

# Enhanced Primary Mental Health Services in Response to Disaster

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**Objective:** Although postdisaster mental health sequelae are recognized, the role of mental health services in primary care after disasters has not been investigated. This study examined the uptake of enhanced primary mental health services delivered via the Australian government mental health response to the 2009 Victorian bushfires and considered the consumer outcomes associated with them. **Methods:** Data from a national Web-based minimum data set enabled description of consumers, sessions, and treatment outcomes. Key informant interviews provided supplementary qualitative data. **Results:** From January 2009 to June 2011, a total of 1,535 consumers received 9,949 sessions via enhanced primary mental health services. Most had depressive disorders, anxiety disorders, or both. Clinical outcomes data from standardized mental health outcome measures demonstrated statistically significant gains indicative of clinical improvement. **Conclusions:** Primary mental health services were well utilized and received by bushfire-affected individuals in most areas and produced positive outcomes for consumers in terms of reducing symptoms and improving psychosocial functioning. Enhancing existing primary mental health services shows promise as a means of responding to bushfires and may be applicable internationally in other disaster contexts. (*Psychiatric Services* 63:868–874, 2012; doi: 10.1176/appi.ps.201100534)

In early 2009, Australia experienced its most extensive natural disaster. Bushfires devastated large parts of Victoria, which resulted in the loss of 173 lives, affected 51 townships, and destroyed over 2,000 homes in addition to many businesses, schools, and kindergartens (1). As part of the Australian government's mental health response to the 2009 Victorian bushfires, support to people most affected by the fires was delivered through enhanced primary mental health care services.

The existing evidence demonstrates that disasters of this magnitude can significantly affect the mental health of individuals and communities in multiple ways and at varying

levels of severity and duration. Mental health sequelae after previous international disasters have been widely documented (2,3), including after Hurricane Katrina, which devastated Mississippi in 2005, and after the September 11, 2001, terrorist attacks on the World Trade Center and the Pentagon. Furthermore, the prevalence of sequelae such as posttraumatic stress disorder (PTSD), other anxiety disorders, and suicidality has been reported to persist at 17 to 19 months postdisaster (4). Despite this lingering need, only a minority of disaster survivors with mental disorders access adequate mental health care. Structural, financial, and attitudinal barriers contribute to this

problem (5), and little is known about what treatments work in this context (3).

## Primary mental health care

In July 2001, the Australian government funded the Better Outcomes in Mental Health Care (BOiMHC) program in response to low treatment rates for common mental disorders. A key feature of the BOiMHC program is its Access to Allied Psychological Services (ATAPS) component. ATAPS enables family physicians (known in Australia as general practitioners) to refer patients with highly prevalent disorders (depression and anxiety) to allied health professionals (predominantly psychologists) for free or low-cost, evidence-based mental health care (most commonly cognitive-behavioral therapy [CBT]). This care is typically delivered in six individualized sessions, with an additional six sessions (or 12 sessions in exceptional circumstances) made available in a calendar year if this is considered warranted after a review by the referring general practitioner. In addition, up to 12 group sessions are also available (6).

ATAPS is operationalized via a series of projects run by regional general practice networks, which are primary health care organizations involved in health promotion, early intervention and prevention strategies, chronic disease management, and workforce support for general practitioners. Currently, all 111 Australian general practice networks are running ATAPS projects.

## Enhanced primary mental health care

In February 2009, additional funding from the Australian government was

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provided to each of nine bushfire-affected Victorian state general practice networks (one via a fund-holding arrangement with a tenth organization) under the ATAPS projects. The funding aimed to increase provision of psychological services to bushfire-affected people, with additional training made available for ATAPS allied health professionals to enable them to provide appropriate and evidence-based support to this group of people.

ATAPS projects in bushfire-affected regions were enhanced to provide more flexible services. Bushfire-affected individuals with persistent psychological symptoms (as opposed to a disorder) were afforded certain flexibilities concerning their access to services. In addition to the usual general practitioner referral pathway, referrals could be made by the Victorian Department of Human Services bushfire case managers (provided that, in the case of the latter, a general practitioner referral involving an explicit assessment and treatment plan was prepared while the consumer was being treated via ATAPS), and there was no limit on the number of sessions of care provided. Additional funding continues to be provided to a number of general practice networks to ensure that they have capacity to support people affected by bushfires.

This study evaluated services delivered via ATAPS. To demonstrate the role of enhanced primary care in a disaster context, we report on the uptake of ATAPS, the consumer and session profiles, and the outcomes achieved. Qualitative data are presented to supplement this aim. To our knowledge, the role of primary mental health care has not been the focus of postdisaster mental health service utilization literature (7).

## Methods

The study received clearance from the University of Melbourne, Human Research Ethics Committee. Deidentified data were analyzed from a Web-based minimum data set used for routine program monitoring and required under organization funding agreements. Before participating in the interviews, key informants were

asked to provide their written informed consent.

## Data sources

*Minimum data set.* Data were collected via providers and entered by project officers (or providers) into a Web-based purpose-designed national minimum data set that captured data on the numbers of general practitioners, allied health professionals, and consumers involved in the projects; sociodemographic (including age, gender, and level of income) and clinical (including diagnosis, previous psychiatric service use, and clinical outcome) characteristics of consumers; and the number, type, and duration of sessions and the nature of the interventions provided. In addition, a field for program type identified a given consumer as having been referred to the ATAPS bushfire service, and a separate data field identified the source of the referral (general practitioner or bushfire case manager). Uptake data were available for nine general practice networks.

*Key informant interviews.* Semi-structured interviews were conducted with ten project officers or program coordinators and one chief executive officer from ten general practice networks (including the fund holder) involved. Interview questions explored issues related to offering services for consumers affected by bushfires (such as impacts on general practice networks, facilitating factors, and potential improvements). Interviews were conducted in person or by telephone, then recorded and transcribed.

## Data analyses

*Minimum data set.* Descriptive analyses of the uptake of the ATAPS bushfire services and consumer and session profiles were conducted. Paired *t* tests were used to examine the difference between mean pre- and post-treatment scores on selected outcome measures. Consumers who did not have a matched pair of pre- and posttreatment scores were excluded. The analysis period was January 1, 2009, to June 30, 2011.

*Interviews.* Transcripts of interviews with key informants were thematically analyzed. The analyses in-

cluded coding responses according to a prestructured thematic coding system that was developed in direct alignment with the interview questions. These broad response categories were then further analyzed for the existence of more detailed sub-themes.

## Results

### *Uptake of the ATAPS bushfire service*

Overall, 1,891 referrals were made by 391 general practitioners and 65 case managers, and sessions were conducted by 194 allied health professionals. Overall, 9,949 sessions were delivered to 1,535 (or 81% of the referred) consumers, making 6.5 the average number of sessions per referral.

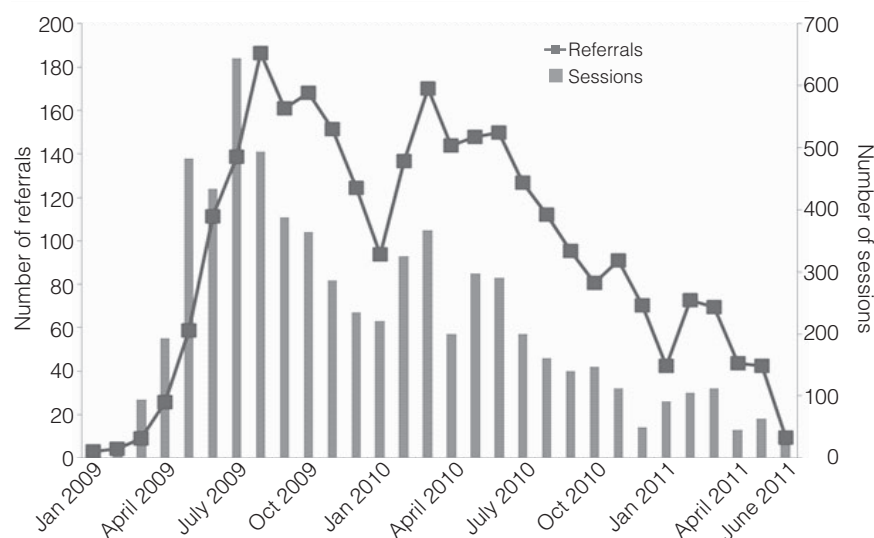
Figure 1 shows referrals and sessions by month for the nine general practice networks that supplied data from January 2009 to June 2011. The number of referrals and sessions gradually increased and peaked in July and August 2009, respectively. After declining, they peaked again in March 2010, around the time of the one-year anniversary of the bushfires. Since this second peak, referrals and sessions have been gradually decreasing and may be attributable to relocation of consumers or to a genuine reduction in need for the enhanced service. The decline in referrals and sessions in the last quarter may be attributable to data entry lags.

### *Sociodemographic and clinical profile of consumers*

Table 1 summarizes some of the key characteristics of the consumers receiving care through the ATAPS bushfire services. Overall, 62% of consumers were female, and the mean age was 42 years. Almost two-thirds had low incomes, as judged by their general practitioners. Over two-fifths of consumers had not accessed mental health care before the bushfires. Approximately 1% of consumers were reported to be Aboriginal, and less than 1% Torres Strait Islander. Most consumers were diagnosed as having depression (48%), an anxiety disorder (47%), or a diagnosis classified as "other" (54%), and consumers may have had comorbid psychiatric diagnoses. Many of the free-

**Figure 1**

Monthly referrals for mental health care through Australia's Access to Allied Psychological Services program after the 2009 bushfires, January 2009 to June 2011<sup>a</sup>



<sup>a</sup> An additional five referrals and ten sessions were recorded as having taken place pre-January 2009, but the dates are likely to be data entry errors.

text descriptors of other diagnoses were indicative of variants of stress, trauma, PTSD, and bereavement. A further 15% were reported not to have a formal diagnosis.

### Characteristics of sessions

The profile of sessions delivered to bushfire-affected consumers is shown in Table 2. Almost all sessions (92%) were delivered to individuals. Overall, sessions of 46–60 minutes accounted for the vast majority (85%) of services delivered. The most frequently delivered interventions were cognitive (56%) or behavioral (45%); however, psychoeducation, interpersonal therapy, CBT skills training, and CBT relaxation strategies were also commonly delivered. A small number of sessions were delivered via telephone, and one was delivered via videoconference. Of the 1,708 sessions where payment information was available, a majority (1,643 sessions, 96%) were delivered free of charge.

### Consumer outcomes

In total, 261 cases of matched pre- and posttreatment outcome measure scores were available, representing 12% (or 188 of 1,535) of consumers.

Table 3 shows the number of consumers (ranging from 25 to 88) as-

essed with each outcome measure and the mean difference in pre- and posttreatment scores on the five measures used: the Kessler-10 (8), the Health of the Nation Outcome Scales (9), the Beck Depression Inventory (10), the Beck Anxiety Inventory (11), and the Depression, Anxiety, and Stress Scales (DASS) (12). With the exception of the DASS, the mean differences were based on total scores; in the case of the DASS, the mean differences were based on scores for each of the three subscales. Across all measures, the mean difference was statistically and clinically significant (with an average reduction in symptom severity from severe to moderate and from moderate to mild), indicating positive consumer outcomes.

### Effects of the ATAPS enhanced services

Key informant interviews confirmed that ATAPS had produced positive outcomes for bushfire-affected consumers and highlighted other positive impacts, facilitating factors, and potential improvements.

*Impact on general practice networks.* Overall, the ATAPS bushfire service was reported to have had positive impacts on participating general practice networks. Most notably,

general practice networks reported an increase in their public profile among other agencies, schools, and the community. Complementary to this, general practice networks reported an increase in their awareness of regionally relevant issues, enabling them to support townships and services beyond their usual roles. They also developed or strengthened relationships with other organizations (including local, state, and federal government; emergency services; and community health). The benevolence associated with supporting general practitioners and consumers was also favorably viewed. In general, informants reported either no or few negative impacts of the ATAPS bushfire service. Examples of negative impacts included increased workload and uncompleted usual duties; workforce health issues associated with physical, emotional, and mental stress; inaccessibility of suitably qualified ATAPS professionals; and issues associated with temporary (or project-based) funding.

*Facilitating factors.* Numerous factors facilitated the effective operation of the ATAPS bushfire service. Most notably, the flexibility of service guidelines optimized responsive and timely access to unlimited psychological services. The flexible guidelines contributed to an extremely favorable response to the service by general practitioners and allied health professionals. This was demonstrated by the high volume and immediacy of referrals made by the former, who often were already utilizing ATAPS, and the goodwill and expertise of the latter.

The opportunity to embed the specialist bushfire service within the ATAPS platform, particularly in locations with strong preexisting ATAPS models, facilitated utilization of the general practice networks' existing infrastructure, knowledge base, relationships, and local networks and therefore the capacity to immediately commence service delivery. Service delivery models used by each general practice network are flexible, thereby optimizing responsiveness to local needs (13). In some instances, new allied health professionals were recruited to meet demand and expertise needs or to service a wider geograph-

**Table 1**

Characteristics of bushfire-affected consumers receiving mental health care through Australia's ATAPS program, January 2009 to June 2011<sup>a</sup>

Characteristic	N	%
Gender (N=1,870)		
Female	1,151	62
Male	608	33
Missing data	111	6
Age (N=1,891)		
M±SD years	42±17	
Missing data	105	6
Low income (N=1,891)		
Yes	1,202	64
No	448	24
Unknown	205	11
Missing data	36	2
Previous psychiatric service use (N=1,891)		
Yes	840	44
No	780	41
Unknown	205	11
Missing data	66	4
Aboriginal (N=1,870)		
Yes	17	1
No	1,486	79
Unknown	246	3
Missing data	139	7
Torres Strait Islander (N=1,870)		
Yes	2	<1
No	1,462	78
Unknown	247	13
Missing data	159	9
Diagnosis (N=1,891) <sup>b</sup>		
Alcohol and drug use disorder	81	4
Psychotic disorder	18	1
Depression	910	48
Anxiety disorder	897	47
Unexplained somatic disorder	24	1
Other	1,016	54
No formal diagnosis	280	15
Unknown	29	2
Missing data	88	5

<sup>a</sup> ATAPS, Access to Allied Psychological Services. Twenty-one consumers were referred on more than one occasion.

<sup>b</sup> Multiple responses were permitted.

ic area. Although most services were delivered in general practitioners' or allied health providers' offices, other locations (such as outreach to home) were used as necessary to ensure that those in need received services.

Good collaboration and support between general practice networks and other organizations, providers, and neighboring and other general practice networks were also important. The responsiveness of the Australian

Government Department of Health and Ageing to the needs of general practice networks was imperative and was demonstrated by provision of an appropriate level of initial funding and extension of funding beyond the initial year in recognition that there was an ongoing need being met.

*Improvements.* Despite its overall success, a number of potential improvements to the service were identified. A needs analysis of individual general practice networks was recommended to determine preparedness for response to future disasters. More opportunities for key stakeholders to provide government with feedback were desired. Creating a good overall communication strategy about the entire suite and coordination of available services, developing structural systemic relationships between services, and improving the engagement of general practice networks by the Victorian government were also recommended. Further flexibility of service guidelines was desired, particularly regarding the types of interventions permitted and eligible providers (such as grief and bereavement counselors).

The skill level of providers varied, indicating that the available provider training should have perhaps been mandatory as part of the specialist service provision model. More funding was desired for a range of activities other than direct service provision (including community recovery, marketing, increased administration, uncounted costs of workforce health problems, and monitoring people who had relocated). In order to identify existing, continuing, and unmet need and to facilitate planning for longer-term recovery, respondents recommended improving data collection and the availability of general practice network-level data.

## Discussion

Overall, the ATAPS bushfire service was well utilized and received in most regions. From January 1, 2009, to June 30, 2011, bushfire referrals and sessions accounted for 18% and 22%, respectively, of all ATAPS referrals and sessions associated with the nine involved general practice networks.

The service uptake pattern, over a

**Table 2**

Characteristics of 9,949 mental health sessions provided to bushfire-affected consumers through Australia's ATAPS program, January 2009 to June 2011<sup>a</sup>

Characteristic	N	%
Duration (minutes)		
0–30	53	1
31–45	73	1
46–60	8,430	85
>60	693	7
Missing data	700	6
Type of mental health session		
Group	113	1
Individual	9,137	92
Missing data	699	7
Modality		
Face to face	9,738	98
Telephone	41	<1
Videoconference	1	<1
Missing data	169	2
Consumer fee		
Yes	65	1
No	1,643	16
Missing data	8,241	83
Intervention <sup>b</sup>		
Diagnostic assessment	1,605	16
Psychoeducation	4,176	42
Cognitive-behavioral therapy		
Behavioral intervention	4,497	45
Cognitive intervention	5,600	56
Relaxation strategies	2,778	28
Skills training	3,169	32
Interpersonal therapy	4,064	41
Narrative therapy	88	1
Missing data	692	7

<sup>a</sup> ATAPS, Access to Allied Psychological Services

<sup>b</sup> Multiple responses were permitted.

period in excess of two years post-disaster, resembled that of the crisis counseling programs (CCP) offered after Hurricane Katrina (14) and September 11 (15), with peaks for all three observed at around six to nine months and again about one year later. The exception to the latter was the September 11 CCP, and this is probably attributable to a change to a cost-based reimbursement at 12 months (15). These uptake patterns indicate that postdisaster counseling should be made available for extended periods (15), with shifting emphasis to meet the changing needs of high-risk groups (16). Although CCP and ATAPS differ in that CCP was a community outreach program delivered by trained paraprofessionals, these paraprofessionals also identified and re-



**Table 3**

Pre- and posttreatment outcome scores on available outcome measures for bushfire-affected consumers who received mental health care through Australia's ATAPS program, January 2009 to June 2011<sup>a</sup>

Measure	Description	N	Pre-treatment		Post-treatment		Mean difference	
			M	SD	M	SD	M	SD
Kessler-10	Patient-rated measure developed to assess nonspecific psychological distress; comprises 10 items that ask the patient about symptoms of depression and anxiety in the past 4 weeks. Each item is rated from 1 (none of the time) to 5 (all of the time), resulting in a total score that ranges from 10 to 50. A positive difference between pre- and posttreatment scores indicates improvement.	88	31.0	7.5	25.2	7.5	5.8	7.2***
Health of the Nation Outcome Scales	Clinician-rated measure of severity of symptoms of people with a mental illness; covers the previous 2 weeks and comprises 12 items that collectively cover the sorts of problems that may be experienced by people with a mental illness. Each item is rated from 0 (no problem) to 4 (very severe problem), resulting in a total score that can range from 0 to 48. A positive difference between pre- and post-treatment scores indicates improvement.	41	16.6	7.0	6.8	6.1	9.8	6.0***
Beck Depression Inventory	Patient-rated measure comprising 21 items that assess depressive symptoms over the previous 2 weeks. Each item has a set of 4 possible answers, ranging from 0 to 3, where 0 is low intensity ("I do not feel sad") and 3 is high intensity ("I am so sad or unhappy that I can't stand it") The lowest total score is 0; the highest is 63. A positive difference between pre- and posttreatment scores indicates improvement.	29	25.2	7.1	21.2	9.0	4.0	6.8**
Beck Anxiety Inventory	Patient-rated measure designed to measure anxiety. Consists of 21 items, each of which describes a common symptom of anxiety. Patients are asked to rate how much they have been bothered by each symptom over the past week on a 4-point scale ranging from 0 (not at all) to 3 (severely—"it bothered me a lot"). The total score can range from 0 to 63. A positive difference between pre- and posttreatment scores indicates improvement.	25	25.0	8.5	20.8	8.8	4.2	7.0**
Depression, Anxiety, and Stress Scales (DASS-21) <sup>b</sup>								
Anxiety	Patient-rated subscale of the DASS designed to measure anxiety; consists of 7 items, each of which consists of a statement relating to a symptom of anxiety. The patient is asked to consider how much each statement applied to him- or herself in the past week. Each item is scored from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time"). The raw subscale score on the DASS-21 ranges from 0 to 21 but is then doubled so that it can be clinically interpreted. A positive difference between pre- and posttreatment scores indicates improvement.	27	14.5	8.5	10.1	10.7	4.4	9.6*
Depression	Patient-rated subscale of the DASS designed to measure depression; consists of 7 items, each of which consists of a statement relating to a symptom of depression. The patient is asked to consider how much each statement applied to him or her in the past week. Each item is scored from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time"). The raw subscale score on the DASS-21 ranges from 0 to 21 but is then doubled so that it can be clinically interpreted. A positive difference between pre- and posttreatment scores indicates improvement.	25	19.5	11.6	14.2	12.4	5.3	12.7*
Stress	Patient-rated subscale of the DASS designed to measure stress; consists of 7 items, each of which consists of a statement relating to a symptom of stress. The patient is asked to consider how much each statement applied to him or her in the past week. Each item is scored from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time"). The raw subscale score on the DASS-21 ranges from 0 to 21 but is then doubled so that it can be clinically interpreted. A positive difference between pre- and posttreatment scores indicates improvement.	26	18.8	8.4	14.1	9.4	4.7	10.8*

<sup>a</sup> ATAPS, Access to Allied Psychological Services

<sup>b</sup> Each of the DASS-21 subscales is completed as one measure, and therefore the same consumers are represented on all three subscales.

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$

ferred 7% (or 46,500) of individuals for more intensive psychological intervention (likely to resemble that delivered via ATAPS) (17).

Furthermore, the brevity of services associated with the CCP approach is considered to be inconsistent with post-Katrina epidemiological research demonstrating high rates of disorders and clinically significant distress, suggesting a need for more intensive services (14). Efforts have been made to deliver unlimited enhanced services or specialized crisis counseling services that involve a team-based approach, a master's-level counselor (trained in solution-focused therapy and CBT), and a resource coordinator, and these efforts to improve responsiveness have produced promising results (18,19). However, the enhanced primary mental health care approach described in this article presents a viable alternative model. The model is appropriate on the grounds that of the 35% of Australians with mental health problems who seek help, a majority consult general practitioners (20), and most Hurricane Katrina survivors relied on the general medical sector for mental health care (5).

Although a diagnosis was not required for consumers to access the ATAPS bushfire service, most consumers had a diagnosable anxiety disorder or depressive disorder or both. Although this was not an epidemiological study, this finding confirms previous reports that depressive and anxiety disorders are the most common mental disorders in the aftermath of disasters (2,21).

The findings were comparable to routine ATAPS in terms of the characteristics of consumers and sessions (22) and the positive outcomes produced (22,23). However, bushfire-affected consumers were somewhat more likely to be males and to have an anxiety disorder and somewhat less likely to be indigenous and to have a depressive disorder. Bushfire ATAPS sessions were more likely to deliver psychoeducation, relaxation strategies, skills training, and interpersonal therapy but less likely to incur a fee payable by the consumer. Together, the interventions deliv-

ered and the positive outcomes produced by the bushfire ATAPS service provide support for the merit of CBT interventions, which have had successful trials among September 11 (24) and Hurricane Katrina survivors (3).

Some caution must be exercised in interpreting the findings because the evaluation had several limitations. Bushfire ATAPS uptake data were derived from our purpose-designed minimum data set. They are likely to be underestimated because bushfire referrals are unlikely to have been consistently identified in the minimum data set. This caveat was confirmed by the interview data, which revealed that some general practitioners were referring as needed to "routine" ATAPS without distinction. Nonetheless, the data available suggest that a substantial number of consumers received services.

Because the study specifically focused on one segment of specialist mental health services rather than the overall psychosocial response to the bushfires, conclusions about the overall need for mental health services and whether that need was met cannot be directly inferred. Adding to the preclusion of such conclusions was that treatment retention was not assessed and data to enable assessment of the sample's representativeness of the bushfire-affected population or the population more broadly were not available. Uniformity of data collection systems across the entire health sector and the ability to link these data as well as epidemiological studies of disaster-affected regions at various points both pre- and postdisaster may shed light on issues of demand and capacity (25).

Within the scope of our evaluation, we could not include a comparison group, nor would it have been ethical or logistical to do so in a postdisaster context. Lack of a comparison group limits the certainty that treatment was responsible for the improvements in consumer outcomes, although improvements in the absence of treatment are unlikely to match the magnitude of improvements shown here. The proportion (12%) of patients for whom pre- and posttreatment outcome data were available

was not optimal but is not uncommon for studies of this kind (26). In addition, the appropriateness of the outcome measures used in a disaster context is unknown.

## Conclusions

Despite these limitations, this evaluation advances the field in a number of important ways. It is novel in its focus on primary mental health care in a postdisaster context, and findings may be applicable in other disaster contexts internationally. Further, our evaluation corroborates previous findings regarding the most common mental disorders and the efficacy of evidence-based treatment postdisaster.

Notwithstanding the overall achievements of the ATAPS bushfire service, some challenges were experienced in terms of preexisting workforce issues and the desire for further flexibility of service guidelines. The evaluation provided valuable insights about processes that may be improved to optimize the ATAPS bushfire service, including communication, coordination, and structural systemic relationships between services.

Pivotal to the success of the enhanced ATAPS bushfire service were multiple interrelated factors. These included the opportunity to mobilize and enhance the existing infrastructure of the innovative ATAPS model in a disaster context, genuine desire by primary mental health care organizations and other stakeholders to help those in need, responsive modifications to service delivery guidelines, responsiveness of providers and of the Australian Government Department of Health and Ageing to the needs of general practice networks, and overall good collaboration among stakeholders.

The 2009 Victorian bushfires, among Australia's worst natural disasters devastating large parts of the community, put enormous pressure on existing service and support systems. Enhancement of the overall capacity of the primary mental health care system in response to the disaster enabled people with clinically diagnosable disorders and considerable psychological distress to

access free or low-cost treatment. Most important, this treatment produced positive outcomes for consumers in terms of recovery by reducing symptoms and improving psychosocial functioning.

### Acknowledgments and disclosures

This work was funded by the Australian Government Department of Health and Ageing.

The authors report no competing interests.

### References

- Victorian Bushfires January February 2009. Canberra, Australia, Commonwealth of Australia, 2011. Available at [www.disasterassist.gov.au/www/disasterassist/disasterassist.nsf/Page/RWPB4BAFD433135B9D5CA2577E500016034](http://www.disasterassist.gov.au/www/disasterassist/disasterassist.nsf/Page/RWPB4BAFD433135B9D5CA2577E500016034). Accessed June 6, 2011
- Galea S, Ahern J, Resnick IL, et al: Psychological sequelae of the September 11 terrorist attacks in New York City. *New England Journal of Medicine* 346:982–987, 2002
- Hamblen JL: Cognitive behavioral therapy for postdisaster distress: a community based treatment program for survivors of Hurricane Katrina. *Administration and Policy in Mental Health and Mental Health Services Research* 36:206–214, 2009
- Kessler RC, Galea S, Gruber MJ, et al: Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry* 13:374–384, 2008
- Wang PS, Gruber MJ, Powers RE, et al: Mental health service use among Hurricane Katrina survivors in the eight months after the disaster. *Psychiatric Services* 58:1403–1411, 2007
- Hickie I, Groom G: Primary care-led mental health service reform: an outline of the Better Outcomes in Mental Health Care initiative. *Australasian Psychiatry* 10:376–382, 2002
- Elhai JD, Ford JD: Utilization of mental health services after disasters; in *Mental Health and Disasters*. Edited by Neria Y, Galea S, Norris FH. New York, Cambridge University Press, 2009
- Kessler RC, Andrews G, Colpe LJ, et al: Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine* 32:959–976, 2002
- Wing JK, Beevor AS, Curtis RH, et al: Health of the Nation Outcome Scales (HoNOS): research and development. *British Journal of Psychiatry* 172:11–18, 1998
- Beck AT, Ward CH, Mendelson M, et al: An inventory for measuring depression. *Archives of General Psychiatry* 4:561–571, 1961
- Beck AT, Epstein N, Brown G, et al: An inventory for measuring clinical anxiety: psychometric properties. *Journal of Consulting and Clinical Psychology* 56:893–897, 1988
- Lovibond SH, Lovibond PF: *Manual for the Depression Anxiety Stress Scales*, 2nd ed. Sydney, Australia, Psychology Foundation, 1995
- Morley B, Pirkis J, Sanderson K, et al: Better outcomes in mental health care: the impact of different models of psychological service provision on consumer outcomes. *Australian and New Zealand Journal of Psychiatry* 41:142–149, 2007
- Norris FH, Bellamy ND: Evaluation of a national effort to reach Hurricane Katrina survivors and evacuees: the crisis counseling assistance and training program. *Administration and Policy in Mental Health and Mental Health Services Research* 36:165–175, 2009
- Donahue SA, Covell NH, Foster MJ, et al: Demographic characteristics of individuals who received Project Liberty crisis counseling services. *Psychiatric Services* 57:1261–1267, 2006
- Covell NH, Donahue SA, Allen G, et al: Use of Project Liberty counseling services over time by individuals in various risk categories. *Psychiatric Services* 57:1268–1270, 2006
- Rosen CS, Matthieu MM, Norris FH: Factors predicting crisis counselor referrals to other crisis counseling, disaster relief, and psychological services: a cross-site analysis of post-Katrina programs. *Administration and Policy in Mental Health and Mental Health Services Research* 36:186–194, 2009
- Donahue SA, Jackson CT, Shear KM, et al: Outcomes of enhanced counseling services provided to adults through Project Liberty. *Psychiatric Services* 57:1298–1303, 2006
- Jones K: Piloting a new model of crisis counseling: specialized crisis counseling services in Mississippi after Hurricane Katrina. *Administration and Policy in Mental Health and Mental Health Services Research* 36:195–205, 2009
- Australian Bureau of Statistics: *National Survey of Mental Health and Wellbeing: Summary of Results*. Canberra, Australian Bureau of Statistics, 2007
- Acierno R, Ruggiero KJ, Galea S, et al: Psychological sequelae resulting from the 2004 Florida hurricanes: implications for postdisaster interventions. *American Journal of Public Health* 97:S103–S108, 2007
- Bassilios B, Machlin A, Reifels L, et al: Evaluating the Access to Allied Psychological Services Component of the Better Outcomes in Mental Health Care Program—Seventeenth Interim Evaluation Report: Update on the Achievements of the ATAPS Projects. Melbourne, Australia, University of Melbourne, Melbourne School of Population Health, Centre for Health Policy, Programs, and Economics, 2011
- Pirkis J, Bassilios B, Fletcher J, et al: Clinical improvement after treatment provided through the Better Outcomes in Mental Health Care program: do some patients fare better than others? *Australian and New Zealand Journal of Psychiatry* 45:289–298, 2010
- Hamblen JL: Cognitive behavioral therapy for prolonged postdisaster distress. *Journal of Clinical Psychology* 62:1043–1052, 2006
- Siegel CE: Estimating capacity requirements for mental health services after a disaster has occurred: a call for new data. *American Journal of Public Health* 94:582–585, 2004
- Pirkis J, Headey A, Burgess P, et al: Remunerating private psychiatrists for participating in case conferences. *Australia and New Zealand Health Policy* 2:33, 2005