Received: 8 December 2022 | Revised: 11 May 2023 | Accepted: 11 May 2023

DOI: 10.1111/epi.17647

Epilepsia®

SPECIAL REPORT

Integrated psychological care services within seizure settings: Key components and implementation factors among example services in four ILAE regions: A report by the ILAE Psychiatry Commission

Milena Gandy[1] | **Rosa Michaelis**[2] | **Jayne Acraman**[3] | **Kirsten A. Donald**[4,5] | **Michael Fitzpatrick**[6] | **W. Curt LaFrance Jr.**[7] | **Seth A. Margolis**[8,9] | **Avani C. Modi**[10] | **Markus Reuber**[11] | **Venus Tang**[12,13] | **Zoe Thayer**[6] | **Kirsten Verity**[14] | **Janelle L. Wagner**[15] | **Jo Wilmshurst**[16] | **Sarah Whittaker**[14] | **Heidi M. Munger Clary**[17]

[1]eCentreClinic, Faculty of Medicine, Health, and Human Sciences, School of Psychological Sciences, Macquarie University, Sydney, New South Wales, Australia

[2]Ruhr-Epileptology, Department of Neurology, University Hospital Knappschaftskrankenhaus Bochum, Ruhr University Bochum, Bochum, Germany

[3]Department of Neurology, Royal Hallamshire Hospital, Sheffield, UK

[4]Division of Developmental Paediatrics, Department of Paediatrics and Child Health, Red Cross War Memorial Children's Hospital, Cape Town, South Africa

[5]Neurosciences Institute, University of Cape Town, Cape Town, South Africa

[6]Department of Neurosciences, Royal Prince Alfred Hospital, Sydney, New South Wales, Australia

[7]Division of Neuropsychiatry and Behavioral Neurology, Departments of Psychiatry and Neurology, Rhode Island Hospital, Brown University, Providence, Rhode Island, USA

[8]Division of Neuropsychology, Department of Psychiatry, Rhode Island Hospital, Brown University, Providence, Rhode Island, USA

[9]Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, Rhode Island, USA

[10]Division of Behavioral Medicine and Clinical Psychology, College of Medicine, Cincinnati Children's Hospital Medical Center, University of Cincinnati, Cincinnati, Ohio, USA

[11]Academic Neurology Unit, Royal Hallamshire Hospital, University of Sheffield, Sheffield, UK

[12]Department of Clinical Psychology, Prince of Wales Hospital, Hospital Authority, Sha Tin, Hong Kong

[13]Division of Neurosurgery, Department of Surgery, Faculty of Medicine, Chinese University of Hong Kong, Ma Liu Shui, Hong Kong

[14]Paediatric Psychology and Liaison Service, Royal Hospital for Children and Young People, NHS Lothian Child and Adolescent Mental Health Service, South Edinburgh, UK

[15]College of Nursing, Medical University of South Carolina, Charleston, South Carolina, USA

[16]Department of Paediatric Neurology, Neuroscience Institute, Red Cross War Memorial Children's Hospital, University of Cape Town, Cape Town, South Africa

[17]Department of Neurology, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA

Correspondence
Milena Gandy, Australian Hearing Hub, School of Psychological Sciences, Macquarie University, Sydney, NSW 2109, Australia.
Email: milena.gandy@mq.edu.au

Abstract

Mental health comorbidities are prevalent and problematic in patients with seizures but often suboptimally managed. To address common gaps in care, the Integrated Mental Health Care Pathways Task Force of the International League Against Epilepsy (ILAE) Psychiatry Commission was tasked with providing education and guidance on the integration of mental health management (e.g., screening, referral, treatment) into routine seizure care. This report aims to describe a variety of established services in this area, with a specific focus on psychological care models. Services were identified by members of the ILAE Psychiatry Commission and authors of psychological intervention trials in epilepsy. A total of eight services met inclusion criteria and agreed to be showcased. They include three pediatric and five adult services located across four distinct ILAE regions (Europe, North America, Africa, Asia Oceania). The report describes the core operations, known outcomes, and implementation factors (i.e., barriers and facilitators) of these services. The report concludes with a set of practical tips for building successful psychological care services within seizure settings, including the importance of having local champions, clearly defining the scope of the service, and establishing sustainable funding models. The breadth of exemplars demonstrates how models tailored to the local environment and resources can be implemented. This report is an initial step to disseminate information regarding integrated mental health care within seizure care settings. Future work is needed to systematically examine both psychological and pharmacological care models and to further establish the evidence base in this area, especially around clinical impact, and cost-effectiveness.

KEYWORDS

anxiety, depression, epilepsy, mental health, psychologist, psychotherapy

1 | INTRODUCTION

There is substantial evidence that mental health comorbidities are common and problematic in people with epilepsy (PWE).[1-3] There is an estimated two- to fivefold increased risk for developing depression and/or anxiety disorders, and one in three PWE has a lifetime mental health diagnosis.[3] This is critical, as mental health comorbidities affect the quality of life, medical management, self-management, morbidity, and prognosis of epilepsy, even when symptoms are mild.[4-12] Furthermore, mental health comorbidities are associated with higher rates of inpatient and outpatient health care utilization (e.g., hospitalizations).[13,14] Similarly, people with functional/dissociative seizures (FDS; or psychogenic nonepileptic seizures) are often first diagnosed in seizure clinic settings, may have coexisting epilepsy, and are at increased risk for common and burdensome comorbidities including depression and anxiety.[15]

Evidence-based recommendations for mental health care in epilepsy have been published by the International League Against Epilepsy (ILAE).[16-19] In general, they advocate an integrated, multidisciplinary team approach, in which systematic screening procedures and pharmacological and psychological care are considered.[16,17,19] These recommendations are consistent with integrated mental/behavioral health, or collaborative, care models advocated for within primary health care settings and the comprehensive management of patients with various chronic health conditions (e.g., diabetes, asthma, chronic pain, cancer).[20-23]

Key points

- Detailed description is given of eight established integrated psychological care models for people with seizures from around the world.
- Core operations (screening, referral, treatment), implementation (barriers, facilitators), evaluation, and funding details are provided.
- Practical tips for integrating psychological services into seizure care settings are provided.

Psychological care models, which include access to psychological assessments and/or management via psychological interventions, are commonly recommended for anxiety and depression, and broader quality of life (QOL) issues among people with seizures.[3] For instance, a recent Cochrane Review found moderate-certainty evidence that psychological interventions can improve QOL outcomes in PWE. Although the Cochrane Review suggested that psychological interventions can be effective, there is also evidence that these interventions are not available to most PWE.[24] Even clinicians and service providers keen to offer such treatments are often uncertain how best to implement services in view of large patient volume and limited funding.

Additionally, there is a significant translational gap when it comes to implementation of mental health care within routine seizure care settings. Crucially, many PWE continue to report high rates of unmet mental health care needs and struggle to access psychological care.[25,26] Highlighting this, a recent ILAE survey of epilepsy health professionals ($N=445$), found that >50% were underresourced to manage mental health concerns of their patients.[24] Identified barriers included inadequate resources to assess and treat depression and anxiety (including lack of standardized procedures), and a lack of integration of mental health professionals in epilepsy care teams.[24,27] Not surprisingly, many neurologists identify patient mental health management as a critical training need.[28]

In response to these clinical care gaps and providers' educational and training needs, the Integrated Mental Health Care Pathways Task Force of the ILAE Psychiatry Commission was tasked with providing resources to support the integration of mental health care into routine epilepsy care. Consistent with recent targets outlined by the Intersectional Global Action Plan (IGAP) on Epilepsy and Other Neurological disorders[29] by addressing both physical and mental health (i.e., psychosocial) patient needs, we may further improve comprehensive seizure care and patient well-being. Thus, the aims of this report are to systematically describe integrated psychological care models from pre-established seizure clinics around the world, including their core operations, implementation factors, and outcomes. The report also aims to provide a set of guiding principles for seizure settings to assist with the establishment and maintenance of integrated psychological care services.

2 | MATERIALS AND METHODS

2.1 | Criteria for inclusion of showcased psychological care services

The included services met the following inclusion criteria: (1) primary focus on the management of common mental health comorbidities, particularly depression and anxiety; (2) either refer to or utilize a psychological care approach, defined as one that provides a psychological assessment and or/management via psychological interventions; (3) location within a specific established seizure care setting; (4) permission to publicly share information about the service. Services that only provided the following were excluded: (1) mental health medication management, (2) neuropsychology with a primary focus on assessing cognitive function, (3) care provision exclusively for patients with FDS and not epilepsy, (4) psychological assessment/management restricted to epilepsy surgery candidates, and (5) broad self-management or educational programs without a primary focus on managing mental health.

2.2 | Identification of psychological care services

First, an ad hoc group of members of the ILAE Psychiatry Commission and other known leaders of integrated psychological care models were invited. Second, in March 2022, a call was published in the online ILAE newsletter to collect information about established integrated psychological care services (i.e., pathways for treating depression and/or anxiety) from the ILAE community. Those willing to share details about how their service operates were invited to contact M.G. Third, all authors of psychological intervention trials included in the recent Cochrane Review of psychological treatments for epilepsy[19,30] were contacted with a query about whether programs had been implemented, followed by inquiries to determine inclusion.

2.3 | Standardized description of psychological care services

The following information was collected: (1) methods for identifying patients; (2) service description; (3) service implementation, including barriers and facilitators; (4) evaluation of the service; and (5) financial/funding models.

3 | RESULTS

Figure 1 summarizes the inclusion of the final eight integrated psychological care services. These included five adult and three pediatric services located within tertiary hospitals across seven countries. Figure 2 summarizes the setting of services and provides an abbreviation for their references utilized throughout the article.

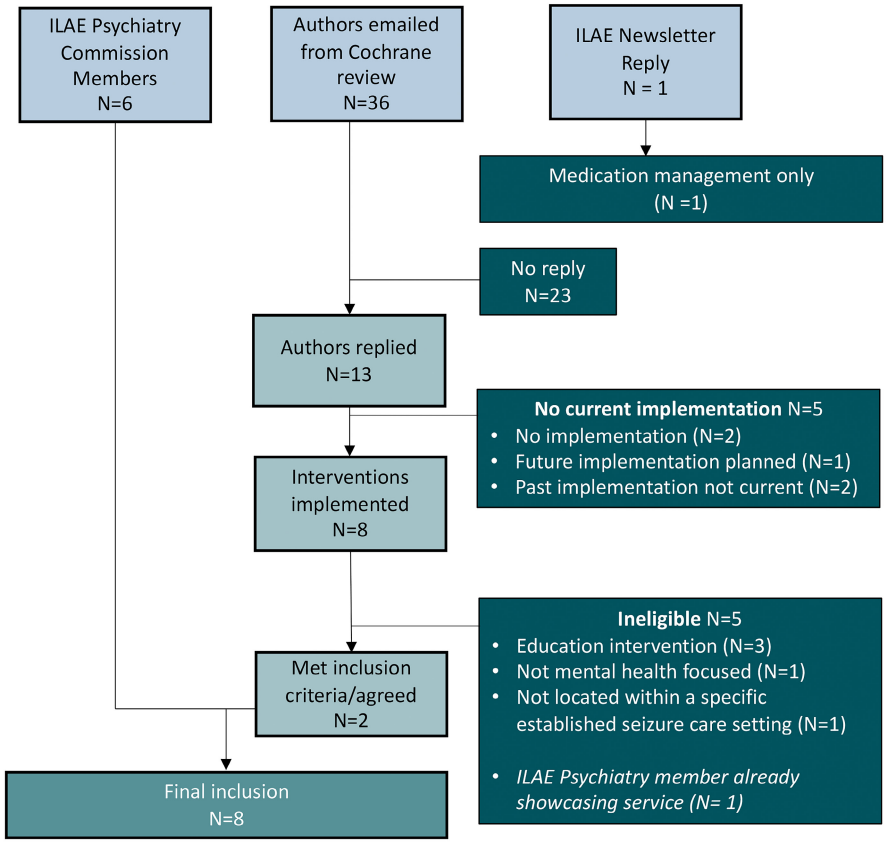

FIGURE 1 Inclusion of services flow diagram. ILAE, International League Against Epilepsy.

Service Abbreviation	Hospital Setting	Country
ADULT		
RHH/EN	The Royal Hallamshire Hospital	United Kingdom (England)
RIH/USA	The Rhode Island Hospital (Brown University)	United States of America
PWH/HK	The Prince of Wales Hospital	Hong Kong
RPAH/AU	The Royal Prince Alfred Hospital	Australia
UKB/DE	The University Hospital Knappschaftskrankenhaus Bochum	Germany
PAEDIATRIC		
RCH/SA	Red Cross War Memorial Children's Hospital	South Africa
CCHMC/USA	Cincinnati Children's Hospital Medical Center	United States of America
RHCYP/SC	The Royal Hospital for Children & Young People	United Kingdom (Scotland)

FIGURE 2 Glossary of integrated psychological care services.

3.1 | Summary of the eight showcased integrated psychological care services

Comprehensive details of each service are provided in Tables 1–4, and the core operations of each service introduced briefly below.

3.1.1 | Adult

Royal Hallamshire Hospital/England (RHH/EN)

The Sheffield Neurology Psychotherapy Service was established in 2005 to serve outpatients with seizures from the Neurology Department of the RHH. The service provides access to comprehensive psychological assessment and interventions.

Rhode Island Hospital/United States (RIH/USA)

In 2005, a collaboration between the RIH Divisions of Epilepsy, Neuropsychiatry & Behavioral Neurology, and Neuropsychology resulted in the development of mental health care pathways for patients with seizures. A neuropsychiatry pathway involves access to specialized neuropsychiatric assessment and treatment. A neuropsychology pathway integrates mental health assessments alongside neuropsychological testing. This

TABLE 1 Core description of seizure care setting and integrated psychological care service.

	Seizure care setting			Average patients served annually	Integrated psychology care service	
	Service	ILAE region	Hospital type		Patient type	Current staffing
Adult						
1	RHH/EN	Europe	Tertiary neurology dept in teaching hospital	~7000 PWE and ~1000 patients with FDS	Outpatients only	8 part-time therapists with varied qualifications (psychology, social work); all with trauma training[31]
2	RIH/USA	North America	Tertiary neurology & psychiatry dept in teaching hospital	~4000 (90% epilepsy, 10% FDS)	Inpatients & outpatients	1 dually boarded neurologist–psychiatrist 2 neuropsychologists with training in health psychology with additional support provided by trainee staff (1 resident, 2 postdoctoral fellows)
3	PWH/HK	Asia and Oceania	Acute regional (public)/university teaching hospital	~600–700 active epilepsy cases	Inpatients & outpatients	20% load of 1 clinical psychologist with training in neuropsychology
4	RPAH/AU	Asia and Oceania	Tertiary epilepsy center in neurology hospital affiliated with university	~2200 (inpatients/ outpatients)	Inpatients & outpatients	1 part-time clinical psychologist (16 h per week)
5	UKB/DE	Europe	Tertiary epilepsy center within university hospital neurology dept	~1100 (inpatients/ outpatients)	Inpatients only	2 part-time psychotherapists
Pediatric						
6	RCH/SA	Africa	Tertiary children's hospital	~1800 (inpatients/ outpatients)	Inpatients & outpatients	All epilepsy clinic staff, 2.5 child neurologists, 2 pediatricians, 2 child psychiatrists, 2 psychologists, 2 neuropsychologists and child psychiatry fellow, have dedicated workload attributed to the integrated psychological care service and are all MH trained
7	CCHMC/USA	North America	Tertiary pediatric hospital with a CEC	~3500 (inpatients/ outpatients)	Outpatients only	3 full-time clinical psychologists, 3 psychology interns, 1 postdoctoral fellow
8	RHCYP/SC	Europe	Tertiary pediatric hospital	~400	Outpatients only	1 part-time clinical associate psychologist (8 h per week) assisted by a trainee psychologist & neuropsychologist; PAVES-related time is allocated to the workload of 3 consultant neurologists in the epilepsy clinic

Abbreviations: CCHMC/USA, Cincinnati Children's Hospital Medical Center/USA; CEC, comprehensive epilepsy center; dept, department; FDS, functional dissociative seizures; ILAE, International League Against Epilepsy; MH, mental health; PAVES, Psychology Adding Value Epilepsy Screening; PWE, people with epilepsy; PWH/HK, Prince of Wales Hospital/Hong Kong; RCH/SA, Red Cross War Memorial Children's Hospital/South Africa; RHCYP/SC, Royal Hospital for Children & Young People/Scotland; RHH/EN, Royal Hallamshire Hospital/England; RIH/USA, Rhode Island Hospital/USA; RPAH/AU, Royal Prince Alfred Hospital/Australia; UKB/DE, University Hospital Knappschaftskrankenhaus Bochum/Germany.

TABLE 2 Identification of patients for the psychological care service.

	Service	Identification type	Primary referral source	Automatically allocated	Patients ineligible for service and/or subsequent management	Wait-time from allocation
Adult						
1	RHH/EN	Practitioner referral	Neurologists, neuropsychologists, epilepsy nurse specialists	None	• Live outside local catchment or not wanting therapy • Significant addiction or suicidality refereed to community support	~2 months for assessment ~18 months for treatment
2	RIH/USA	Practitioner referral	Epileptologists at RIH & around the country	None	• Acutely suicidal patients referred to ED • Acutely distressed but not threshold for inpatient admission triaged to intensive outpatient care via a direct line to a partial hospital program • Those uninterested in MH service supported by onsite epilepsy foundation staff	~4 months for neuropsychology assessment ~10.5 months for neuropsychiatry ~Additional 2–4 weeks for treatment referral appointment
3	PWH/HK	Practitioner referral	Epileptologists, neurologists, neurosurgeons	Presurgical patients	• Live outside local catchment • Patients with acute psychiatric disorders or suicidal risk referred to psychiatric clinic	~2 months for assessment & treatment
4	RPAH/AU	Practitioner referral	Epileptologists, neurologists, nurse, neuropsychologist	None	• Language barriers, severe cognitive impairment, alcohol/drug dependence, current external MH clinicians • Acute psychiatric disorders, risk of harm to self or others, referred to specialist care • Patients with FDS referred to psychiatric support	~6 weeks for assessment and treatment
5	UKB/DE	Routine screening	Elevated symptom scores following routine depression & anxiety screening	FDS patients	• Language barriers & severe cognitive impairment, or impaired consciousness (e.g., delirium) are not screened • Acute psychiatric disorders (e.g., psychosis) referred to psychiatric clinic	Assessment management following day after screening
Pediatric						
6	RCH/SA	Practitioner referral; MDT case review	MDT members, i.e., child neurologist, pediatrician, medical officers	None	• Service only has capacity to take 5–10 patients for intensive support	~4 months for assessment/ management
7	CCHMC/USA	Universal & practitioner referral	Automatic referrals or from MDT team member, i.e., neurologist, nurses	All patients	• Decline service (e.g., child is doing well or if insurance/costs prohibit service access)	Same day; occurs during routine appointment
8	RHCYP/SC	Routine screening & practitioner referral	Electronic screening of select patients or direct referral from MDT member	None	• No formal diagnosis of epilepsy &/or <5 years • External MH or specialist support (e.g., for learning disability) not screened to prevent support duplication	Same day for assessment ~2.5 months for onsite treatment options

Abbreviations: CCHMC/USA, Cincinnati Children's Hospital Medical Center/USA; ED, emergency department; FDS, functional dissociative seizures; MDT, multidisciplinary team; MH, mental health; PWH/HK, Prince of Wales Hospital/Hong Kong; RCH/SA, Red Cross War Memorial Children's Hospital/South Africa; RHCYP/SC, Royal Hospital for Children & Young People/Scotland; RHH/EN, Royal Hallamshire Hospital/England; RIH/USA, Rhode Island Hospital/USA; RPAH/AU, Royal Prince Alfred Hospital/Australia; UKB/DE, University Hospital Knappschaftskrankenhaus Bochum/Germany.

TABLE 3 Core components of integrated psychological care services.

	Service	Patients referred externally following assessment	Onsite psychoeducation and psychotherapy	Case review/follow-up
Adult				
1	RHH/EN	• Only for ineligible patients (see Table 2)	• Individual outpatient psychotherapy, up to a maximum of 20 (50 min) sessions (face-to-face, video link, or phone) • Treatment modality depends on therapist orientation such as CBT, ACT,[32] integrative, & psychodynamic[33]	• Patients readministered symptom measures posttreatment • Attend a neurology follow-up appointment at discharge • Cases discussed at MDT meetings
2	RIH/USA	• Outpatient clinical psychologist when requested or MH presentation is clear • Telehealth programs (CDC MEW Network)	• Offered via research programs • Neuropsychiatrist or psychologist provides NBT[34] limited to 12 sessions • Neuropsychologist offers access to face-to-face psychoeducation & 4–8 weeks of self-management interventions via digital research programs aimed at promoting psychological functioning & reducing stigma/improving QOL[35,36]	• Patients & carers seen face-to-face to discuss assessment results & MH resources available to them to form treatment plan • Reports sent to referrers • Complex cases discussed in MDT CEP team conferences
3	PWH/HK	• Patients whose needs (e.g., occupational training) are outside service scope referred to community care	• Written psychoeducational materials provided • 3–6 (50 min) individual face-to-face sessions with clinical psychologist offered • Primary treatment includes psychoeducation, mindfulness, relaxation training, & CBT	• All clinical information typed up in clinical management system accessible by the referrer • Routine case review only for surgical candidates
4	RPAH/AU	• Complex presentations referred to specialized psychology/psychiatry (e.g., FDS, trauma)	• Patients offered short (1–3) to medium (3–20) term 50-min individual sessions (telehealth or face-to-face) with clinical psychologist • Primary treatment includes stress management, psychoeducation, CBT, emotion regulation	• Letter to referrer with treatment plan, progress, & outcomes • Patient discussed via MDT meetings
5	UKB/DE	• Provided information about how to access external MH services (e.g., websites, service phone numbers) • Free FDS psychoeducational brochures provided • Those interested in comprehensive self-help provided link to purchase privately[37]	• For FDS patients, a personalized model of FDS & resulting treatment strategies is discussed in 1 session with psychotherapist • Motivational interviewing used to increase treatment motivation on discharge • Up to 2 sessions of resource-oriented counseling to manage mental health/adjustment issues in epilepsy	• MDT case review • Consent to contact patients through email &/or phone 1, 3, 6, 12 month(s) after discharge to inquire about symptoms & adherence to treatment plan
Pediatric				
6	RCH/SA	• Patients requiring ongoing care referred to RCH CAMHS • Families referred to dept of education, social welfare, & Epilepsy South Africa for support	• For patients most in need (e.g., severe depression) child psychologists provide individualized CBT & family therapy (~6 sessions over year); with consent, all staff engaged with care	• Weekly in-house meetings to discuss progress of all CWE as well as those comanaged with child psychiatry service

(Continues)

TABLE 3 Continued

	Service	Patients referred externally following assessment	Onsite psychoeducation and psychotherapy	Case review/follow-up
7	CCHMC/USA	• High-risk patients too complex for management in clinic visits referred to outpatient therapy or community agencies close to the patient's residence • Those with significant learning/academic issues referred for further evaluation	• Low-risk patients (i.e., mild or no MH) seen 6 months during epilepsy clinic visits & provided psychoeducation & basic skills for managing adjustment, ASM adherence, & other issues (e.g., sleep, stress)[38] for prevention • Subclinical/mild patients (i.e., subclinical, or mild internalizing or externalizing symptoms or learning difficulties) seen every 3 months, receive strategies to address symptoms, &/or aid schooling	• Patients readministered measures to monitor progress • Follow-up assessments every 3–6 months based on patient need • Psychosocial progress notes entered in electronic medical record & discussed at MDT clinic
8	RHCYP/SC	• Neurologist signposts families to community resources using a directory based on needs, with high-risk families directly referred, such as parenting interventions, self-management, youth groups, and anxiety management • Freely available, age-appropriate problem-specific self-help material (e.g., dealing with behavioral/cognitive difficulties) sent to families • Following tirage with psychologist, referrals to CAMHS for neurodevelopmental issues or at-risk patients	• High-need patients aged between 12 and 18 years offered a psychosocial group support program of 6 weekly 2-h sessions covering psychoeducation, CBT, & mindfulness[39] • Moderate–high-need families can be offered a 2-session parenting workshops (2 × 2-h group workshops) to increase understanding of the impact of epilepsy, increasing support and well-being; separate primary and secondary school age workshops	• MDT debriefs about patients following routine visits • Letter sent to family with treatment plan • Schools can also be sent information & tips for managing issues

Abbreviations: ACT, acceptance and commitment therapy; ASM, antiseizure medication; CAMHS, Child and Adolescent Mental Health Service; CBT, cognitive behavior therapy; CCHMC/USA, Cincinnati Children's Hospital Medical Center/USA; CDC, Centers for Disease Control and Prevention; CEP, comprehensive epilepsy program; CWE, children with epilepsy; dept, department; FDS, functional dissociative seizures; MDT, multidisciplinary team; MEW, Managing Epilepsy Well; MH, mental health; NBT, neurobehavioral therapy; PWH/HK, Prince of Wales Hospital/Hong Kong; QOL, quality of life; RCH/SA, Red Cross War Memorial Children's Hospital/South Africa; RHCYP/SC, Royal Hospital for Children & Young People/Scotland; RHH/EN, Royal Hallamshire Hospital/England; RIH/USA, Rhode Island Hospital/USA; RPAH/AU, Royal Prince Alfred Hospital/Australia; UKB/DE, University Hospital Knappschaftskrankenhaus Bochum/Germany.

TABLE 4 Implementation considerations of the integrated psychological care service.

			Funding models		Formal service evaluation					
	Service	Uptake per year[a]	Costs to patient	Staff funding covered	Clinical efficacy	Cost-effective	Top 2 barriers to establishment	Top 2 facilitators of establishment	Top 2 barriers to maintenance	Top 2 facilitators of maintenance
Adult										
1	RHH/EN	$n \approx 300$ (90% FDS)	None; covered via NHS	Via billing for service via NHS	Published evidence[32,40,41,42]	Published evidence[42]	1. Absence of integration guiding models 2. Securing funding	1. Local champions overcame funding challenges 2. Advocated for growth to meet demand	1. Long waitlists may increase MH & FDS complexity 2. Significant trauma of patients requires specialist care	1. High demand recognized by referrers & funders 2. Gaps in psychotherapy provision for seizure patients elsewhere
2	RIH/USA	≈25%	Via state or commercial insurance	Via dept of psychiatry top up funding & via grant support	Ongoing collection	None	1. Variable funding for MH epilepsy research 2. Reduced MH insurance reimbursements	1. Unique cross-funding, between neuropsychiatry & psychology 2. Integration of MH with neuropsychology	1. Limited MH staff trained in epilepsy/ FDS 2. Patients need to proactively follow MH treatment plan & uncertainty whether they do	1. Strong need for service by referrers & patients 2. Remote interventions; CDC MEW Network
3	PWH/HK	$n \approx 30$	Fees subsidized by public health; waived for disadvantage	Via public sector	None	None	1. No routine MH screening 2. MH in PWE not recognized &/or stigmatized	1. Awareness of importance of managing MH in PWE 2. Budget for psychological services for PWE	1. Orientating health providers to integrated care model 2. Depends on referrers' ability to detect MH difficulties	1. Dedicated staff 2. Integration of MH with neuropsychology
4	RPAH/ AU	$n \approx 80$–100	None	Via local health district budget	Ongoing collection	Ongoing collection	1. Limited funding 2. Limited staff (psychologist) capacity	1. Service research highlighted need[43,44] 2. Epilepsy team value clinical psychology	1. Risks clinician burnout due to high demand 2. MH complexity can extend beyond scope of service	1. High demand 2. Support from MDT
5	UKB/DE	68%[45]	None	Via dept of neurology; ≈50% of staff funded by research grant	Treatment plan adherence (>95%)[45]	Ongoing collection	1. MH staff not included in neurology staff plan 2. Billing for MH care restricted; limits funding	1. Local champions assist funding, staffing, & implementation 2. Free screening & standardized interviews	1. Lack resources to meet MH needs of people with cognitive/language barriers 2. FDS patients often ambivalent about psychological care	1. Scientific output facilitates research grants 2. Master level psychology students assist staff
Pediatric										
6	RCH/SA	≈5%	Children <6 years old free; older children means tested	Via public sector	None	None	1. No routine screening 2. Limited capacity restricts access to small numbers	1. Limited alternative MH services in SA 2. University training internships assist staffing	1. High rates of MH problems in caregivers, especially low SES 2. COVID-19 stress	1. MDT approach 2. Partnership with neuropsychology
7	CCHMC/ USA	>75%	Pay via billing insurance; both public & private	Patient billing covers staff salary	Published evidence[12,46,47]	Published evidence[46]	1. Medical team reluctance; lack of psychiatric knowledge 2. Mismatched psychiatric & medical productivity goals	1. Local champions 2. Hospital values MDT care	1. Orienting new epilepsy providers & families to integrated care takes time 2. Navigating billing changes	1. Cost-effective[46] 2. Service valued by families, patients, & providers[48]

TABLE 4 Continued

	Service	Uptake per year[a]	Funding models		Formal service evaluation		Top 2 barriers to establishment	Top 2 facilitators of establishment	Top 2 barriers to maintenance	Top 2 facilitators of maintenance
			Costs to patient	Staff funding covered	Clinical efficacy	Cost-effective				
8	RHCYP/SC	≈65%	None; covered via NHS	Via CAMHS	Pilot published evidence[49]	Published evidence[50]	1. Lack of time in neurologist appointment for MH care 2. Limited psychology staffing	1. Initial charity & community funding 2. SIGN guidelines for integrated MH care in epilepsy services	1. Poor hospital internet prevents online SDQ completion 2. Families face practical barriers attending group sessions	1. PAVES risk reports interpretable by neurologist 2. Many external referral options in capital city

Abbreviations: CAMHS, Child and Adolescent Mental Health Service; CCHMC/USA, Cincinnati Children's Hospital Medical Center/USA; CDC, Centers for Disease Control and Prevention; dept, department; FDS, Functional Dissociative Seizures; MDT, multidisciplinary team; MEW, Managing Epilepsy Well; MH, Mental Health; NHS, National Health Service; PAVES, Psychology Adding Value Epilepsy Screening; PWE, people with epilepsy; PWH/HK, Prince of Wales Hospital/Hong Kong; RCH/SA, Red Cross War Memorial Children's Hospital/South Africa; RHCYP/SC, Royal Hospital for Children & Young People/Scotland; RHH/EN, Royal Hallamshire Hospital/England; RIH/USA, Rhode Island Hospital/USA; RPAH/AU, Royal Prince Alfred Hospital/Australia; SDQ, Strengths and Difficulties Questionnaire; SES, socioeconomic status; SIGN, Scottish Intercollegiate Guidelines Network; UKB/DE, University Hospital Knappschaftskrankenhaus Bochum/Germany.

[a]*n* individuals or % of patients seen in the service.

service primarily refers patients for external mental health support with some access to psychological interventions via research programs.

Prince of Wales Hospital/Hong Kong (PWH/HK)

In 2008, the Neuropsychological Clinic at the PWH in HK extended neuropsychological services to also include mental health care. It primarily provides assessment, psychoeducation, and some access to low-intensity psychological intervention.

Royal Prince Alfred Hospital/Australia (RPAH/AU)

In 2019, an Epilepsy Clinical Psychology Service was established at the RPAH to provide access to comprehensive assessment and on-site short (1–3) to medium (3–20) term sessions of psychological intervention.

University Hospital Knappschaftskrankenhaus Bochum/Germany (UKB/DE)

In 2020, the inpatient seizure service at the UKB adopted routine mental health screening and follow-up with the psychotherapy team. This service primarily includes mental health assessment with referrals to external services, with access to some low-intensity psychoeducationally based on-site treatments.

3.1.2 | Pediatric

Red Cross War Memorial Children's Hospital/South Africa (RCH/SA)

In 2006, the RCH in SA established a multidisciplinary psychiatry/psychology service reserved for a select number of children with complex mental health or behavioral needs who cannot access support elsewhere. This includes access to on-site cognitive behavioral treatment (CBT) and family therapy sessions.

Cincinnati Children's Hospital Medical Center/United States (CCHMC/USA)

In 2011, the Interdisciplinary Epilepsy Psychosocial Service was established at the CCHMC to proactively address mental health and behavioral concerns of patients during routine clinical visits. It is a universal service, whereby psychological screening and care are offered to all patients,[38] including during the routine epilepsy visit, as well as outpatient referrals for ongoing treatment and educational and neuropsychological testing referrals.

Royal Hospital for Children & Young People/Scotland (RHCYP/SC)

In 2017, the RHCYP established a comprehensive screening and intervention triaging pathway known as

Psychology Adding Value Epilepsy Screening (PAVES). Patients are screened for mental health and behavioral difficulties and referred to appropriate external support services and resources. High-risk patients also have the option of accessing an on-site adolescent psychosocial support group and parenting workshops.

3.2 | Procedures for identifying and allocating patients for the psychological care service

The methods utilized to identify patients for the service, including ineligibility criteria, are outlined in Table 2 and Table S1.

3.2.1 | Adult

All adult services were reserved for select patients only. Only one service, the UKB/DE, utilized routine standardized screening to identify patients. In this service, all seizure inpatients are given measures for depression and anxiety (Table S1). Those scoring above clinical cutoffs, and all FDS patients regardless of scores, are allocated to members of the psychotherapy team to arrange further assessment.[45]

All other adult services were allocated patients directly from concerned practitioners' referrals, usually in relation to concerns about depression, anxiety, posttraumatic distress, and poor adjustment to seizures/epilepsy. The RHH/EN service and the neuropsychiatry pathway at the RIH/USA primarily serve FDS or mixed epilepsy/FDS patient presentations. The remaining adult services primarily serve PWE.

3.2.2 | Pediatric

The CCHMC/USA is the only universal service whereby all patients are automatically allocated to psychological screening/care.[38] All new pediatric patients and their families are seen by a licensed psychologist or trainee specializing in pediatric epilepsy 1 month following diagnosis, and for ongoing assessment and care at least twice annually, with additional visits as clinically needed during quarterly epilepsy follow-up visits. In contrast, the RHCYP/SC and the RCH/SA are reserved for "most in need" patients. For the RHCYP/SC, this was broadly defined to include all children (5–17 years old) who are in mainstream education, and not already seen by a psychologist externally. These children are screened using an electronic web-based questionnaire (approximately 400 per year). In contrast, the RCH/SA only has capacity to service between five and 10 high-need patients each year. These patients are identified by epilepsy practitioners and members of the multidisciplinary care team.

All three pediatric services had procedures for concerned practitioners to allocate patients, usually following multidisciplinary case reviews. Common referral reasons included anxiety, mood concerns, low confidence, and behavioral issues.

3.3 | Procedures for psychological assessment within the psychological service

Table S1 outlines detailed procedures used for assessment.

3.3.1 | Adult

The RHH/EN was the only service to utilize an intake screening procedure following practitioner referral and prior to official allocation into the psychological care service. Intake required people to return standardized symptom measures (Table S1) and undertake a 50-min screening assessment to assess suitability for outpatient psychotherapy.

Once allocated, all five adult services arranged patients to undergo a formal mental health assessment performed by a specialist staff member, with all services having access to a psychologist or psychotherapist. The RIH/USA and PWH/HK integrated mental health assessment with neuropsychological testing of cognitive functioning. The RIH/USA also had unique access to a dually boarded neurologist/psychiatrist who performed comprehensive neuropsychiatric evaluation, with a psychological focus. Among the sites, the median wait time for assessment was 2 months (range = 0 days–10.5 months).

Across all adult services, mental health assessments were designed to gather information about the patients' presenting problem(s), determine presence of mental health diagnoses, establish a case formulation, and develop a treatment plan. All services used standardized symptom measures, with two services (UKB/DE, RIH/USA) also utilizing a semistructured psychiatric diagnostic interview to aid this process.

3.3.2 | Pediatric

In two of the services, specialist mental health staff perform comprehensive mental health/behavioral assessments. At CCHMC/USA, a psychologist administers standardized measures, including the Behavioral Assessment Schedule for Children-3[51] to establish a patient's level of risk and

triage to appropriate care (Table S1), as well as specific measures of anxiety, depression, and behavior, as needed. Similarly, at the RCH/SA, a structured assessment is performed by either a psychologist or a psychiatrist.

In contrast, the RHCYP/SC uses a more neurology-led approach. In this service, patients attending routine epilepsy clinic appointments are directed to complete the PAVES web-based questionnaire, which includes the Strengths and Difficulties Questionnaire (SDQ), before their appointments. The SDQ scores are then calculated automatically via the PAVES website. This produces a report indicating a level of need using a traffic light metaphor, namely, red, amber, and green suggesting high, moderate, and low risk of mental health needs, based on standardized cutoff ranges.[49] The outcomes of the screening reports are emailed to a shared inbox of the epilepsy clinic neurologists and psychology team. Neurologists then use these reports to raise topics around mental health/behavioral difficulties, within routine clinical visits.[49]

3.4 | Procedures for referrals to external services

Table 3 outlines procedures for referring patient to external services following assessment.

3.4.1 | Adult

The primary purpose of RIH/USA and UKB/DE services is to facilitate referrals to appropriate external supports. The RIH/USA has a direct referral pathway to a specialized outpatient clinical psychologist and facilitates referrals to telehealth self-management programs available from the CDC Managing Epilepsy Well Network, which provide access to evidence-based programs to improve everyday functioning and QOL in PWE.[52,53] Similarly, the UKB/DE provides inpatients with information for accessing external mental health services once they are discharged. This is facilitated by providing links to websites with lists of regional psychotherapists and service phone numbers. Those who are interested in more in-depth self-help materials are also provided website links for how to purchase these materials privately.[37,54]

The remaining three adult services only refer patients to external services when they are ineligible for on-site psychotherapy (Table 2).

3.4.2 | Pediatric

The RHCYP/SC signposts most patients to high-quality voluntary services in the community by providing families a custom community resource directory, while also providing self-help materials for managing symptoms.[49] Similarly, the RCH/SA refers patients to external supports like Epilepsy South Africa. In contrast, the CCHMC/USA only refers patients outside of their immediate service area for outpatient therapy services, so services can be provided closer to where families live. They also facilitate support via the local epilepsy foundation, Epilepsy Alliance of Ohio.

3.5 | Key components of psychological interventions offered by psychological services

Table 3 describes the core components of psychological interventions offered by each service.

3.5.1 | Adult

Four of the adult services offer on-site or outpatient integrated psychological intervention via individual in-clinic and/or telehealth sessions with a mental health specialist. However, the intensity of treatment, targets, and modalities offered varies. For instance, the UKB/DE only offers inpatients low-intensity psychoeducation sessions provided by a psychotherapist (1–2 sessions), primarily around understanding FDS, and resource-oriented counseling to manage mental health/adjustment issues in epilepsy.[37,55] Similarly, the PWH/HK primarily provides psychoeducation sessions and materials with access to three to six sessions of psychotherapy by a clinical psychologist. More intensive psychotherapy (average of 15 sessions) is offered at the RPAH/AU, focused on mental health management and adjustment offered via a clinical psychologist. The RHH/EN offers the most intensive outpatient psychotherapy of up to 20 sessions with one of eight dedicated psychotherapists with varying qualifications (e.g., social work, clinical psychology).

In contrast, the RIH/USA neuropsychiatry service only offers psychotherapy to select patients via research programs, and via clinical psychologist in an outpatient program using neurobehavioral therapy (NBT). This treatment commonly addresses depression, anxiety, and related psychosocial issues detracting from QOL.[34,55,56] In contrast, the RIH/USA neuropsychology pathway offers access to online psychoeducational and CBT-informed self-management.[35]

3.5.2 | Pediatric

All three pediatric services base treatment decisions on the level of patient needs. The CCHMC/USA utilizes

a risk-based approach to triage patients into three different pathways of psychological care based on their assessments.[38] Low-risk patients are seen every 6 months and subclinical/mild patients every 3 months, during their routine epilepsy clinical visits, by a member of the psychology team. Sessions last about 30–45 min, and patients are provided with psychoeducation and basic skills for managing adjustment to epilepsy and subclinical mental health symptoms. High-risk patients are seen more frequently in clinic and/or referred for outpatient therapy with one of three epilepsy psychology providers. In contrast, the other two services only offer on-site interventions to high-risk patients. The RHCYP/SC offers high-need patients, aged between 12 and 18 years, and their caregivers the option of a psychosocial group program focused on psychoeducation and coping skills.[39,49] In addition, caregivers of moderate/high-need youth have the option of parenting workshops.[49] The RCH/SA offers only a small number of carefully selected at-risk children (e.g., severe depression) appointments with a child psychologist or psychiatrist who provides up to six individualized CBT and/or family therapy sessions.

3.6 | Service implementation factors

Table 4 outlines the top two facilitators and barriers to service establishment and maintenance and the funding models used by each service. Adult and pediatric services have been described together, given the overlap in findings.

3.6.1 | Key facilitators of service establishment

Three of the eight services reported that a top facilitator in the establishment of integrated psychological services was having a local champion on the epilepsy team who strongly advocated for integrated mental health care and took responsibility for setting up the program. In addition, two services reported it was important that the overall seizure care setting valued psychology and/or multidisciplinary care. Other top facilitators endorsed by three services were utilizing training or internship models for staffing and securing initial funding supplemented by charity, research, or community funding.

3.6.2 | Key barriers to service establishment

Four services reported that challenges in securing funding and limited funding availability were key barriers to establishing the service. There were several different models of funding utilized, consistent with the varying complexities of country-specific health systems. Similarly, four services noted staffing and/or resourcing barriers, which restricted the scope of services and capped patient numbers that could utilize the service. Two services also reported attitudinal barriers related to medical staff and patients initially not seeing the value or priority of integrated mental health care, noting the need to provide ongoing education in this area.

3.6.3 | Key facilitators of service maintenance

Four services noted that demand for the integrated psychological care service was a key driver of maintenance and growth. For instance, the RHH/EN and CCHMC/USA services originally started with the employment of one or two therapists and now each employ eight part-time therapists. The high demand for the service was often related to limited and/or costly alternative options for psychological care within the community and the strong value that patients and referrers find in the service. For the RCH/SA and RPAH/AU this was assisted by strong ongoing partnerships across the multidisciplinary team, and for the CCHMC/USA it was assisted by service evaluations that revealed the acceptability, clinical efficacy, and cost-effectiveness of the integrated service. Four services also noted staffing-related facilitators, including the benefits of expanding existing neuropsychological services to include mental health management and assistance from trainee staff members.

3.6.4 | Key barriers to service maintenance

Four services reported barriers related to meeting the high demand for the service and/or serving complex patient presentations. This resulted in lengthy waitlists in the RHH/EN and RIH/USA and risk of psychologist burnout in the RPAH/AU. Two services reported barriers related to the process of epilepsy health practitioners allocating patients into the service. The PWH/HK noted it relies heavily on referees having the ability to detect mental health difficulties themselves, with both PWH/HK and CCHMC/USA noting the process of orienting new health professionals to integrated care takes time and energy.

3.7 | Service acceptability/clinical efficacy

Table 4 also outlines service evaluation models.

3.7.1 | Adult

Two of the five adult services routinely assessed and have published data on the acceptability/efficacy of the services. Across several publications, the RHH/EN has demonstrated that patients attending the service experience significant improvements in their mental health symptoms (e.g., trauma, depression) that remain at follow-up.[32,40,41] The UKB/DE recently published data demonstrating that >95% of consenting participants adhered to mental health treatment plan recommendations 1 month after discharge.[45] The UKB/DE is actively collecting follow-up data on depressive and anxiety symptoms, as well as QOL, which is currently unpublished. One service, the RIH/USA neuropsychiatry division, is in the process (under review) of publishing data on PWE using NBT, which demonstrates reduction in epileptic seizures and improvements in neuropsychiatric aspects of epilepsy. The remaining two services reported anecdotally that their psychological pathways led to improvements, but this remains unpublished.

3.7.2 | Pediatric

Two of the three pediatric services routinely collect data to evaluate the service. Across several publications, the CCHMC/USA has demonstrated that the service is highly valued by families and results in improved depression and QOL outcomes in patients.[12,46,47,48] The RHCYP/SC has recently published data on a small pilot sample of children and young PWE passing through the PAVES screening and intervention pathway.[49] This report found high rates of acceptability and improvements in measures of self-esteem and peer acceptance. The RCH/SA reported anecdotally that families and youth value the service, but specific supportive data are not available.

3.8 | Service cost-effectiveness

Only one adult and two pediatric service have published data on the cost-effectiveness of their integrated service. The RHH/EN has reported evidence the service is cost-effective and can result in decreased health care utilization costs.[42] The CCHMC/USA service has been found to add negligible health care costs to patients and the overall health care system and thus is considered cost-effective.[46] Health Improvement Scotland has independently analyzed data collected by PAVES. This analysis demonstrated an overall cost savings due to decreased referrals of PWE to Child and Adolescent Mental Health Service.[50] The remaining five services were not actively collecting cost-effectiveness data.

4 | DISCUSSION

This report describes eight established approaches to integrated psychological care models for PWE and common mental health comorbidities. All increase access to psychological care, which is often considered first-line treatment for depression and anxiety in PWE and FDS.[3]

There is now a growing literature on the evolving models that can be utilized to facilitate the integration of mental/behavioral health care within primary care and other specialized care settings for people with chronic health conditions.[21,22] Within epilepsy care, the spectrum of integrated mental health care may include, at the lower end, recognition of mental health comorbidities via screening, provision of self-help materials, and/or referrals to external services. On the higher end, it may involve embedded and/or highly accessible psychologist- or mental health specialist-delivered care for appropriate patients. The successful implementation of these types of services is complex, and the level of integration will differ depending upon local resources available in each country. The breadth of the integrated psychosocial care service examples described demonstrates the potential to develop models tailored to the local environment and resources, and this report is intended to serve as an initial practical source of information for seizure care settings seeking to implement integrated psychological care. To assist this, below is a summary of key learning from the showcased services and practical tips toward building successful integrated mental health (psychological) care services. These have been split into (1) key tips we recommend all services aim to adopt; and (2) additional tips, which are ideal to adopt where plausible.

4.1 | Key practical tips for integrating psychological care services

- Identify local champion(s) with enthusiasm for integrated psychological care and the ability to formulate a strong rationale for the service and facilitate its establishment and ongoing maintenance.
- Identify and describe the gaps in mental health provisions for people with seizure disorders in the local area.
- Identify external services with relevant and potentially overlapping skill sets for signposting or collaboration (e.g., psychology, psychiatry, social work). This may involve having a directory of local mental health specialists.

- Consider integration with existing external services or creating new services with appropriate level and extent of integration based on the local setting's resources. For instance, screening and referral to external services may be more feasible than adopting new pathways to on-site psychological interventions.
- Identify sustainable funding sources to assist with service establishment/maintenance. This may include traditional hospital-based funding, as well as sources of community, charity, and research funding. It may also include methods of patient billing.
- Clearly define the scope of the service and provide ongoing education to practitioners allocating patients to the service, as well as patients and families, to facilitate appropriate referrals.
- Establish clear procedures for identifying and managing those who are ineligible for the service, such as relationships with mental health crisis teams.
- Identify service exit points (e.g., number of maximum sessions). Seek collaboration with longer term mental health and community service providers for those requiring additional care.

4.2 | Additional practical tips for integrating psychological care services

- Adapt existing models of integrated mental health care within other health care settings,[21,22] including seeking guidance from integrated psychological care models in local hospital settings for patients with other chronic health conditions (e.g., oncology and diabetes) that may already be established.
- Consider sustainable and scalable staffing models that assign mental health workload for established neuropsychology staff, employ dedicated mental health staff, and/or utilize internship, residency, or fellowship programs for trainee psychologists and/or psychiatrists.
- Identify high-quality available local psychoeducational materials about mental health, such as that published by local epilepsy foundations.
- Identify and/or establish educational materials to increase mental health providers' knowledge of epilepsy and its comorbidities. This may be facilitated via partnerships between local epilepsy and mental health organizations.
- Identify and/or establish training models for mental health therapists to effectively work with PWE and/or FDS (e.g., Gandy,[57] Myers et al.[58]).
- Evaluate and address potential patient-related attitudinal (e.g., stigma) and practical (e.g., costs, transportation) barriers to mental health care engagement.
- Establish ways to incorporate mental health feedback into patient case notes and feedback reports to the epilepsy team and/or referring practitioner.
- Build in ongoing service evaluation for the clinical and cost-effectiveness of the service, which may be assisted by incorporating implementation science models.[59,60]

4.3 | Limitations and future directions

Despite contacting authors of psychological trials, and our open call in the ILAE newsletter, we were only able to identify a small number ($n=8$) of representative established programs. We were unable to showcase examples from ILAE regions in Latin America or the Eastern Mediterranean area, and the integrated care programs included in this report are by no means all the current existing programs. Hence, the findings might not be representative of the experiences of other seizure care settings. Moreover, five have published evidence for clinical efficacy, with only three reporting on cost-effectiveness. Future work in this area is critical to quantify the potential impact of integrated care, including measures of clinically meaningful symptom change.

5 | CONCLUSIONS

Mental health comorbidities are highly prevalent and problematic in PWE but often go suboptimally managed within seizure care settings.[24] To address common gaps in care, the Integrated Mental Health Care Pathways Task Force of the ILAE Psychiatry Commission developed this report to provide education and guidance on the integration of mental health management into routine seizure care, which may inform development of psychological care clinics internationally. This work supports the World Health Organization recommendation for more integration of mental health care within health settings and targets of IGAP for greater psychosocial and patient-centered care initiatives.[29,61] Finally, the report may also assist with competencies for epileptologists, outlined in the ILAE educational roadmap for screening and referral of patients with depression and anxiety.[62]

AUTHOR CONTRIBUTIONS

Milena Gandy conceptualized the idea for the article. MG, Rosa Michaelis, and Heidi M. Munger Clary coordinated contact with the ILAE publication council. Heidi M. Munger Clary contacted authors of psychological interventions from the Cochrane Review. Milena Gandy and Heidi M. Munger Clary facilitated collection of data from all services. Rosa Michaelis, Jayne Acraman, Kirsten

A. Donald, Michael Fitzpatrick, W. Curt LaFrance, Jr., Seth A. Margolis, Avani C. Modi, Markus Reuber, Venus Tang, Zoe Thayer, Kirsten Verity, Jo Wilmshurst, and Sarah Whittaker all provided extensive detail about the operations of psychological services showcased in this manuscript. Milena Gandy, Janelle L. Wagner, and Heidi M. Munger Clary drafted the first manuscript. All authors made significant contributions to the writing of the article. All authors approve the final manuscript for submission.

ACKNOWLEDGMENTS

The authors gratefully acknowledge all the staff within the services showcased for their work supporting people with seizures and their families. We also thank the ILAE for publishing a call out within the ILAE online newsletter to assist with identifying established integrated psychological care services in the ILAE community. This report was written by experts selected by the ILAE, alongside coauthors showcasing services. The publication was approved for publication by the ILAE. Opinions expressed by the authors, however, do not necessarily represent the policy or position of the ILAE. Open access publishing facilitated by Macquarie University, as part of the Wiley - Macquarie University agreement via the Council of Australian University Librarians.

CONFLICT OF INTEREST STATEMENT

M.G. is supported by a Postdoctoral Fellowship from MS Australia. She develops and evaluates psychological treatment programs for adults with neurological disorders, including epilepsy. These clinical trials follow Consolidated Standards of Reporting Trials (CONSORT) reporting standards and are ethics committee-approved and peer-reviewed to address any potential bias. R.M. receives research funding from the internal FoRUM grant program (project K160-20-A) of the Faculty of Medicine at Ruhr University Bochum, Germany. These clinical trials follow CONSORT reporting standards and are ethics committee-approved and peer-reviewed to address any potential bias. She receives author royalties for the German self-help workbooks from Hippocampus and Pabst publishers, 2021. J.A. is employed as a psychotherapist within a state-funded neurology psychotherapy service. She therefore has an interest in providing, exploring, and improving clinical outcomes for patients. However, she believes this bias is compatible with the value of impartial representation of current service delivery to continue to evaluate and improve service provision for patients in the future. K.A.D. works in a clinical environment where she sees and manages children with epilepsy, developmental and intellectual disabilities, and challenging behavior. She has received funding for unrelated research projects supported by the South African National Research Foundation and Medical Research Council, by an Academy of Medical Sciences Newton Advanced Fellowship (NAF002\1001), funded by the UK Government's Newton Fund, by the National Institutes of Health (NIH; NIAAA, NIMH), by UK MRC (MR/T002816/1), and by the US Brain and Behavior Foundation Independent Investigator grant (24467). She has no conflicts of interest. W.C.L. receives author royalties for the seizure treatment book *Taking Control of Your Seizures: Workbook*, Oxford University Press, 2015. He studies evidence-based nonpharmacological interventions for people with seizures and receives funding from the US Congressionally Directed Medical Research Programs (CDMRP; award number W81XWH-17-1-0619), which are ethics committee-approved and peer-reviewed to address any potential bias. S.A.M. codeveloped and studies an internet-based self-management program to reduce internalized stigma and enhance quality of life for people with epilepsy and receives funding from the Epilepsy Foundation New England (2022 recipient of Blue Skies Research in Epilepsy: Innovations to Improve Quality of Life Award), which is ethics committee-approved. A.C.M. receives research funding from the NIH for clinical trials related to psychological treatments for youth with epilepsy. These clinical trials follow CONSORT reporting standards and are ethics committee-approved and peer-reviewed to address any potential bias. She has received consulting fees from industry for expertise related to patient-reported outcomes in youth with epilepsy. She receives royalties from her book *Adherence and Self-Management in Pediatric Populations* published by Elsevier. M.R. is responsible for developing and supervising a team of psychotherapists working in a clinical neurology department and provides treatment to people with epilepsy. He therefore has an interest in demonstrating the effectiveness of psychotherapy. However, this potential bias is outweighed by his interest in the development of evidence-based treatments, encouraging him to assess the existing evidence as objectively and impartially as possible. V.T. works as a clinical psychologist in a public hospital in Hong Kong under the Hospital Authority (HA). The views expressed are those of the author, and not necessarily those of the HA. She has received honoraria for speaking, and educational activities not funded by industry. She has no conflicts of interest to report. J.W. works at a university tertiary referral teaching hospital as a child neurologist. She is an associate editor for *Epilepsia* and receives an honorarium for this work. She serves on the national (South African) advisory boards for Sanofi and Novartis. J.L.W. receives research funding from the NIH for clinical trials related to psychological treatments for youth with epilepsy. These clinical trials follow CONSORT reporting standards and are ethics committee-approved and peer-reviewed to address any potential bias. H.M.M.C. receives

consulting fees for being a topic editor for DynaMed and has received honoraria from the J. Kiffin Penry Epilepsy Programs; these are not relevant to the present work. She receives research funding for studies related to anxiety and depression screener delivery in routine care and for research examining evidence-based integrated care delivery implementation from the NIH (R03TR004251), the CDMRP (W81XWH2210630), and the Duke Endowment that are ethics committee-approved and peer-reviewed to address any potential bias. She has received research funding from Eysz for work unrelated to the present article. The remaining authors have no conflicts of interest.

ORCID

Milena Gandy https://orcid.org/0000-0003-2161-3298
Rosa Michaelis https://orcid.org/0000-0002-2577-0824
W. Curt LaFrance Jr. https://orcid.org/0000-0002-4901-3852
Avani C. Modi https://orcid.org/0000-0002-7580-3751
Jo Wilmshurst https://orcid.org/0000-0001-7328-1796
Heidi M. Munger Clary https://orcid.org/0000-0002-9889-8351

REFERENCES

1. Scott AJ, Sharpe L, Hunt C, Gandy M. Anxiety and depressive disorders in people with epilepsy: a meta-analysis. Epilepsia. 2017;58:973–82. https://doi.org/10.1111/epi.13769
2. Scott AJ, Sharpe L, Loomes M, Gandy M. Systematic review and meta-analysis of anxiety and depression in youth with epilepsy. J Pediatr Psychol. 2020;45:133–44.
3. Mula M, Kanner AM, Jetté N, Sander JW. Psychiatric comorbidities in people with epilepsy. Neurol Clin Pract. 2021;11:e112–20.
4. Kanner AM. Is it time to train neurologists in the management of mood and anxiety disorders? Epilepsy Behav. 2014;34:139–43.
5. Patel V, Chisholm D, Parikh R, Charlson FJ, Degenhardt L, Dua T, et al. Addressing the burden of mental, neurological, and substance use disorders: key messages from disease control priorities, 3rd edition. The Lancet. 2016;387:1672–85.
6. Hesdorffer DC. Comorbidity between neurological illness and psychiatric disorders. CNS Spectr. 2016;21:230–8.
7. Taylor RS, Sander JW, Taylor RJ, Baker GA. Predictors of health-related quality of life and costs in adults with epilepsy: a systematic review. Epilepsia. 2011;52:2168–80.
8. Nogueira MH, Yasuda CL, Coan AC, Kanner AM, Cendes F. Concurrent mood and anxiety disorders are associated with pharmacoresistant seizures in patients with MTLE. Epilepsia. 2017;58:1268–76.
9. Hesdorffer DC, Ishihara L, Webb DJ, Mynepalli L, Galwey NW, Hauser WA. Occurrence and recurrence of attempted suicide among people with epilepsy. JAMA Psychiatry. 2016;73:80–6.
10. Gur-Ozmen S, Mula M, Agrawal N, Cock HR, Lozsadi D, von Oertzen TJ. The effect of depression and side effects of antiepileptic drugs on injuries in patients with epilepsy. Eur J Neurol. 2017;24:1135–9.
11. O'Rourke G, O'Brien J. Identifying the barriers to antiepileptic drug adherence among adults with epilepsy. Seizure. 2017;45:160–8.
12. Guilfoyle SM, Monahan S, Wesolowski C, Modi AC. Depression screening in pediatric epilepsy: evidence for the benefit of a behavioral medicine service in early detection. Epilepsy Behav. 2015;44:5–10.
13. Puka K, Smith ML, Moineddin R, Snead OC, Widjaja E. The influence of socioeconomic status on health resource utilization in pediatric epilepsy in a universal health insurance system. Epilepsia. 2016;57:455–63.
14. Cramer JA, Blum D, Fanning K, Reed M. The impact of comorbid depression on health resource utilization in a community sample of people with epilepsy. Epilepsy Behav. 2004;5(3):337–42.
15. Walsh S, Levita L, Reuber M. Comorbid depression and associated factors in PNES versus epilepsy: systematic review and meta-analysis. Seizure. 2018;60:44–56.
16. Mula M, Kanner AM, Schmitz B, Schachter S. Antiepileptic drugs and suicidality: an expert consensus statement from the task force on therapeutic strategies of the ILAE commission on neuropsychobiology. Epilepsia. 2013;54:199–203.
17. Kerr MP, Mensah S, Besag F, de Toffol B, Ettinger AE, Kanemoto K, et al. International consensus clinical practice statements for the treatment of neuropsychiatric conditions associated with epilepsy. Epilepsia. 2011;52:2133–8.
18. Mula M, Brodie MJ, de Toffol B, Guekht A, Hecimovic H, Kanemoto K, et al. ILAE clinical practice recommendations for the medical treatment of depression in adults with epilepsy. Epilepsia. 2021;63:316–34. https://doi.org/10.1111/epi.17140
19. Michaelis R, Tang V, Nevitt SJ, Wagner JL, Modi AC, LaFrance WC Jr, et al. Cochrane systematic review and meta-analysis of the impact of psychological treatment on health-related quality of life in people with epilepsy: an update by the ILAE psychology task force, highlighting methodological changes. Epileptic Disord. 2021;23:803–11.
20. Pygott N, Hartley A, Seregni F, Ford TJ, Goodyer IM, Necula A, et al. Research review: integrated healthcare for children and young people in secondary/tertiary care – a systematic review. J Child Psychol Psychiatr. 2023;1–16
21. Collins C, Hewson DL, Munger R, Wade T. Evolving models of behavioral health integration in primary care. New York Milbank Mem Fund. 2010;504:1–88.
22. Ramanuj P, Ferenchik E, Docherty M, Spaeth-Rublee B, Pincus HA. Evolving models of integrated behavioral health and primary care. Curr Psychiatry Rep. 2019;19(21):4.
23. Huffman JC, Niazi SK, Rundell JR, Sharpe M, Katon WJ. Essential articles on collaborative care models for the treatment of psychiatric disorders in medical settings: a publication by the academy of psychosomatic medicine research and evidence-based practice committee psychosomatics. Psychosomatics. 2014;55:109–22.
24. Gandy M, Modi AC, Wagner JL, LaFrance WC Jr, Reuber M, Tang V, et al. Managing depression and anxiety in people with epilepsy: a survey of epilepsy health professionals by the ILAE Psychology Task Force. Epilepsia Open. 2021;6:127–39. https://doi.org/10.1002/epi4.12455
25. Mahendran M, Speechley KN, Widjaja E. Systematic review of unmet healthcare needs in patients with epilepsy. Epilepsy Behav. 2017;75:102–9.
26. Reid AY, Metcalfe A, Patten SB, Wiebe S, Macrodimitris S, Jetté N. Epilepsy is associated with unmet health care needs compared to the general population despite higher health resource utilization – a Canadian population-based study. Epilepsia. 2012;53:291–300.

27. Lopez MR, Schachter SC, Kanner AM. Psychiatric comorbidities go unrecognized in patients with epilepsy: "you see what you know". Epilepsy Behav. 2019;98:302–5.
28. Marco M, Esper C, Alla G, Andres MK, Hyang Woon L, Çiğdem Ö, et al. Educational needs of epileptologists regarding psychiatric comorbidities of the epilepsies: a descriptive quantitative survey. Epileptic Disord. 2017;19:178–85.
29. WHO. Intersectoral global action plan on epilepsy and other neurological disorders 2022–2031. 2022. [Accessed 01 August 2022]. Available from: https://www.who.int/publications/m/item/intersectoral-global-action-plan-on-eepilepsy-and-other-neurological-disorders-2022-2031
30. Michaelis R, Tang V, Nevitt SJ, Wagner JL, Modi AC, LaFrance W Jr, et al. Psychological treatments for people with epilepsy. Cochrane Database Syst Rev. 2020. https://doi.org/10.1002/14651858
31. Gray C, Calderbank A, Adewusi J, Hughes R, Reuber M. Symptoms of posttraumatic stress disorder in patients with functional neurological symptom disorder. J Psychosom Res. 2020;129:109907.
32. Dewhurst E, Novakova B, Reuber M. A prospective service evaluation of acceptance and commitment therapy for patients with refractory epilepsy. Epilepsy Behav. 2015;46:234–41.
33. Reuber M, Mitchell AJ, Howlett S, Elger CE. Measuring outcome in psychogenic nonepileptic seizures: how relevant is seizure remission? Epilepsia. 2005;46:1788–95.
34. LaFrance WC Jr, Baird GL, Barry JJ, Blum AS, Frank Webb A, Keitner GI, et al. Multicenter pilot treatment trial for psychogenic nonepileptic seizures: a randomized clinical trial. JAMA Psychiatry. 2014;71:997–1005.
35. Goldstein AS, Kiriakopoulos ET, Tremont G, Mankodiya K, Ummie S, Margolis S. A-156 development of an online intervention to reduce internalized stigma in epilepsy. Arch Clin Neuropsychol. 2022;37:1310.
36. Sajatovic M, Jobst BC, Shegog R, Bamps YA, Begley CE, Fraser RT, et al. The managing epilepsy well network: advancing epilepsy self-management. Am J Prev Med. 2017;52:S241–s245.
37. Heinen GM, Michaelis R, Elsas S. Selbst-Handeln bei Anfällen. Lengerich: Hippocampus; Pabst; 2021.
38. Guilfoyle SM, Follansbee-Junger K, Modi AC. Development and preliminary implementation of a psychosocial service into standard medical care for pediatric epilepsy. Clin Pract Pediatr Psychol. 2013;1:276–88.
39. Dorris L, Broome H, Wilson M, Grant C, Young D, Baker G, et al. A randomized controlled trial of a manual-based psychosocial group intervention for young people with epilepsy [PIE]. Epilepsy Behav. 2017;72:89–98.
40. Mayor R, Howlett S, Grünewald R, Reuber M. Long-term outcome of brief augmented psychodynamic interpersonal therapy for psychogenic nonepileptic seizures: seizure control and health care utilization. Epilepsia. 2010;51:1169–76.
41. Reuber M, Burness C, Howlett S, Brazier J, Grünewald R. Tailored psychotherapy for patients with functional neurological symptoms: a pilot study. J Psychosom Res. 2007;63:625–32.
42. Williams IA, Howlett S, Levita L, Reuber M. Changes in emotion processing following brief augmented psychodynamic interpersonal therapy for functional neurological symptoms. Behav Cogn Psychother. 2018;46:350–66.
43. Gandy M, Sharpe L, Nicholson Perry K, Thayer Z, Miller L, Boserio J, et al. Cognitive behaviour therapy to improve mood in people with epilepsy: a randomised controlled trial. Cogn Behav Ther. 2014;43:153–66.
44. Gandy M, Sharpe L, Nicholson Perry K, Miller L, Thayer Z, Boserio J, et al. Rates of DSM-IV mood, anxiety disorders, and suicidality in Australian adult epilepsy outpatients: a comparison of well-controlled versus refractory epilepsy. Epilepsy Behav. 2013;26:29–35.
45. Michaelis R, Schlömer S, Lindemann A, Behrens V, Grönheit W, Pertz M, et al. Screening for psychiatric comorbidities and psychotherapeutic assessment in inpatient epilepsy care: preliminary results of an implementation study. Front Integr Neurosci. 2021;15:36. https://doi.org/10.3389/fnint.2021.754613
46. Ryan JL, McGrady ME, Guilfoyle SM, Follansbee-Junger K, Peugh JL, Loiselle KA, et al. Quality of life changes and health care charges among youth with epilepsy. J Pediatr Psychol. 2016;41:888–97.
47. Guilfoyle SM, Follansbee-Junger K, Smith AW, Combs A, Ollier S, Hater B, et al. Antiepileptic drug behavioral side effects and baseline hyperactivity in children and adolescents with new onset epilepsy. Epilepsia. 2018;59:146–54.
48. Guilfoyle SM, Mara CA, Follansbee-Junger K, Smith AW, Hater B, Modi AC. Quality of life improves with integrated behavioral health services in pediatric new-onset epilepsy. Epilepsy & Behavior. 2019;96:57–60.
49. George C, Felix SA, McLellan A, Shetty J, Middleton J, Chin RF, et al. Pilot project of psychological services integrated into a pediatric epilepsy clinic: psychology adding value – epilepsy screening (PAVES). Epilepsy Behav. 2021;120:107968.
50. SHTG. The Psychology Adding Value – Epilepsy Screening (PAVES) and early intervention for children and young people with epilepsy at risk of mental health problems. 2022.
51. Kamphaus RW, VanDeventer MC, Brueggemann A, Barry M. Behavior assessment system for children. 2007.
52. Thompson NJ, Patel AH, Selwa LM, Stoll SC, Begley CE, Johnson EK, et al. Expanding the efficacy of project UPLIFT: distance delivery of mindfulness-based depression prevention to people with epilepsy. J Consult Clin Psychol. 2015;83:304–13.
53. Caller TA, Ferguson RJ, Roth RM, Secore KL, Alexandre FP, Zhao W, et al. A cognitive behavioral intervention (HOBSCOTCH) improves quality of life and attention in epilepsy. Epilepsy Behav. 2016;57:111–7.
54. Michaelis R, Schiepek G, Heinen GM, Edelhäuser F, Viol K. Process-oriented and personalized psychotherapeutic care for epilepsy: interim results of a feasibility study. Epilepsy Behav. 2021;124:108313.
55. Reiter JM, Andrews D, Reiter C, LaFrance WC Jr. Taking control of your seizures: Workbook. New York: Oxford University Press; 2015. https://doi.org/10.1093/med:psych/9780199335015.001.0001
56. LaFrance WC, Wincze JP. Treating nonepileptic seizures: therapist guide: treatments that work. 2015.
57. Gandy M. The role of psychologists in managing mental health comorbidities in adults with neurological disorders. Aust Psychol. 2023;58:161–68.
58. Myers L, Sarudiansky M, Korman G, Baslet G. Using evidence-based psychotherapy to tailor treatment for patients with functional neurological disorders. Epilepsy Behav Rep. 2021;16:100478.

59. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci. 2009;4:1–15.
60. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. Am J Public Health. 1999;89:1322–7.
61. Global actions on epilepsy and other neurological disorders [database on the Internet]. Seventy-Third World Health Assembly. 2020. [Accessed 02 December 2021] Available from: https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R10-en.pdf
62. Ingmar B, Alexis A, Sandor B, Samuel W, the EpiEd Task F. Roadmap for a competency-based educational curriculum in epileptology: report of the epilepsy education task force of the international league against epilepsy. Epileptic Disord. 2019;21:129–40.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Gandy M, Michaelis R, Acraman J, Donald KA, Fitzpatrick M, LaFrance WC Jr., et al. Integrated psychological care services within seizure settings: Key components and implementation factors among example services in four ILAE regions: A report by the ILAE Psychiatry Commission. Epilepsia. 2023;00:1–19. https://doi.org/10.1111/epi.17647