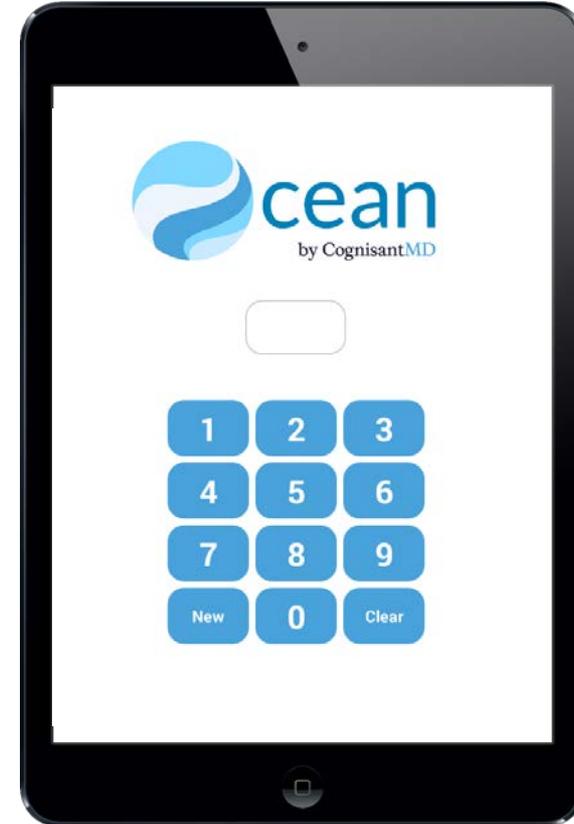1. Facilitator pre-loads Ocean custom form in patient EMR chart to generate passcode
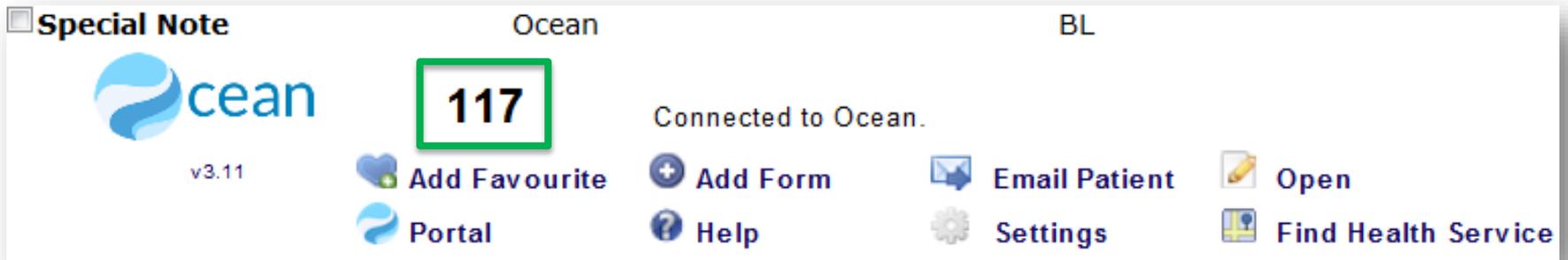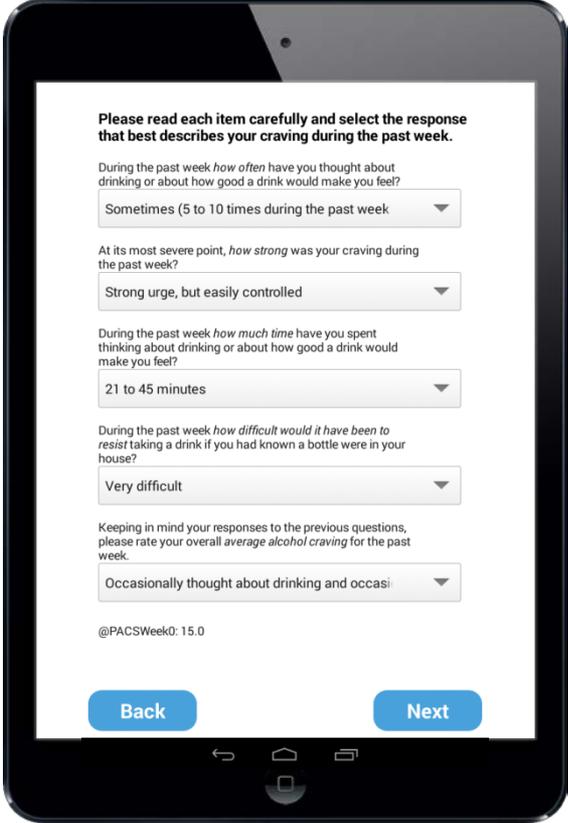
How does it work?

2. Patient enters their passcode to begin completing forms

How does it work?

3. Patient completes forms on the tablet

How does it work?

4. Personal Health Information is converted to a clinical note and sent directly to the EMR

Sep 7, 2016
DAVINCI Client Questionnaire
Demographics
@Age ███████
@Gender: █████
Medical history
@Epilepsy_seizures: 0 (No)
@Chronic_Pain: 1 (Yes)
@Liver_Disease: 0 (No)
@Allergies: 0 (No)
@Meds: Zoloft 100 mg
Mental health history
@Bipolar_Affective_Disorder: 0 (No)
@Borderline_Personality_Disorder: 0 (No)
@Other_Psychiatric: 0 (No)
Smoking History
@Cu_Smoking: 0 (Current non-smoker)
@Hx_Smoking: 0 (never smoked)
Substance Use History
@Cu_Hypno: 2 (Current daily use)
@Cu_Opioids: 0 (No current use)
@Hx_Opioids: 0 (No history of use)
@Cu_Stimulants: 0 (No current use)
@Hx_Stimulants: 1 (History of some use)
@Cu_Hallucinogens: 0 (No current use)
@Hx_Hallucinogens: 1 (History of some use)
@Cu_Cannabis: 0 (No current use)
@Hx_Cannabis: 1 (History of some use)
@Cu_Others: 0 (No)
@Hx_Others: 1 (Yes)
@Hx_Others_List: Ecstasy
@Hx_Others_List: 1 (History of some use)
Alcohol use
@Age_First_Drink: 18
@Age_Regular_Drinking: 20
@Age_Problem_Drinking: 27
@AUDmeds: 0 (No)
@Psychotherapy_AUD: 1 (Yes)
@AA_Self_Help: 1 (Yes)
@Detox: 1 (Yes)
@Withdrawal_Seizures: 0
@GoalAlcohol: 2 (Reduction)
History of Depression
@Age_Depressive_Symptoms_Emerged: 21
@Age_MDD_Dx: 43
@Psychotherapy_MDD: 1 (Yes)
@Pharmacotherapy_MDD: 1 (Yes)
@Pharmacotherapy_MDD_List: Zoloft
@Hx_Suicide_Attempts: **1 (Ideation and self-harm)**
@ER_Admissions_MDD: **1 (Yes)**

Coded to match DAVINCI data dictionary

Responses can be flagged and colour-coded

Forms and Schedule

- Weeks 0/16
  - Tablet Orientation
  - DAVINCI Client Questionnaire
  - QIDS-SR16
  - PACS
  - AUDIT
  - EQ-5D-5L Health Questionnaire
  - WHODAS 2.0

- Weeks 0/2/4/6/8/10/12/14/16
  - QIDS-SR16
  - PACS

[DAVINCI] [Week 0] AUDIT - Alcohol Use Disorders Identification Test

[DAVINCI] [Week 0] Client Questionnaire

[DAVINCI] [Week 0] EQ-5D-5L Health Questionnaire

[DAVINCI] [Week 0] PACS - Penn Alcohol Craving Scale

[DAVINCI] [Week 0] Quick Inventory of Depressive Symptomatology (QIDS-SR16)

[DAVINCI] [Week 0] Tablet Orientation

[DAVINCI] [Week 0] WHODAS - World Health Organization Disability Assessment Schedule 2.0

All DAVINCI forms are publicly shared on the Ocean website and available to download for FREE!

Tablet Overview

Tablet Orientation

Welcome to the Hamilton Family Health Team DA VINCI Program!

This is an orientation form to help you get acquainted with the tablets that we will be using for the duration of the program. The questions below are for demonstration purposes only and are not part of the DA VINCI Program. Please follow the instructions on the page until you have completed each question.

Yes/No Question

This is a Yes/No question. Please select your answer by tapping Yes or No.

Example: Do you have a family doctor?

| Yes | No |

Menu Question

This is a Menu question. Please select your answer by choosing one option from the drop-down menu.

Example: What is your favourite season?

-- ▼

Multiple Answer Menu Question

This is a multiple answer Menu question. Please select all answers that apply by tapping the buttons.

Example: Which of the following fruits do you like? (select all that apply)

Back — **Next**

Multiple Answer Menu Question

This is a multiple answer Menu question. Please select all answers that apply by tapping the buttons.

Example: Which of the following fruits do you like? (select all that apply)

Apples	Peaches	Pears
Plums	Bananas	Oranges
Watermelon	None	

Sliding Scale Question

This is a sliding scale question. Please select your answer by dragging the knob on the scale to the point that best reflects your answer.

Example: What is your opinion of reality TV?

Hate it — Neutral — Love it

Number Input

The answer to this question will be a number. Click the box to open the keyboard and enter your response. You can also select the number using the arrow buttons in the far right corner of the box.

Example: Besides yourself, how many people live in your home?

Back — **Next**

Client Questionnaire

Is your goal to abstain from alcohol completely or to reduce your alcohol use?

| Abstain from alcohol completely | Reduce alcohol use |

History of Depression

At what age did you first experience symptoms of depression?

At what age were you first diagnosed with depression?

Have you ever received therapy or counselling for depression?

| Yes | No |

Have you ever been on medication for depression?

| Yes | No |

Have you ever had thoughts about harming yourself or tried to harm yourself?

-- ▼

Have you ever been admitted to hospital because you tried to harm yourself?

| Yes | No |

Back — **Next**

Examples of the types of questions used in the program are reviewed

Tablet Overview

QIDS

PACS

EQ-5L-5D

Examples of button and sliding scale questions

Scores update in real time for the patient to see

Tablet Overview

AUDIT

Questions can be marked mandatory

Image files can be imported to the form to use as visual aides

Data Overview

Telus PS Suite EMR function '**Custom Vitals'**

– Data is documented in the same way as vital metrics in the EMR (BP, Ht, Wt, etc.)

– This allows for standard documentation resulting in simple data extraction
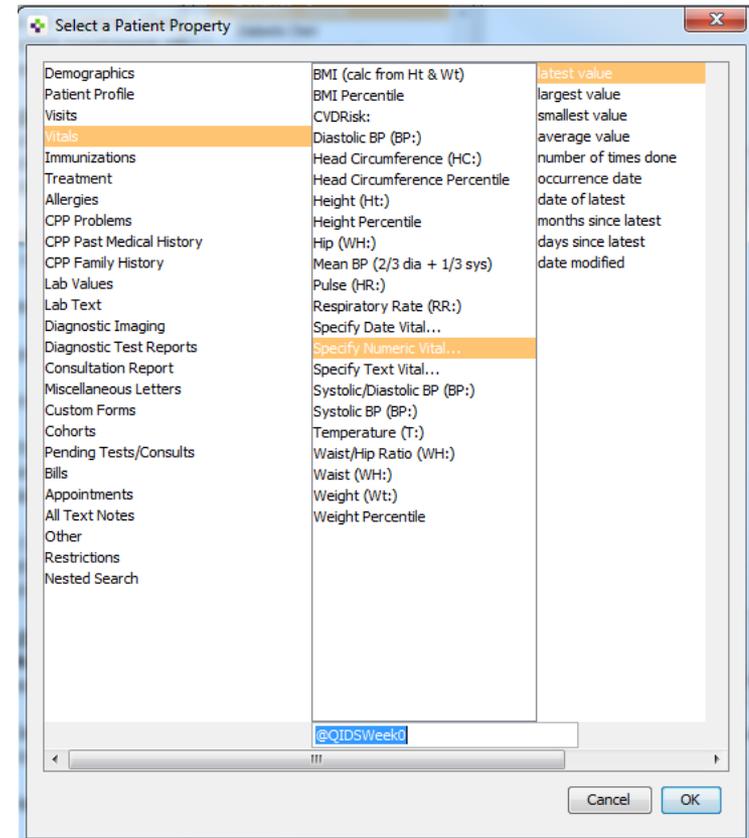
Data Overview

EMR Output

AUDIT - Alcohol Use Disorders Identification Test - Week 1
1. How often do you have a drink containing alcohol? **4 or more times a week**
2. How many drinks containing alcohol do you have on a typical day when you are drinking? **10 or more drinks**
3. How often do you have six or more drinks on one occasion? **Daily or almost daily**
4. How often during the last year have you found that you were not able to stop drinking once you had started? **Daily or almost daily**
5. How often during the last year have you failed to do what was normally expected from you because of drinking? Monthly
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? **Daily or almost daily**
7. How often during the last year have you had a feeling of guilt or remorse after drinking? **Daily or almost daily**
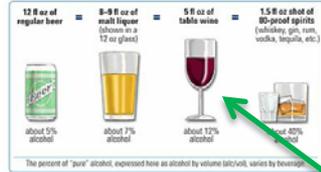8. How often during the last year have you been unable to remember what happened the night before because you had been drinking? Less than monthly
9. Have you or someone else been injured as a result of your drinking? **Yes, during the last year**
10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down? **Yes, during the last year**
@AUDITWeek0: 35

EQ-5D-5L Health Questionnaire - Week 1
MOBILITY
I have slight problems walking about
SELF-CARE
I have no problems washing or dressing myself
USUAL ACTIVITIES
I have slight problems doing my usual activities
PAIN / DISCOMFORT
I have slight pain or discomfort
ANXIETY / DEPRESSION
I am severely anxious or depressed
VAS SCORE
Choose a point on the scale to indicate how your health is TODAY: 39
Scores
@MobilityWeek0: 2
@SelfCareWeek0: 1
@UsualActivitiesWeek0: 2
@PainDiscomfortWeek0: 2
@AnxietyDepressionWeek0: 4
@VASWeek0: 39

Data Overview

Query Output

- All data can be pulled using front-end EMR queries

Client Questionnaire

@Gender	@Epilepsy_...	@Chronic_...	@Liver_Dis...	@Allergies	@Bipolar_A...	@Borderlin...	@Other_Ps...	@Cu_Smok...
2	0	1	0	0	0	0	0	0
1	0	1	0	1	0	0	1	0
2	0	1	0	0	0	0	0	1
1	0	1	0	1	0	0	1	1
1	0	1	0	0	0	0	0	1
1	0	0	0	0	0	0	1	1
2	0	0	0	0	0	1	0	2
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	1	0	2
2	0	1	0	0	0	0	0	0
1	0	0	0	1	0	0	0	0
1	0	1	0	0	0	0	0	1
1	0	1	0	0	0	0	0	1
2	0	1	0	1	0	0	1	1
1	0	1	0	1	0	0	0	1
2	0	0	0	0	0	0	1	0

Assessment Measures

@QIDSWee...	@PACSWee...	@AUDITWe...	@MobilityW...	@SelfCare...	@UsualActi...	@PainDisco...	@AnxietyD...	@VASWeek0	@H1Week0	@H2Week0	@H3Week0	@SimpleW...
11	27	20	1	1	3	2	2	51	6	0	0	9
19	13	25	2	2	3	3	4	23	25	3	30	22
22	27	35	1	3	4	5	5	18	4	3	5	33
25	28	36	3	2	3	4	5	24	30	30	30	26
16	18	25	3	1	4	4	3	48	30	30	30	23
18	13	19	2	1	3	3	4	38	30	30	0	30
21	27	29	1	2	4	2	5	31	30	20	10	31
7	21	32	1	1	1	2	3	87	1	1	1	6
15	11	19	3	2	2	3	3	54	20	15	15	27
14	13	22	1	1	2	3	3	48	30	0	15	24
11	29	32	1	1	1	1	1	72	25	15	25	16
19	12	22	3	1	3	3	4	25	15	0	0	17
20	26	24	1	1	5	4	4	57	30	30	30	19
22	28	30	1	1	3	3	4	48	18	10	20	18

Additional Tools

DAVINCI Scorecard

DAVINCI Program Scorecard

Hamilton Family Health Team

Patient:		Gender:	
DOB:	DD/MM/YYYY	Patient Phone:	
		Patient Cell Phone:	

	QIDS	PACS	AUDIT	H1	H2	H3	Simple
Week 0:	14	21	23	30	0	30	10
Week 2:	never d	never d					
Week 4:	14	18					
Week 6:	10	8					
Week 8:	11	14					
Week 10:	12	20					
Week 12:	8	10					
Week 14:	7	13					
Week 16:	7	10	29	30	7	23	12

EQ-5D-5L Health Questionnaire

	PRE	POST
Mobility:	2	3
Self-Care:	1	1
Usual Activities:	2	2
Pain/Discomfort:	4	4
Anxiety/Depression:	3	2
Visual Analog Scale:	48	43

DAVINCI Referral

Group or Centralized Service:
Choose the Program or Service referring to:

DAVINCI Program ▾

DAVINCI

DA VINCI is an integrated treatment program that is specifically designed for individuals who have been diagnosed with major depression and alcohol dependence/alcohol use disorder (AUD). The DA VINCI pathway utilizes an interdisciplinary team of health care professionals who provide evidence-based care, combining psychotherapy and pharmacotherapy (anti-depressant and anti-craving medications) to treat both depression and AUD simultaneously.

Referral Process and Program Overview

I, Dr. , confirm:

1. a) ☐ The primary diagnosis of MDD and AUD via DSM-V
   OR
   ☐ If not a paper diagnosis, include the clinical scales:

   PHQ-9: _____   AUDIT: _____

   b) ☐ The patient has been informed and consented to integrated treatment of pharmacological and psychotherapy intervention.

2. Is there a mental health counsellor involved in this patient's care?   ☐No ☐Yes
   If yes, name(s): _____

3. Past anti-depressant(s):
   _____

4. Past anti-craving medication(s):
   _____

Handouts:		Tools:
Patient Brochure	**DSM-V Criteria**	**PHQ-9 Tool**
Provider Handout		**AUDIT Tool**

Hamilton Family Health Team
Better care, together.

Future Development
Moving Forward with DAVINCI

- DAVINCI clinical custom forms for physicians/psychiatrists

- Integrate clinical custom forms with Ocean forms

- Time-line follow-back Ocean form

- Real-time feedback for patients on previous scores

Thank you!

Questions?