Using implementation science embedded within a learning health systems approach to scale up integrated primary mental health care in real world primary health care in KwaZulu-Natal.

Professor Arvin Bhana– on behalf of the Mental Health team - Centre for Research in Health Systems

Why Implementation Research (IR)?

- The broader goals of UHC face significant implementation barriers, most often reflected in local contextual issues
- IR helps to explain the reasons behind implementation failure and to test strategies to overcome them
- IR strengthens identification of the types of routine health data needed to assist in monitoring innovations in the health system
- IR is important to understand task-sharing innovations in improving access to mental health services
- IR provides the basis for developing a systematic learning process in the form of learning collaboratives [1,2]

[1] Sheikh K, Hargreaves J, Khan M, Mounier-Jack S. Implementation research in LMICs—evolution through innovation. Health Policy and Planning. 2020;35(Supplement_2):ii1–ii3.

[2] Ghaffar A., Swaminathan S., Sheikh K., et al. (2020). Implementation research is crucial to countries' efforts to strengthen learning health systems. Health Policy and Planning, 35, ii4-ii6.

Why Integrate and What to do to integrate?

- Integration of mental health into routine primary care services is globally accepted to improve health outcomes and narrow the mental health treatment gap, with an estimated 92% of people with depression not receiving treatment [1, 2]
- Use task sharing
  - Large body of evidence on the effectiveness of task sharing of mental health treatments with generalist health care providers[2]
- Adopt collaborative care (CC) models
  - More than 80 RCTs have shown the benefits of CC models for improving outcomes of patients with depression and anxiety, as well as being more cost-effective compared to usual primary care[3]

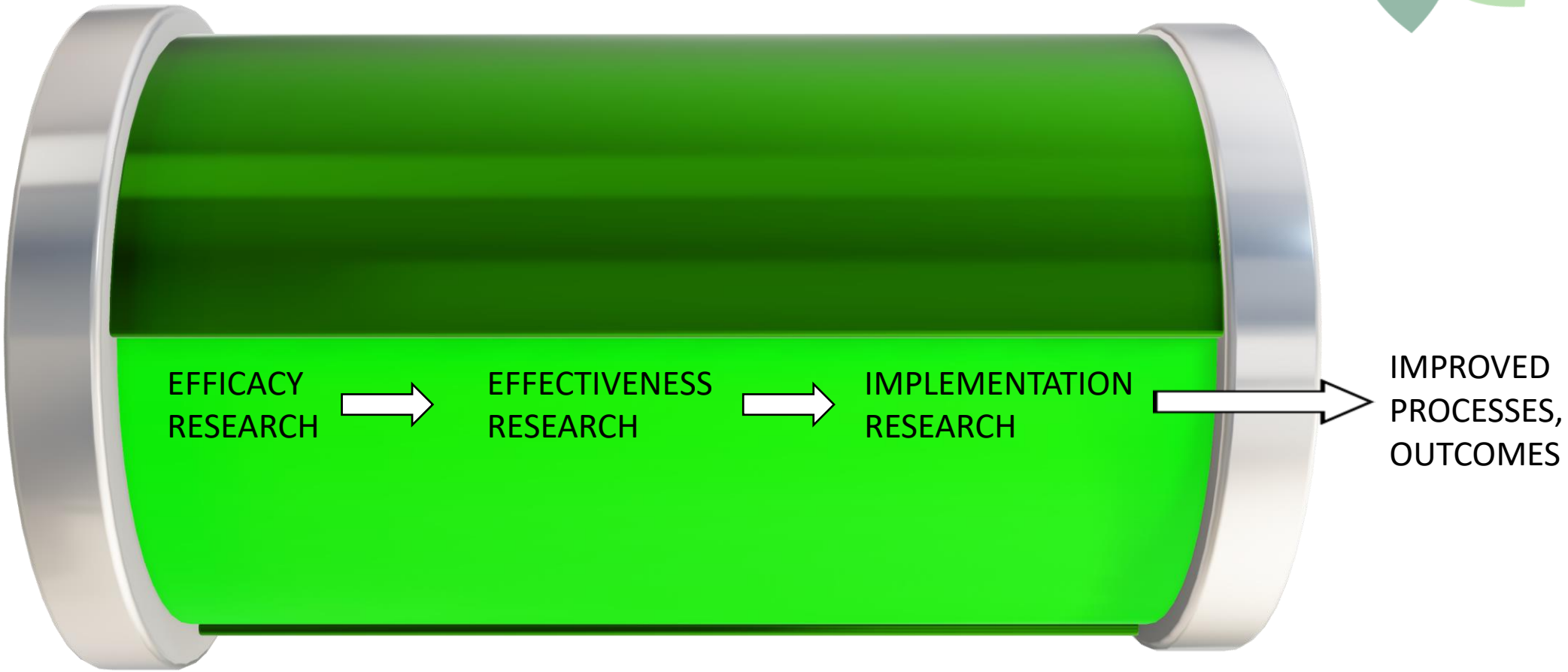
1. Petersen I, Kemp CG, Rao D, Wagenaar BH, Bachmann M, Sherr K, et al. (2023) Strengthening integrated depression services within routine primary health care using the REAIM framework in South Africa. PLOS Glob Public Health 3(11): e0002604. https://doi.org/10.1371/ journal.pgph.0002604
2. Singla DR, Kohrt BA, Murray LK, Anand A, Chorpita BF, Patel V. Psychological Treatments for the World: Lessons from Low- and Middle-Income Countries. Annual review of clinical psychology. 2017;13:149-181.
3. Kroenke, K., Unutzer, J (2017). Closing the false divide: sustainable approaches to integrating mental health services into primary care. Journal of General Internal Medicine 32: 404-410.

Why learning health systems (LHS)?

- LHS reflect a paradigm shift in how healthcare organisations approach the relationship between research and practice (from top-down to bottom-up)
- At its core, a LHS represents a bidirectional relationship between health systems and researchers by narrowing the evidence-to-quality chasm, so that evidence informs practice and practice informs evidence[1]
- LHS extend beyond traditional research-practice partnerships to encompass systems "with the capacity to learn, innovate and adapt…while putting people and equity at the centre of their design."[2]
- Decision-making through a cyclical process of problem identification, solution development (plan) and implementing action and adaptations (Continuous Quality Improvement-CQI) drives the information-deliberation-action heuristic

1 Tuzzio et al. (2019). The Promise of Pragmatic Clinical Trials Embedded in Learning Health Systems. eGMES, vol 7
2 Piotrowskil et al. (2023) Promoting equity through inclusive learning, planning and implementing: lessons from Nigeria's mass drug administration programme for neglected tropical diseases. International Health, 15, Suppl.i63-74

Knowledge-Implementation Gap



TRADITIONAL RESEARCH PIPELINE

SMhINT Evaluation Research Design (Hybrid Type III)[1]

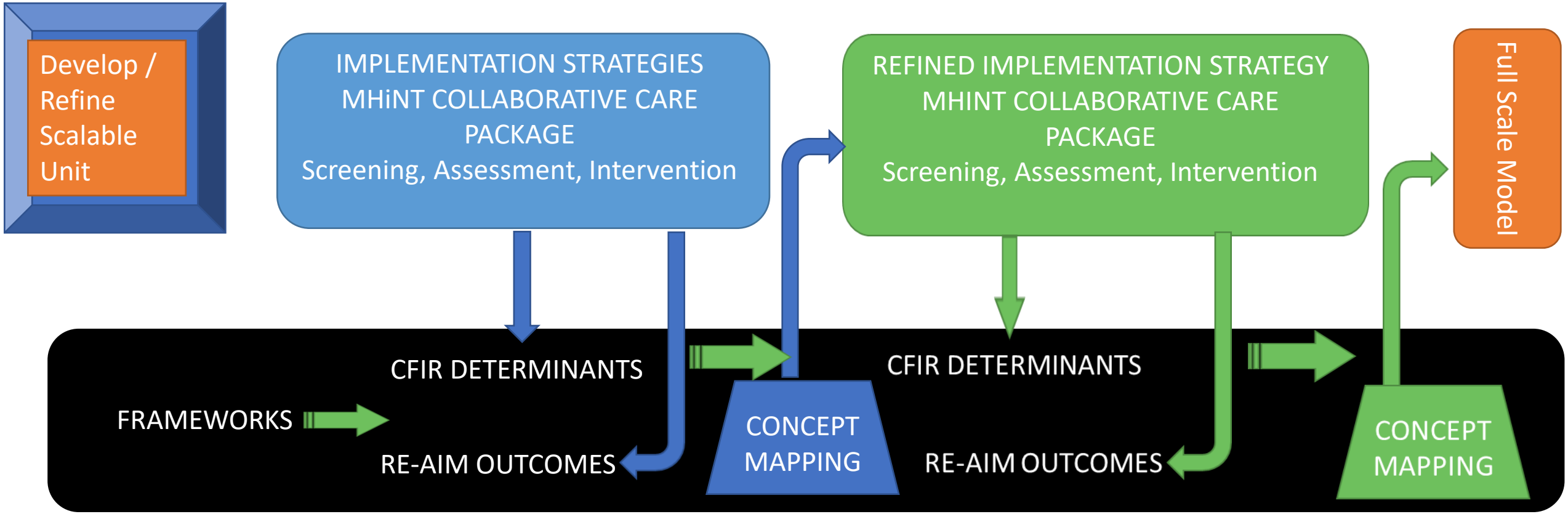
[1] Petersen, I., Kemp, C.G., Rao, D., Wagenaar, B.H., Sherr, K., Grant, M., …Bhana, A. Implementation and Scale-Up of Integrated Depression Care in South Africa: An observational implementation research protocol. Psychiatric Services. 2021, Issue 9, 1065-1075

STAGE 1
"Building Evidence"

Urban Context

STAGE 2
"Scalable Unit"

Urban, Peri-urban, Rural Contexts



HOW?

2

Ingredients for scale up used by MhINT/SMhINT

2.1 Technical support

2.2 Implementation science research

2.3 Systems strengthening

Original MhINT Technical Support Package

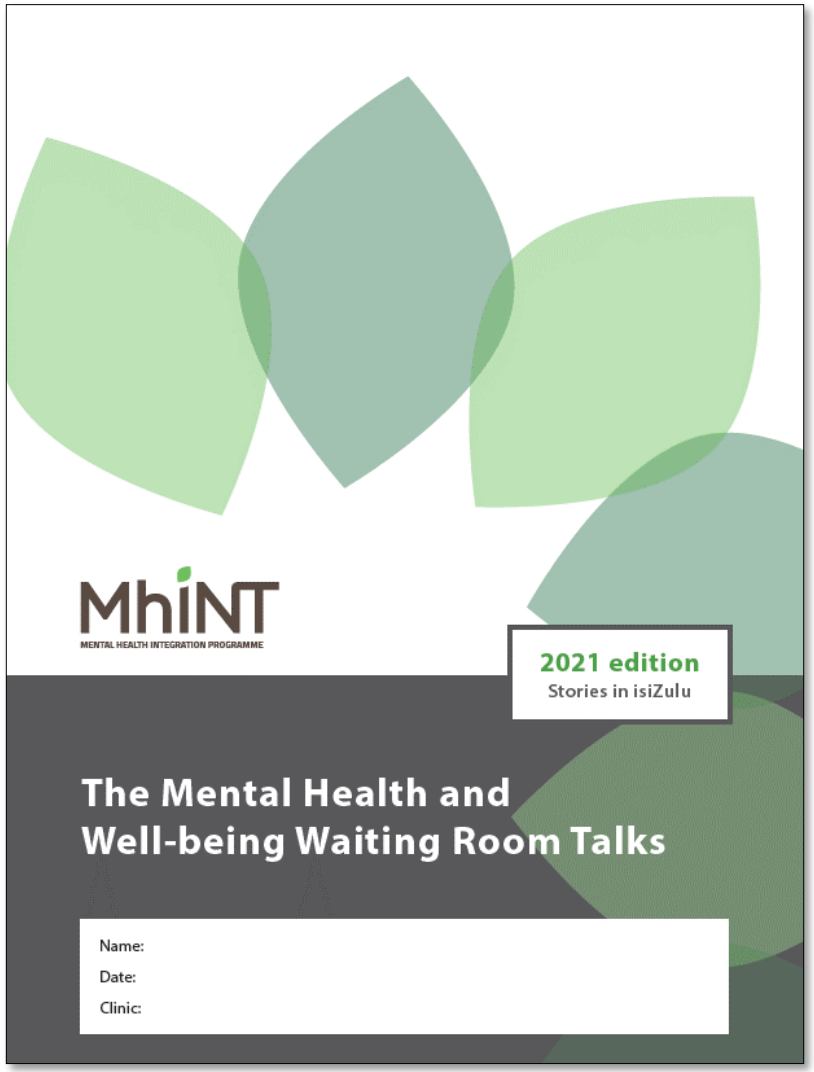
- Focused mainly on improving supply of services
  - Enhanced APC Mental Health
  - Enhanced referral
    - Co-located counselling service
- Implementation strategies
  - Use of guidelines
  - Cascaded training
  - Quality Improvement mentoring
  - Supervision

SMhINT Evaluation using Implementation Science Research

2.2.

Method: Assessment of reach, effectiveness, adoption, implementation - RE-AI(M)

- Secondary data
  - District Health Information System (DHIS) data
  - Extracted clinic record data
  - Project records
- Patient cohort study
- Facility profiles
- Cross sectional surveys: ORIC; MICA
- CFIR qualitative interviews



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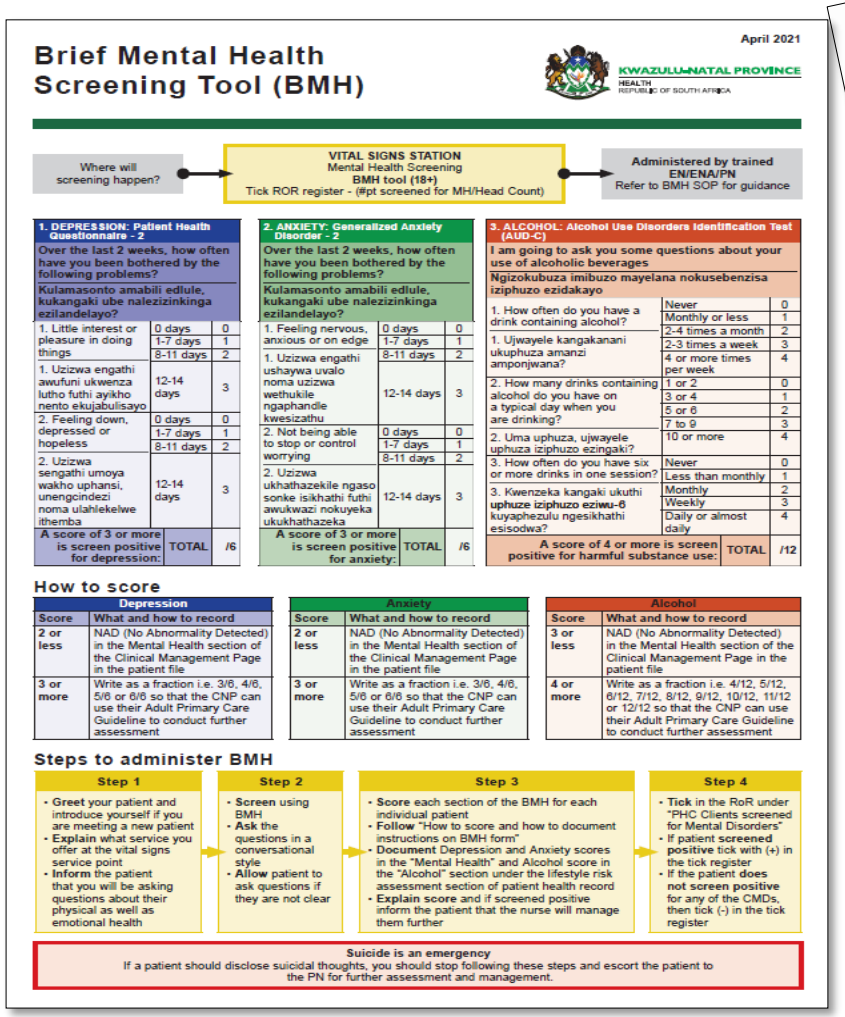


Brief Mental Health Screening Tool (BMH)

April 2021

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Where will screening happen?

VITAL SIGNS STATION
Mental Health Screening
BMH tool (18+)
Tick ROR register - (#pt screened for MH/Head Count)

Administered by trained **EN/ENA/PN**
Refer to BMH SOP for guidance

1. DEPRESSION: Patient Health Questionnaire - 2		
Over the last 2 weeks, how often have you been bothered by the following problems?		
Kulamasonto amabili edlule, kukangaki ube nalezizinkinga ezilandelayo?		
1. Little interest or pleasure in doing things	0 days	0
	1-7 days	1
	8-11 days	2
1. Uzizwa engathi awufuni ukwenza lutho futhi ayikho nento ekujabulisayo	12-14 days	3
2. Feeling down, depressed or hopeless	0 days	0
	1-7 days	1
	8-11 days	2
2. Uzizwa sengathi umoya wakho uphansi, unengcindezi noma ulahlekelwe ithemba	12-14 days	3
A score of 3 or more is screen positive for depression:	TOTAL	/6

2. ANXIETY: Generalized Anxiety Disorder - 2		
Over the last 2 weeks, how often have you been bothered by the following problems?		
Kulamasonto amabili edlule, kukangaki ube nalezizinkinga ezilandelayo?		
1. Feeling nervous, anxious or on edge	0 days	0
	1-7 days	1
	8-11 days	2
1. Uzizwa engathi ushaywa uvalo noma uzizwa wethukile ngaphandle kwesizathu	12-14 days	3
2. Not being able to stop or control worrying	0 days	0
	1-7 days	1
	8-11 days	2
2. Uzizwa ukhathazekile ngaso sonke isikhathi futhi awukwazi nokuyeka ukukhathazeka	12-14 days	3
A score of 3 or more is screen positive for anxiety:	TOTAL	/6

3. ALCOHOL: Alcohol Use Disorders Identification Test (AUD-C)		
I am going to ask you some questions about your use of alcoholic beverages		
Ngizokubuza imibuzo mayelana nokusebenzisa iziphuzo ezidakayo		
1. How often do you have a drink containing alcohol?	Never	0
	Monthly or less	1
1. Ujwayele kangakanani ukuphuza amanzi amponjwana?	2-4 times a month	2
	2-3 times a week	3
	4 or more times per week	4
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	0
	3 or 4	1
	5 or 6	2
	7 to 9	3
2. Uma uphuza, ujwayele uphuza iziphuzo ezingaki?	10 or more	4
3. How often do you have six or more drinks in one session?	Never	0
	Less than monthly	1
3. Kwenzeka kangaki ukuthi **uphuze iziphuzo eziwu-6** kuyaphezulu ngesikhathi esisodwa?	Monthly	2
	Weekly	3
	Daily or almost daily	4
A score of 4 or more is screen positive for harmful substance use:	TOTAL	/12

How to score

Depression	
Score	What and how to record
2 or less	NAD (No Abnormality Detected) in the Mental Health section of the Clinical Management Page in the patient file
3 or more	Write as a fraction i.e. 3/6, 4/6, 5/6 or 6/6 so that the CNP can use their Adult Primary Care Guideline to conduct further assessment

Anxiety	
Score	What and how to record
2 or less	NAD (No Abnormality Detected) in the Mental Health section of the Clinical Management Page in the patient file
3 or more	Write as a fraction i.e. 3/6, 4/6, 5/6 or 6/6 so that the CNP can use their Adult Primary Care Guideline to conduct further assessment

Alcohol	
Score	What and how to record
3 or less	NAD (No Abnormality Detected) in the Mental Health section of the Clinical Management Page in the patient file
4 or more	Write as a fraction i.e. 4/12, 5/12, 6/12, 7/12, 8/12, 9/12, 10/12, 11/12 or 12/12 so that the CNP can use their Adult Primary Care Guideline to conduct further assessment

Steps to administer BMH

Step 1
- **Greet** your patient and introduce yourself if you are meeting a new patient
- **Explain** what service you offer at the vital signs service point
- **Inform** the patient that you will be asking questions about their physical as well as emotional health

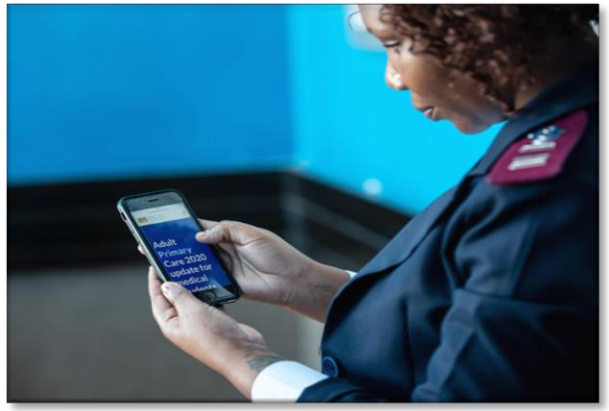
Step 2
- **Screen** using BMH
- **Ask** the questions in a conversational style
- **Allow** patient to ask questions if they are not clear

Step 3
- **Score** each section of the BMH for each individual patient
- **Follow** "How to score and how to document instructions on BMH form"
- **Document** Depression and Anxiety scores in the "Mental Health" and Alcohol score in the "Alcohol" section under the lifestyle risk assessment section of patient health record
- **Explain score** and if screened positive inform the patient that the nurse will manage them further

Step 4
- **Tick** in the RoR under "PHC Clients screened for Mental Disorders"
- If patient **screened positive** tick with (+) in the tick register
- If the patient **does not screen positive** for any of the CMDs, then tick (-) in the tick register

Suicide is an emergency
If a patient should disclose suicidal thoughts, you should stop following these steps and escort the patient to the PN for further assessment and management.

Bhana A. et al. (2019). Validation of a brief mental health screening tool for common mental disorders in primary healthcare. SAMJ, 109(4):278-283.



Looking for peace of mind?

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Is your emotional health thermometer in the red?

At Uvuyo Clinic our emotional thermometers were in the red!
But the **APC Wellness Resource** helped us **learn coping skills**.
Join us and we'll help you get to the green zone too!

Hi, I'm **Sr Buthelezi** the acting operational manager.
During the pandemic I lost direction and struggled to cope with all my responsibilities...
Through this resource I learnt skills to **manage problems** that felt impossible to tackle. It also helped me strengthen my **leadership skills**. The skills I learnt are actually for all of us!

Hi, I am **Sr Johnson**. I'm a burnt out exhausted nurse. I can't go on giving bad news to families when their loved one is unwell or has passed away.
The Wellness Resource taught me that I can **give bad news and still care for myself**!

Hello, I'm **Mr Mthembu**. I'm diabetic and going to work where we treat COVID-19 stressed me. My fear and anxiety stopped me from sleeping.
With this resource I learnt how to deal with my unhealthy thoughts which **helped manage my anxiety**. I also learnt how to manage my diabetes and protect myself against getting COVID-19.

Hi there, I'm **Sr February**. This year has been very challenging. I have been struggling with anxiety that led to depression.
The Wellness Resource taught me that **depression can happen to any of us** and we can get help. I did! I also learned how breathing can help with managing my anxiety.

And I'm **Mr Ward**. Due to COVID, I have lost a family member and a close friend.
The Wellness Resource helped me to **understand my losses** and how to **find ways to grieve** during this crazy time. My family and I are now coping better.

Find us on **https://ktuonlineschool.datafree.co/courses/Wellness**

adult primary care
UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI
UNIVERSITY OF CAPE TOWN
SMhINT
ASSET

CFIR interviews: factors hindering/promoting adoption

Interviews (N=79): Nurses, Counsellors, OMs, patients
Survey: (N=68)

Individual Characteristics

Enabling
- Training exposure

Barriers
- Personal emotional issues

Inner Setting

Barriers
- Cascade model of training
- Poor psychosocial support
- High workloads
- No validated screening tool
- Lack of supervision/mentoring (nurses)
- Co-located counselling not always available, no indicators/targets

Outer setting Characteristics

Barriers
- Low levels of MH literacy & demand for services

Intervention Characteristics

Barriers
- Additional time

Enabling

Counselling acceptable to patients

Kemp, C. et al. 2021. Pushing the bench: a mixed methods study of barriers to and facilitators of primary depression care by professional nurses in KwaZulu-Natal, South Africa, Soc Sci and Med. Mental Health.

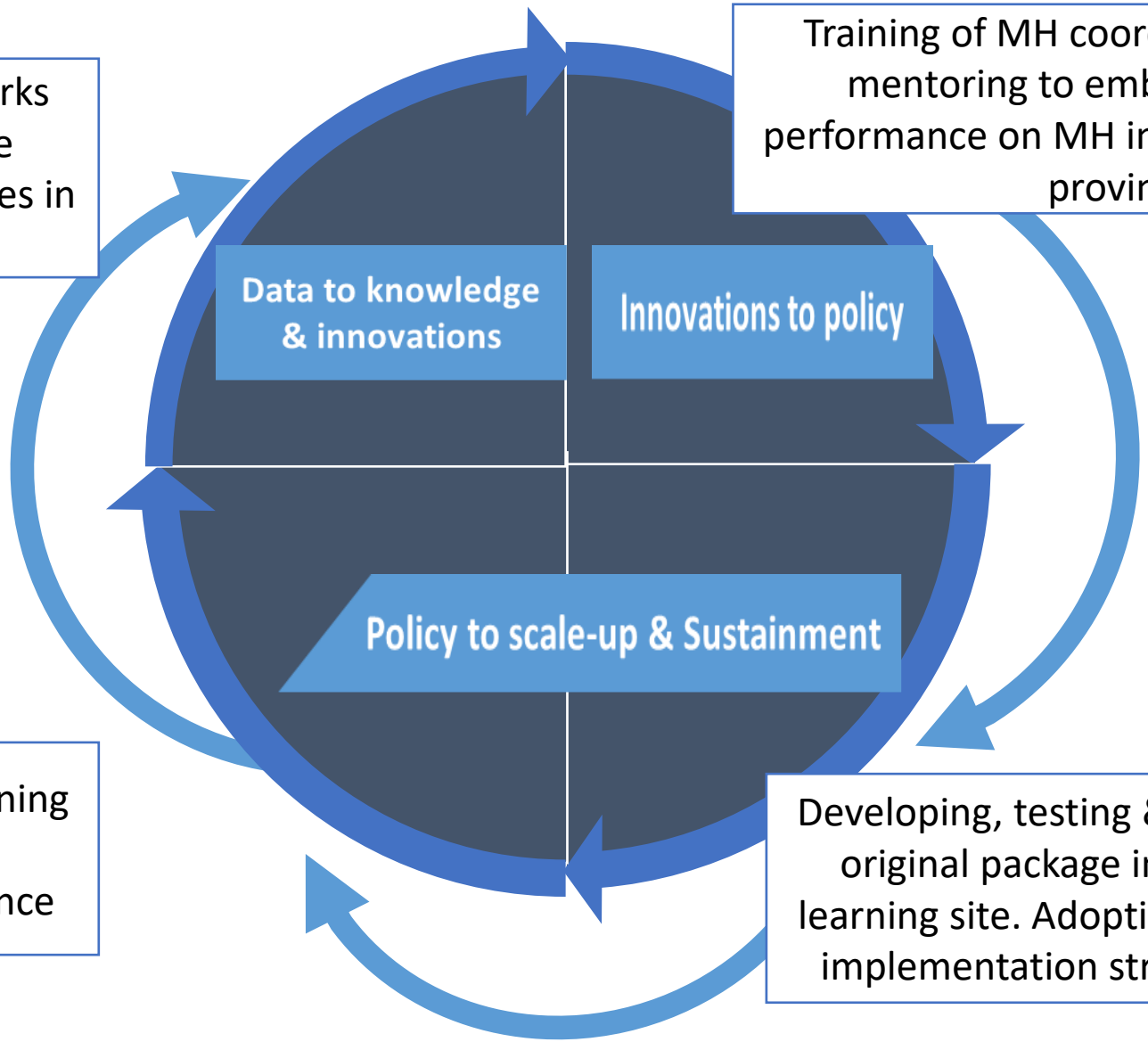
Strengthening Integrated Depression Services

Provider	Intervention	First Stage Intervention	Second Stage Strengthened Intervention
Provincial, District, Facility Managers; Researchers	Promote acceptance of integrated depression care	Develop formal implementation blueprint; Orientation & educational meetings; identify champions	Update implementation blueprint; Orientation & educational meetings; identify champions; Establish learning collaboratives Revise HIV counsellor roles to auxiliary social workers
Health Promoter/ CHW	Strengthen patient mental health literacy/ counselling demand	Increase demand; develop educational materials	Increase demand; develop education materials; including digital materials; expand content to include grief, bereavement, and anxiety
Enrolled Nurse/ Professional Nurse	Screening	None	Use of validated screening tool (BMH) with SOP guidelines; Training manual developed and used for on-site training
Professional Nurse	Strengthen capacity to use DoH APC guidelines	Train the trainer strategy for educational meetings	Develop digital self-directed educational materials (APC mental health content) Online training/ audit and feedback on completion of APC training online

Learning health systems approach for promoting scale-up

Provincial learning collaborative works with district coordinators to refine implementation strategies & processes in response to bottlenecks

Training of MH coordinators in CQI & mentoring to embed & improve performance on MH indicators across the province



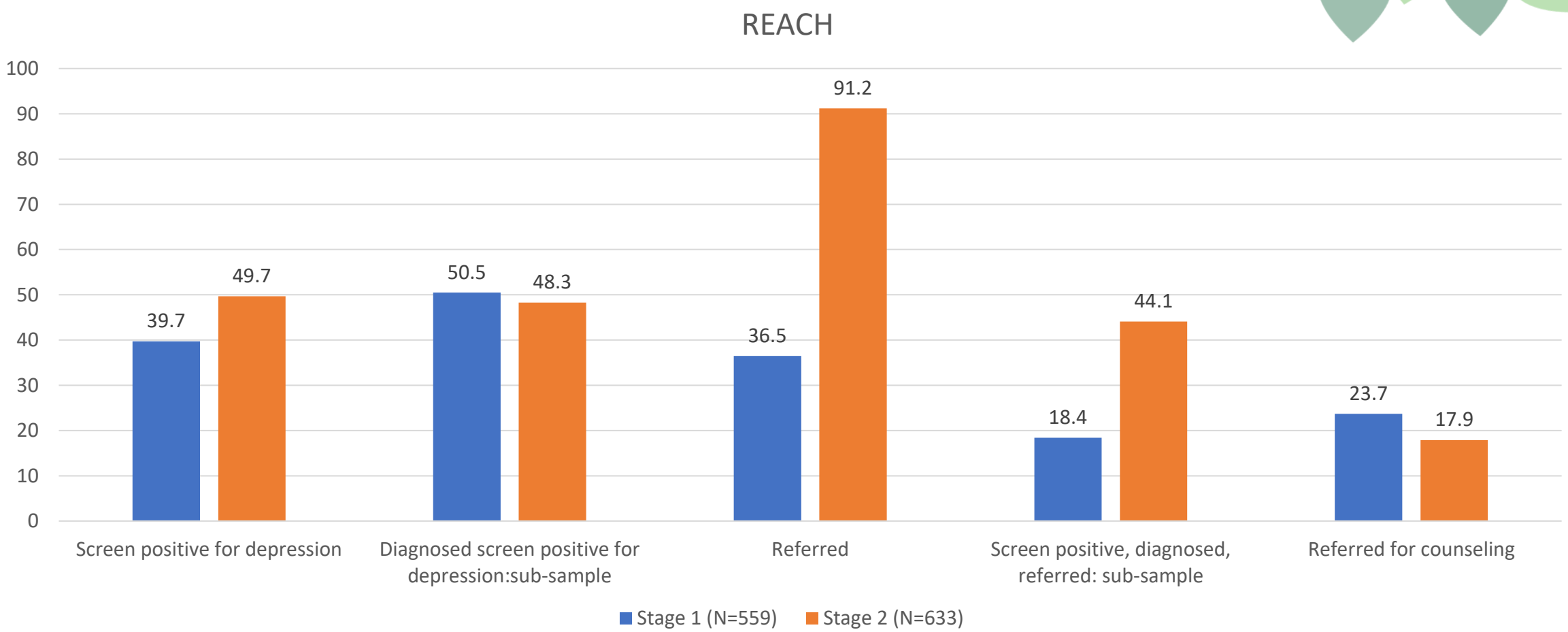
Training of district MH coordinators/training coordinators to cascade training in innovations in districts across the province

Developing, testing & strengthening the original package in one district as a learning site. Adoption of innovations & implementation strategies into policy

Reach

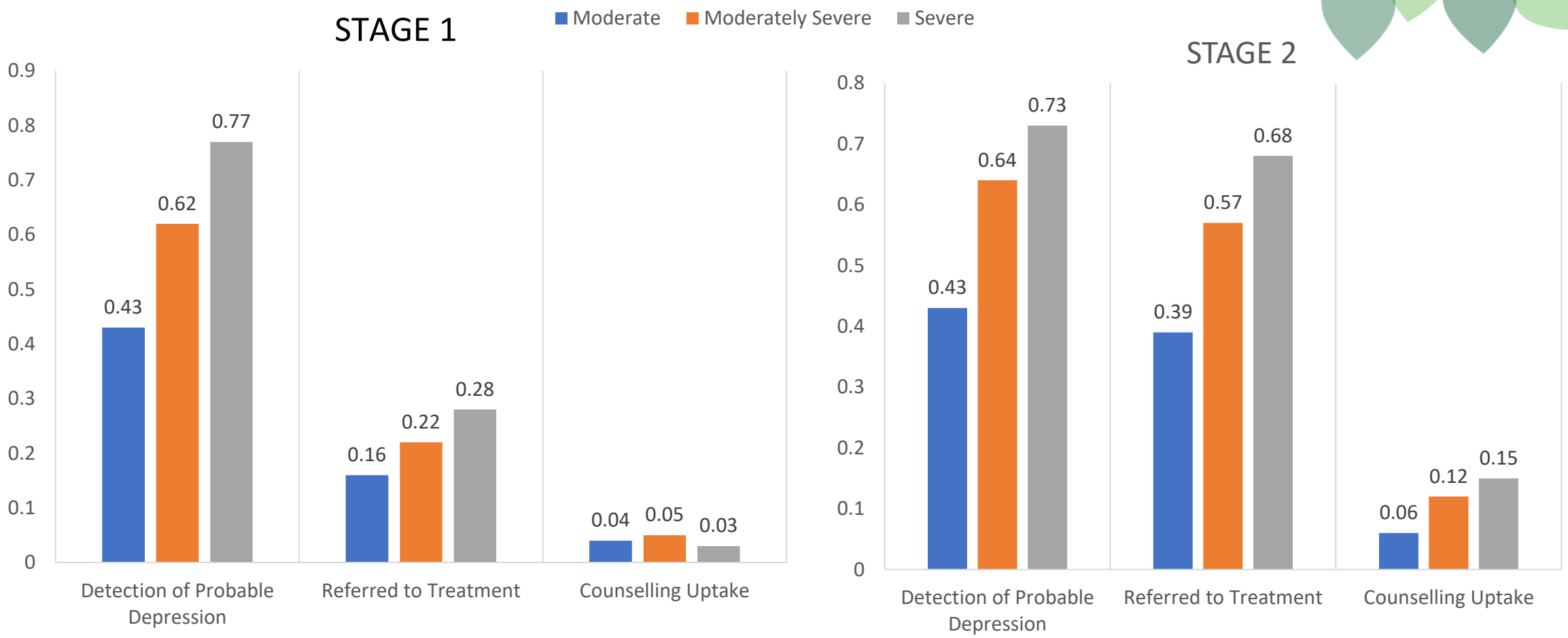
Screening, Diagnosis, Referral, Counselling

RE-AIM Results Across Study Stages (Chronic care patients)[1]



1 Petersen I, Kemp CG, Rao D, Wagenaar BH, Bachmann M, Sherr K, et al. Strengthening integrated depression services within routine primary health care using the RE-AIM framework in South Africa. PLOS Glob Public Health. 2023;3(11):e0002604.

Care cascade by symptom severity across Stages 1 and 2[1]



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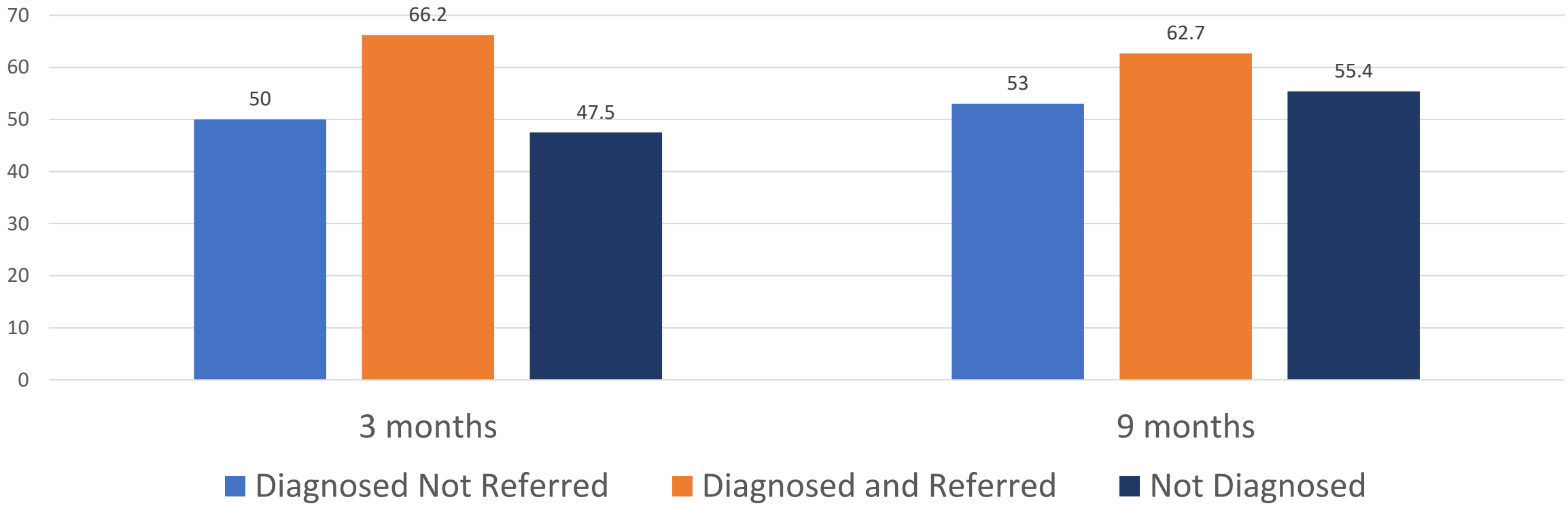
Effectiveness (real-world patient level outcomes)

Percentage having at least 50% reduction in PHQ9 scores at 3 and 9 months (Baseline N=623; 3 months N= 468; 9 months N=454)



Kathree T, Bachmann M, Bhana A, Grant M, Mntambo N, Gigaba S, et al. Management of Depression in Chronic Care Patients Using a Task-Sharing Approach in a Real-World Primary Health Care Setting in South Africa: Outcomes of a Cohort Study. Community mental health journal. 2023;59(7):1261–74.

At 3 months follow-up diagnosed and referred 2x more likely to have a 50% reduction in depressive symptoms (adjusted odds ratio 2.07, 95% CI 1.12, 3.35, P=0.03) compared to diagnosed only. At 9 months follow-up, the difference was not statistically significant.

Adoption

Adoption

Stage 1

- Referrals
  - CNPs referred on average 1.2 patients per month
  - Median: 0.5, Range: 0-11.5 over 3 months
- Characteristics of Providers
  - High referring providers more likely to have higher perceived competency

Stage 2

- Referrals
  - CNPs referred on average 2 patients per month
  - Median: 1.5, Range: 0.5 – 8.5 over 4 months
- Characteristics of Providers
  - High diagnosing and referring providers are more likely to have:
    - Received training in BMH (OR 3.75, 95% CI [1.19-11.80], $p = 0.02$)
    - Higher perceived acceptability of intervention (OR 2.57, 95% CI [1.03-6.40], $p = 0.043$)

1.Petersen I, Kemp CG, Rao D, Wagenaar BH, Bachmann M, Sherr K, et al. Strengthening integrated depression services within routine primary health care using the RE-AIM framework in South Africa. PLOS Glob Public Health. 2023;3(11):e0002604.

Implementation

Implementation

Stage 1

- 50% of cohort clinics had consistent counselor presence
- Availability of counsellors over the study period associated with a 42% (95% CI [14-69] increase in the probability of referred patients receiving at least one counselling session
- Fidelity Range: 78-98% (Average 86%)

Stage 2

- 68.4% of cohort clinics had consistent counselor presence
- Availability of counsellors over the study period associated with a greater probability of being diagnosed and referred (OR 5.9, 95% CI[1.29-27.75], p = 0.022)
- Fidelity – data not available

1.Petersen I, Kemp CG, Rao D, Wagenaar BH, Bachmann M, Sherr K, et al. Strengthening integrated depression services within routine primary health care using the RE-AIM framework in South Africa. PLOS Glob Public Health. 2023;3(11):e0002604.

Maintenance

Maintenance

Stage 1

- None

Stage 2

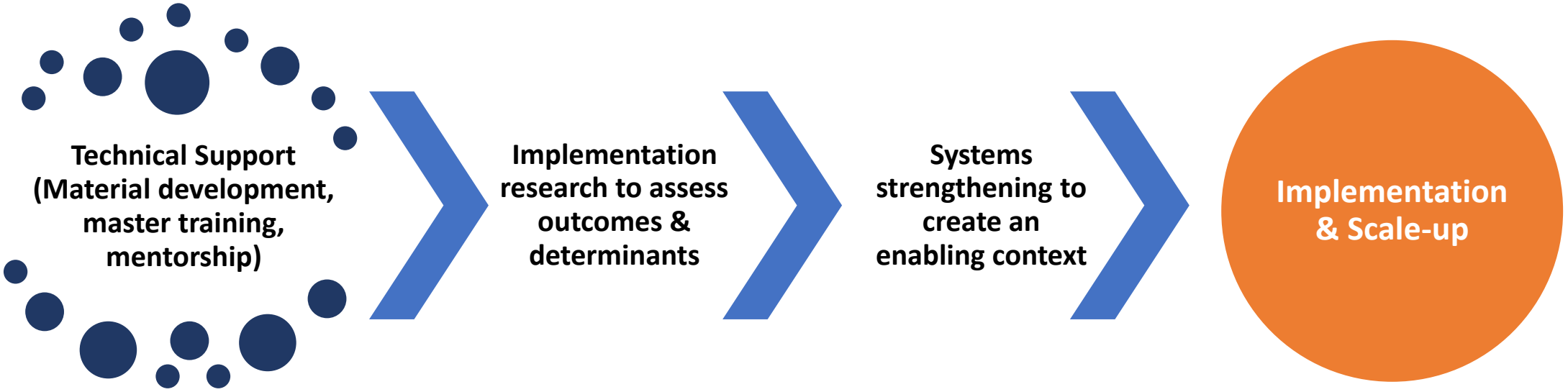
Institutionalisation of Intervention

- BMH adopted as a standardised screening tool in PHC facilities in KZN
- Psycho-educational material scaled up to all districts in KZN
- Community Mental Health and Education Detection tool (CMED) adopted for use by CHWs nationally and provincially (undergoing further trials for adolescents)

LESSONS LEARNED

3

Lesson 1: Requires multifaceted approach



Lesson 2: Meaningful Engagement

- Greater need for embedded research
- Adopt an implementation science lens that takes into account complexity (policymakers, service providers, and users)
- Meaningful engagement of all individuals and groups affected through learning health systems (service users, providers, policy makers, health service directors)
- Establish EQUITABLE learning collaboration with policymakers, service providers and users

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Sources

1. Sheikh K, Hargreaves J, Khan M, Mounier-Jack S. Implementation research in LMICs—evolution through innovation (2020). Health Policy and Planning. 35(Supplement_2):ii1–ii3.
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