



**Mental Health
Australia**

Appendix

**The Economic Benefits for Australia
of Investment in Mental Health Reform**

Mental Health Australia and KPMG



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Appendix A: Mapping of reports and reforms

In preparing the recommendations in this report, senior stakeholders consulted and past reports reviewed consistently noted that a considerable body of work has already been undertaken in recommending mental health reform, not least of which by the National Mental Health Commission. As a result, Mental Health Australia and KPMG have focused on building the economic case for previously recommended reforms, rather than generating new recommendations. Table 1 identifies key recommendations from the reports listed in Table 2, and ‘maps’ the recommendations from this report to the recommendations from past reports.

Table 1: Key recommendations in past reports by system component, mapped against recommendations in this report

| System sub-component | Key recommendations in past reports | Recommendations in this report |
|--|--|---|
| Financing | | |
| Funding | <ul style="list-style-type: none">Streamline funding/payment modelsBetter track funding and expenditureMap funding and expenditure to outcomesFund evidence-based servicesShift funding from acute to primary and community care settings | <p>Recommendation 1.2: Trial adjustments to Workers’ Compensation insurance premiums according to workplaces’ mental health risk profile</p> <p>More broadly, each recommendation considers whether funding and expenditure on mental health achieves the best value for money, and identifies opportunities to allocate funding for resources in a way that optimises outcomes.</p> |
| Commissioning, funding models and funding levers | <ul style="list-style-type: none">Reconsider funding models | |
| Service delivery | | |
| Models of service delivery | <ul style="list-style-type: none">Implement person-centred, models of care that are consistent nationallyImprove access through care pathwaysImprove coordination of services, both within mental health / health and between the health and social services systems | <p>Recommendation 2.1: Adopt a Housing First model for young people aged 15 to 24 with a mental illness at risk of homelessness</p> <p>Recommendation 2.2: Provide community-based assertive outreach to people who have attempted suicide</p> <p>Recommendation 1.1: Work with employers to improve workplace mental health and wellbeing</p> |

| System sub-component | Key recommendations in past reports | Recommendations in this report |
|--|---|--|
| Services delivered | <ul style="list-style-type: none">Invest in promotion, prevention and early intervention, particularly for young peopleReduce suicide rates | <p>Recommendation 3.1: Provide community-based collaborative care to people with co-morbid physical and mental illnesses</p> <p>Recommendation 3.2: Invest in prevention and early intervention, and build the evidence base for promotion</p> <p>Recommendation 1.4: Provide supports to people with a severe mental illness to gain and maintain employment</p> |
| Service providers and market architecture | <ul style="list-style-type: none">Support PHNs to develop the right market architecture to meet local demand | |
| Medications and other goods | <ul style="list-style-type: none">Ensure that pharmacological therapies are appropriately applied | |
| Enablers | | |
| Workforce | <ul style="list-style-type: none">Develop a national workforce planConsider how employment policy can address consumer needs | <p>Recommendation 1.3 Trial a paid peer workforce to build the evidence base</p> <p>Recommendation 3.3: Use e-health as an enabler to deliver early intervention services</p> <p>Recommendation 2.3: Measure the impact of primary care on the use of secondary care by linking the new Primary Mental Health Care Minimum Data Set to wider health and social data sets</p> <p>In addition to the recommendations above, each sub-recommendation has considered the need for improved data collection, analysis, research and evaluation.</p> <p>Recommendation 3.1 also considers the workforce needed to deliver collaborative models of care.</p> <p>Recommendation 1.4 also contributes to the expansion of the workforce by providing people with a severe mental illness with an opportunity to contribute economically.</p> |
| Health information systems and technology | <ul style="list-style-type: none">Use technology to improve access to services | |
| Data collection and analysis | <ul style="list-style-type: none">Improve data collection and analysis | |
| Research, evaluation and quality improvement | <ul style="list-style-type: none">Invest in additional research to build the evidence baseAlign research funding to burden of disease / stakeholder fundingCommission independent evaluations of existing programs to build the evidence baseImplement clinical benchmarks and other mechanisms to ensure quality and safety of care | |
| Leadership and governance | | |
| System collaboration and integration | <ul style="list-style-type: none">Improve Commonwealth-state collaboration through PHNs | |

| System sub-component | Key recommendations in past reports | Recommendations in this report |
|--|--|---|
| | <ul style="list-style-type: none">• Improve the integration of care pathways within and across the health and social services system | Each sub-recommendation considers the roles and responsibilities of key players under the Next Steps section. |
| Roles and responsibilities | <ul style="list-style-type: none">• Review roles and responsibilities across Australia | More broadly, each sub-recommendation highlights opportunities to improve system collaboration and integration. |
| Performance monitoring, measurement and targets | <ul style="list-style-type: none">• Improve accountability for governments implementing inquiry / review recommendations | Recommendation 1.2 considers opportunities to harmonise mental health and discrimination legislation. |
| Legislation | <ul style="list-style-type: none">• Harmonise mental health and discrimination legislation | |
| Consumers | | |
| People with mental health issues, their carers and families | <ul style="list-style-type: none">• Implement person-centred models of care, with consumers as partners• Stratify populations according to risk | These recommendations have been formulated based on past reports, which have involved extensive consumer consultation, and consultation with senior stakeholders in the mental health sector. |
| Disadvantaged cohorts | <ul style="list-style-type: none">• Focus on delivering services to minority / disadvantaged cohorts, e.g. Aboriginal and Torres Strait Islanders | In particular, Recommendations 2 and 3 have been formulated around supporting particular cohorts in need (e.g. homeless youth; individuals with physical and mental health comorbidities) in a way that reflects a person-centred approach (e.g. community-based models of care). |

Source: KPMG; Sources in Table 2

Appendix B:

Economic analysis

Return on investment analysis

The methodology for this report differs from the traditional cost of illness approach as it does not seek to quantify all potential costs of mental health issues, but rather to identify the major direct returns available to employers or government through investing in mental health and wellbeing.

The specific methods used for modelling the return on investments for each intervention are presented below, however there were some overarching themes. The benefits of mental health reform were considered across three broad areas:

- Health sector savings – due to a reduction in health service utilisation, e.g. reduced inpatient days
- Employment savings – due to improved labour productivity and supply, sometimes referred to as presenteeism and absenteeism
- Justice sector savings – due to a reduction in justice service utilisation, e.g. reduced incarcerations.

Benefits were only included in the modelling when the evidence base and magnitude of impact were significant and allowed for quantification. For example, justice sector savings were included in the analysis of the youth homelessness intervention, as there is strong evidence that homelessness is associated with higher incarcerations and justice sector costs, but were excluded in all other analyses. This is not to suggest there are no potential justice sector savings from wider mental health reforms, but these are typically smaller in magnitude than the employment and health sector savings, and more difficult to quantify given the current evidence base. Similarly, health-related quality of life measures such as Quality Adjusted Life Years (QALYs) or Disability Adjusted Life Years (DALYs) were not included in the modelling, as the focus was on the direct return on investment when considered from the perspective of the employer or the government. Some interventions, such as those to reduce homelessness and suicide, can have life-long impacts. For these interventions, the savings were split into short and long-term savings, where short-term refers to 1-2 years and long-term refers to 3+ years.

Limitations

There are clear limitations to this analysis. First, the ROI calculations are based on range of secondary data. Where possible, the findings of meta-analyses were used to inform the parameters, however in some cases this was not possible and individual studies were relied upon. Similarly, where possible Australian evidence was used, but in some cases international evidence was relied upon. Inferring costs and benefits from international studies can be problematic, as the health system and social contexts are typically very different across countries. A number of steps were taken to help mitigate this issue:

- The overall evidence base of each intervention was assessed independently of the ROI analysis, with only appropriate interventions included in the set to be analysed economically
- Australian data on health costs and wages were used and applied to effect sizes found in the literature
- A broad range of Australian experts were consulted to ensure the models of interventions were applicable to the Australian context.

Second, the scope and perspective of the analysis was limited to direct employer and government costs that could be quantified with secondary data. This meant a narrow scope of analysis. Ideally primary individual-level data on mental health costs and outcomes across a variety of social jurisdictions (including employment, taxation, welfare and housing) would be publicly available to researchers, however this is not currently the case. The results presented here are indicative only.

Common data and sources

Some common parameters were used across the ROI analysis as listed in Table 2 below.

Table 2: Common parameters used in the ROI analysis

| Parameter | Value | Source |
|---------------------------------------|---------------------------------------|---|
| Average annual income (2016) | \$60,263 | 6302.0 - Average Weekly Earnings, Australia, May 2017 Series A84990050R |
| Exchange rates | AUS\$0.59/£1.00 AUS\$0.77/US\$1.00 | Based on historical average from https://www.rba.gov.au/statistics/frequency/exchange-rates.html |
| Inflation | Various | 6401.0 Consumer Price Index, Australia Series A2325846C |
| Cost of mental hospitalisation | | AIHW |
| Average lifetime earnings | \$600,000 | Based on previous KPMG analysis ¹ that calculated the present value of future earnings by age and gender, based on the probability of employment and average incomes. Updated to 2016 using the Wage Price Index 6345.0 Wage Price Index, Australia Series A2705194A and averaged across age and gender. |

Recommendation 1: Work place reforms

Recommendation 1.1: Work with employers to improve workplace mental health and wellbeing

Workplace interventions considered the costs of both employee time and any training costs, while the benefits considered were on absenteeism and presenteeism. No healthcare cost savings, or wider social savings were included in the estimation of benefits from workplace reforms, as the focus was on returns directly to the workplace.

Job control

Typical job control programs in the literature ranged from \$317 to \$473 per employee, depending on number of meetings, training and/or monitoring costs.² The average of \$395 was adopted, which is equivalent to bimonthly meetings for two employees (12 hours of time at the average hourly rate). Many of the actions associated with job control e.g. (monitoring satisfaction and meetings) could become 'business-as-usual', which would reduce the incremental costs of these interventions over time.

The absenteeism and presenteeism benefits from job control were derived from a systematic review³ and a meta-analysis,⁴ and an Australian analysis that used evidence from the literature and data from the Household, Income and Labour Dynamics in Australia (HILDA) survey data.⁵ The meta-analysis found a small but significant impact of job control on absenteeism, assumed to be 0.6 days in line with the Australian study, and valued at \$151 under current wage rates. Presenteeism savings

were assumed to be \$377 based on the relative effect sizes results from the meta-analyses, for total benefits of \$527 and a ROI of 1.3.

CBT-based resilience training/stress management

CBT-resilience training costs vary dramatically depending on the model of care (e.g. group or individual). United Kingdom literature suggests costs of £1,235⁶ to £2,157⁷ per employee for an intensive, workplace model of care with clinical and administrative staff. This equates to between \$2,000 and \$4,000 using an exchange rate conversion of 1.69. Australian-based literature suggests less-intensive models (e.g. group sessions) with lower costs, of between \$74 and \$679 per employee. We assume a cost of \$1,172 per employee, based on an 8 visit course of individual treatment, costed using the Australian MBS item 80010 clinical psychologist fee of \$146.45.

Absenteeism and presenteeism benefits are derived from a meta-analyses which suggested an effect size of 1.16 from intensive CBT programs.⁸ This was translated to Australian impacts using an analysis of HILDA data that showed impacts of 0.038 absent days and 0.9% reduced presenteeism per 1 unit improvement in the SF-36-derived mental health index,⁹ and a standard deviation observed in the mental health index in HILDA of 17.¹⁰ This resulted in a reduction of absenteeism of 0.75 days and presenteeism of 18%, which translated to cost savings of \$188 and \$1,769 respectively, based on average wage rates and presenteeism costs from an Australian study.¹¹ Combined, costs per employee were estimated at \$1,172, benefits at \$1,957 and an ROI of 1.7.

Health screening

Health screening costs of \$50 per employee are assumed based on a United Kingdom example which costed screening at €30.90.¹² This covers both screening costs and employee time costs. The screening is assumed to uncover 10 per cent at risk (a similar Australian example used between 5 and 20 per cent¹³), who then receive CBT treatment as per the previous intervention at cost of \$1,172 per person treated and \$117 per person screened. The CBT treatment is assumed to have the same impact on presenteeism (\$1,769 per person treated or \$177 per person screened) but deliver improved reductions in absenteeism of 6.2 days (\$1,566 per person treated or \$156 per person screened) based on improved outcomes in the literature.¹⁴ Combined, the costs of the screening sum to \$167 per person screened with benefits of \$334, for a ROI of 2.0.

Worksite physical activity

Physical intervention costs were based on a 12 week program with 2 one-hour sessions per week for 10 employees. Instructor and program costs were assumed to be \$100/hour. Employee time for classes was not considered as these were assumed to run outside of work hours as per a previous Australian example,¹⁵ however employee time of 4 hours in total was costed for the pre and post program sessions. Combined, these sum to a total of \$412 per employee.

Physical intervention programs were assumed to reduce absenteeism by 1.8 days generating savings of \$452, based on a meta-analyses which highlighted an effect size of 0.19 of a physical activity program on work attendance,¹⁶ and international literature which found larger gains of up to 3.7 days¹⁷. The same meta-analysis highlighted a medium effect size on job stress of 0.33,¹⁸ similar to that found for job control, so the same presenteeism savings of \$377 are assumed. Combined, benefits sum to \$828, which generate an ROI of 2.0.

PST-based return to work programs

PST costs were based on an economic evaluation from a 6 session PST-based program in the Netherlands that was costed at €341.24¹⁹ or approximately \$510 per employee at typical exchange rates. By comparison, 6 return to work sessions valued at the Australian allied healthcare MBS item 10956 or 10958 rate of \$62.25 would cost \$373.50 per employee, but also require some amount of administration and coordination costs.

The program is assumed to improve return to work and reduce absenteeism savings by 9.5 days based on the aforementioned economic evaluation. By comparison, a Cochrane review reported a much higher impact of 17.7 days,²⁰ while another analysis suggested improvements of 4.2 days from

a cheaper and less intensive intervention.²¹ The absenteeism savings are worth \$2,385 at current wages and deliver a ROI of 4.7.

Recommendation 1.2: Trial adjustments to Workers' Compensation insurance premiums according to workplaces' mental health risk profile

No specific ROI was calculated for this intervention, however a scenario (see Table 3) of moving 5 per cent of individuals in each of mild, moderate and severe illness categories into a lower severity category was considered based on KPMG's analysis of an Australian study into the absenteeism and presenteeism costs of mental illness.²²

Table 3: Scenario comparing baseline and 5 per cent shift of individuals into lower severity categories

| Severity of mental illness | Marginal cost burden of mental illness (\$/employee) | Baseline | 5 per cent shift | | |
|----------------------------|--|-----------------|-------------------------|-----------------|-------------------------|
| | | Employee Counts | Total cost impact (\$m) | Employee Counts | Total cost impact (\$m) |
| None | \$0 | 8,068,998 | \$0 | 8,213,384 | \$0 |
| Mild | \$2,631 | 2,887,727 | \$7,597 | 2,778,991 | \$7,311 |
| Moderate | \$5,503 | 713,019 | \$3,924 | 684,498 | \$3,767 |
| Moderately severe | \$3,747 | 142,604 | \$534 | 139,039 | \$521 |
| Severe | \$5,652 | 71,302 | \$403 | 67,737 | \$383 |
| Total | | | \$12,458 | | \$11,981 |

Recommendation 1.3: Trial a paid peer workforce to build the evidence base

No specific ROI was calculated for a paid peer workforce as the evidence base still needs to be developed, however a scenario of 1,000 new peer workers was considered based on:

- Average weekly wages excluding superannuation for a certificate IV peer worker were obtained from the Australian Government's Job Outlook, at \$1,021.²³ equating to an average salary package including superannuation of approximately \$60,000 per annum.²⁴ There are likely to be further costs including training and coordination costs. A 2007 Australian pilot costed a peer workforce program (including training and administration) that delivered 310 hours of support over 3 months at \$19,850;²⁵ this converts to roughly \$100,000 for a year in 2016 prices (updated using the ABS CPI data). A NSW government initiative for \$2.7 million for 30 peer workers, suggesting costs of \$90,000 per worker.²⁶ Combined, this suggests typical costs of a peer worker program of \$90,000-\$100,000 per work.
- Return on investment of \$3.50 per every dollar invested, based on an Australian pilot that reported a social return on investment of \$3.27 for every dollar invested, and a United Kingdom study that reported a return on investment of \$3.81 for every dollar invested, based on inpatient savings.²⁷

Rolling out 1,000 peer workers would cost \$100 million but deliver \$350 million in savings

Recommendation 2: Minimise avoidable emergency department presentations and hospitalisations

Recommendation 2.1: Adopt a Housing First model for young people aged 15 to 24 with a mental illness at risk of homelessness

Indicative costs of \$34,500 per annum per person for an intensive homelessness intervention are sourced from a similar NSW trial,²⁸ but can vary largely depending on the capital outlay costs. The benefits of reduced homelessness that are considered are:

- Reduced mental health inpatient hospitalisations of 49.4 days per person year based on the NSW trial data,²⁹ costed at \$1,956 per day³⁰ based on AIHW child and youth expenditure costs
- Justice cost savings of \$8,242 per person per year³¹
- Life-time employment benefits based on the impact of homelessness on employment as described above,³² and discounted lifetime earnings of \$600,000.³³

The resulting return on investment suggest a short term gain of \$3.00 for every dollar invested, rising to \$9.30 once longer term employment outcomes are considered.

Recommendation 2.2: Adopt a Housing First model for young people aged 15 to 24 with a mental illness at risk of homelessness

Indicative costs of \$4,000 per person for an assertive outreach intervention are assumed. The benefits from suicide reduction are based on:

- A recent Australian study that found a population preventable fraction for such interventions of 1.1 per cent³⁴
- Medical cost savings derived from an Australian study into the economic costs of suicide³⁵
- Long-term benefits from discounted lifetime earnings of \$600,000.³⁶

Combined, these figures suggest a long-term benefit of \$6,600 for person treated. The resulting return on investment suggest short-term costs that have a long-term gain of \$1.80 for every dollar invested. There are many other economic and social benefits from reducing suicide that are not captured in this analysis.

Recommendation 3: Minimise avoidable emergency department presentations and hospitalisations

Recommendation 3.1: Provide community-based collaborative care to people with co-morbid physical and mental illnesses.

Collaborative care

The average additional costs of collaborative care versus standard care from a systematic review of wide range of international studies was US\$954 per patient,³⁷ or around AUS\$1,269 per patient.

A recent meta-analysis into the use of collaborative care for patients with chronic conditions and comorbid depressive disorder highlighted improved outcomes for depression with an effect size of 0.35. As per Recommendation 1.1, this was translated to Australian impacts using an analysis of HILDA data that showed impacts of 0.038 absent days and 0.9% reduced presenteeism per 1 unit improvement in the SF-36-derived mental health index.³⁸ Given a standard deviation observed in the mental health index in HILDA of 17,³⁹ this resulted in a reduction of absenteeism of 0.23 days and presenteeism of 5%, which translated to cost savings of \$57 and \$534 respectively, based on average wage rates and presenteeism costs from an Australian study.⁴⁰ However this does not include any of the benefits from improved outcomes across the non-mental illness chronic diseases including epilepsy, diabetes, arthritis, cancer, and cardiovascular disease.⁴¹ An RCT that specifically investigated the absenteeism impacts of collaborative care found a reduction of 13 days across a 12 month period,⁴² which translates to a benefit of \$3,213 using current Australian average wages and an ROI of 3.0. This is consistent with a modelling analysis of collaborative care which found a similar ROI.⁴³ While there is uncertainty around the specific costs and benefits of collaborative care, a systematic review of the economics of collaborative care for management of depressive disorders in the community noted that the overall evidence suggests that collaborative care provides good economic value.⁴⁴

Recommendation 3.2: Invest in prevention and early intervention, and build the evidence base for promotion

CBT as an early intervention

A standard CBT adolescent intervention consists of 10 group (of three) sessions, for a total cost per participant of around \$488 based on the Australian MBS item 80010 clinical psychologist fee of \$146.45. The literature highlights strong short term success rates from such interventions, with CBT doubling the chance of remission from mental illness compared to a waiting list or attention controls, with numbers needed to treat of 3.0, which means remission for one in every three people treated.⁴⁵ An analysis of the costs of adolescent mental illness highlighted average 2009 costs of \$1,410,⁴⁶ which inflates to \$1,664 today, for an expected saving of \$555 per person treated. While the literature suggests that intervening at the first sign of depression can mitigate recurrent episodes,⁴⁷ the long-term benefits of early CBT interventions are more difficult to estimate as the evidence base over the life course is weak. However if just 1 per cent of the long-term costs associated with mental illness were reduced via intervention, the long-term return on investment would be \$9.10 for every dollar invested.

Early intervention for psychosis

The analysis for early intervention costs and benefits for psychosis were based on an assertive community care model described in a UK study.⁴⁸ Non-inpatient costs were inflated and converted to Australian 2016 dollars, and totalled \$150 per patient for community outreach. The evaluation also noted that the intervention group had initial inpatient admissions of an average of 8.3 days more than the control group. These were valued at \$1,029 per day based on psychiatric bed day costs from the AIHW.⁴⁹ In total, the costs of the intervention summed to \$8,541. The benefits of the intervention were estimated in a similar fashion: non-inpatient savings were inflated and converted to Australian 2016 dollars, and totalled \$1,576. Inpatient admissions were reduced by 19.4 days in the intervention. Combined these totalled \$21,539 in savings, for a ROI of 2.5. An Australian study highlighted longer term cost savings of almost \$9,000 per annum,⁵⁰ which results in longer term benefits of \$74,437 and an ROI of 8.6. The same study also highlighted that those who had the early intervention were twice as likely to be employed as the control group, suggesting the ROI could be even higher.

Recommendation 3.3: Invest in e-health

The costs of e-health interventions vary, with a systematic review finding that in some cases these interventions are cheaper than standard care. On average however over a number of different studies, the cost per participant was \$561,⁵¹ although it would be expected that this cost would diminish as the marginal cost of treating an extra person trends to zero. Nonetheless, even with a relatively high assumed average cost, e-health interventions provide a large return on investment. A meta-analysis of such interventions found fixed effect size of 0.27 on depression and 0.96 on anxiety, suggesting that e-health interventions can significantly improve mental health.⁵² Another systematic reviewer found broad equivalence with face to face CBT.⁵³ Given these results in the literature, it is assumed that e-health interventions can deliver 60 per cent of the expected employment savings of \$1,769 from Recommendation 1.1. This delivers a short-term return of \$1.60 for every dollar invested. This excludes any benefits from reduced use of other health services, where the evidence is mixed.

Mental health measures and standard effect sizes

There are many standard measures of mental health, including the Mental Component Summary (MCS) and the Mental Health Inventory (MHI-5) within the SF-36 health questionnaire, and the Kessler Psychological Distress Scale. For analyses of HILDA data, the MHI-5 is a common measure, with scores ranging from 0 to 100 with the bottom quintile (a score of less than 60) indicating poor mental health,⁵⁴ and a standard deviation around 10-20 points.⁵⁵ In addition, some research, such as Frijters et al (2014)⁵⁶ which we cite here, derives its own index, where 'a standard deviation increase in the index is estimated to reduce the probability of depression or anxiety by 8.5 percentage points (relative to mean of 11.1 %).

KPMG-CGE Model

Overview

KPMG-CGE is KPMG's proprietary dynamic computable general equilibrium model of the Australian economy that has been specifically designed for policy analysis. KPMG-CGE is a well-established model that has been used to model a wide range of policies and scenarios.

In basic form, the KPMG-CGE distinguishes 114 sectors and commodities, based on the 2013/14 input-output tables published by the Australian Bureau of Statistics (ABS, 2017). Primary factors are distinguished by 114 types of capital (one type per industry), nine occupations, two types of land, and natural resource endowments (one per industry). For energy policy analysis, the 114 input-output sectors identified by the ABS are disaggregated to give the energy-related sectors identified in the shaded cells of Table 1 in Section 1.

KPMG-CGE models the economy as a system of interrelated economic agents operating in competitive markets. Economic theory specifies the behaviour and market interactions of economic agents, including consumers, investors, producers and governments. These agents operate in domestic and foreign goods markets, and capital and labour markets. Defining features of the theoretical structure of KPMG-CGE include:

- Optimising behaviour by households and businesses in the context of competitive markets with explicit resource constraints and budget constraints;
- The price mechanism operates to clear markets for goods and primary factors; and
- At the margin, costs are equal to revenues in all economic activities.

Labour market

The supply of labour is determined by a labour-leisure trade-off that allows workers in each occupation to respond to changes in after-tax wage rates thus determining the hours of work they offer to the labour market. The overall supply of labour is normalised on working-age population.

Household behaviour

Household consumption decisions are determined by a LES function (Stone, 1954) that distinguishes between subsistence (necessity) and discretionary (luxury) consumption. The household consumption bundle includes the three special energy-related commodities identified above: household consumption of electricity, heating and transport. These are separately identified in order to properly capture the effects of residential energy efficiency changes, that is, to properly allow for changes in the energy intensity of household consumption separately from other uses. Total household spending moves with household disposable income.

Investment behaviour

Investment behaviour is industry specific and is positively related to the expected rate of return on capital. This rate takes into account company taxation, a variety of capital allowances and the structure of the imputation system.

Government sector

KPMG-CGE's theoretical structure and database facilitates detailed modelling of government fiscal accounts and balance sheets, including the accumulation of public assets and liabilities. These accounts represent total government activity (Commonwealth, state and local) in composite form. Detailed government revenue flows are modelled, including all major direct and indirect taxes, and income from government enterprises. Government spending includes public sector consumption, investment and the payment of various types of transfers (such as pensions and unemployment benefits).

Calibration

The key data inputs used by KPMG-CGE are input-output tables. The tables quantify the flows of goods and services from producers to various uses: intermediate inputs to production, inputs to capital creation, household consumption, government consumption and exports. The input-output tables also quantify the flows associated with primary factor inputs: labour, capital, land and natural

resources. In KPMG-CGE, the data inputs are combined with the model's theoretical structure to quantify behavioural responses, including:

- price and wage adjustments driven by resource constraints;
- tax and government spending adjustments driven by budget constraints;
- input substitution possibilities in production; and
- responses by consumers, investors, foreigners and other agents to changes in prices, taxes, technical changes and taste changes.

Simulation design

KPMG-CGE has a flexible simulation design: it can be run in comparative-static or dynamic mode. The dynamic mechanisms in KPMG-CGE relate to the accumulation of physical capital, foreign liabilities and government debt. The dynamic properties of KPMG-CGE provide for gradual adjustment of industry investment to perturbations in rates of return. Similarly, the labour market gradually returns to equilibrium after a perturbation to the unemployment rate.

In dynamic mode, KPMG-CGE is run twice; first, to create a baseline (or business-as-usual) representation of the economy; second, to create a policy scenario that includes the economic shock of interest (e.g., faster energy efficiency improvements). The baseline scenario is designed to be a plausible projection of how the economy will evolve in the short run. In the long run, the baseline scenario evolves to a balanced growth path consistent with the long-run properties of well-specified dynamic macroeconomic models (McCandless, 2008). The policy scenario comprises the baseline scenario plus the economic shock of interest. The difference between the value of a particular variable in the policy scenario and its value in the baseline scenario quantifies the impact of the economic shock of interest on that variable.

Appendix C:

Additional research on workplace mental health interventions

A large range of interventions were considered for inclusion in Recommendation 1.1. Table 4 below outlines some of the major interventions outlined in the literature, and indicates whether they have been included in the economic analysis prepared in this report.

Table 4: Key workplace mental health and wellbeing interventions and reasons for inclusion or exclusion

| Level | Intervention | Included in economic analysis? |
|------------------|--|---|
| Primary | Job design: Job control | Yes |
| | Job design: Encouraging worker participation | No – Unable to be costed within scope of report |
| | Job design: Flexible working conditions | No – Unable to be costed within scope of report |
| | Job design: Other interventions ⁵⁷ | No – Unable to be costed within scope of report |
| | Management: Manager and leadership training | Yes |
| | Management: Team/workgroup support | No – Unable to be costed within scope of report |
| | Management: Support around change management | No – Unable to be costed within scope of report |
| | Organisation: Organisational changes, organisational support, reward and recognition, organisational justice, organisational climate, physical environment | No – Unable to be costed within scope of report |
| | Promotion: Workplace mental health and wellbeing promotion | No – A 2016 systematic review found that the evidence base on this intervention was mixed ⁵⁸ |
| Secondary | CBT-based resilience training / stress management | Yes |
| | PST-based resilience training for high risk occupations | No – evidence base is insufficient to determine whether this is an effective intervention |

| Level | Intervention | Included in economic analysis? |
|-----------------|---|--|
| | Wellbeing or health screening checks | Yes |
| | Mental health first aid and education | No – Initial analysis indicated a low ROI |
| | Worksite physical health activity | Yes |
| | Coaching and mentoring | No – A 2014 review of the literature found that coaching and mentoring can be effective, but the quality of the evidence is relatively low ⁵⁹ |
| | Debriefing | No – The evidence base identifies that this intervention can cause harm ⁶⁰ |
| Tertiary | PST-based return to work programs | Yes |
| | Non-PST based supported return to work (e.g. CBT, non-clinical interventions) | No – evidence base has not identified that this is an effective intervention |
| | Exposure therapy for PTSD and established anxiety disorders | Yes |
| | Medication / pharmacotherapy | No – Workplaces are not able to deliver this intervention |

Source: KPMG, summarised from: SafeWork NSW (2017), *Mentally Healthy Workplaces in NSW Discussion Paper*; University of Tasmania (2017), *An Integrated Approach to Workplace Mental Health: Nine priorities for implementation in Australia*; Harvey et al. for the National Mental Health Commission and the Mentally Healthy Workplace Alliance (2014), *Developing a Mentally Healthy Workplace: A Review of the Literature*; and sources listed in Appendix A.

Appendix D: Literature review

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|--|-------------------------------|--|--|
| Recommendation 1.1: Work with employers to improve workplace mental health | | | | |
| Job control | Williams-Whitt, K., White, M.I., Wagner, S.L., Schult, I.Z., Koehn, C., Dionne, C.E., Koehoorn, M., Harder, H., Pasca, R., Warje, O., Hsu, V., McGuire, L., Schulz, W., Kube, D., Hook, A., and Wright, M.D. (2015) 'Job demand and control interventions: A stakeholder-centred best-evidence synthesis of systematic reviews on workplace disability', in <i>International Journal of Occupational and Environmental Medicine</i> 6:2, pp 61-78. | I Systematic review synthesis | N/A | <ul style="list-style-type: none"> Multimodal job demand interventions (including multimodal job stress reduction) are effective in reducing absenteeism and generate benefits for both individuals and organisations. Job control has positive effects on absenteeism. Sickness absence is favourably associated with more participatory interventions and interventions targeting psychosocial work environments. |
| Resilience training and stress reduction programs | Joyce, S., Modini, M., Christensen, H., Maykletun, A., Bryant, R., Mitchell, P.B., and Harvey, S.B. (2016) 'Workplace interventions for common mental disorders: A systematic review', in <i>Psychological Medicine</i> 46, pp 683-697. | I Systematic review | N/A | <ul style="list-style-type: none"> CBT-based stress management interventions produce individual benefits in terms of reduced stress and symptoms. However, this does not appear to translate to notable improvements in absenteeism. Return-to-work programs which incorporate CBT and problem-focused strategies have a positive effect on organisational and individual outcomes. |
| | Richardson, K.M., and Rothstein, H.R. (2008) Effects of occupational stress management intervention programs: a | I Meta-analysis | N/A (36 experimental studies were included, | <ul style="list-style-type: none"> Positive: Stress management programs were associated with favourable medium to large effect sizes and cognitive-behavioural stress |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|--|--|
| | meta-analysis. <i>J Occup Health Psychol</i> 13, pp 69-93. | | representing 55 interventions. Total sample size was 2,847) | management programs consistently produced the largest effects (mainly on psychological outcomes) in occupational settings. |
| | Bhui, K.S., Dinos, S., Stansfeld, S.A., and White, P.D. (2012) A synthesis of the evidence for managing stress at work: A review of the reviews reporting on anxiety, depression, and absenteeism. <i>Journal of Environmental and Public Health</i> 12. | I Meta-analysis | N/A (23 systematic reviews included 499 primary studies; there were 11 meta-analyses and 12 narrative reviews) | <ul style="list-style-type: none"> Mixed: Meta-analytic studies found a greater effect size of individual interventions on individual outcomes. Organisational interventions showed mixed evidence of benefit. Organisational programs for physical activity showed a reduction in absenteeism. Specifically, cognitive-behavioural programs produced larger effects at the individual level compared with other interventions. Some interventions appeared to lead to deterioration in mental health and absenteeism outcomes. Individual interventions (like CBT) improve individuals' mental health. Physical activity as an organisational intervention reduces absenteeism. |
| | Vuori, J, Toppinen-Tanner, S., and Mutanen, P. (2012) Effects of resource-building group intervention on career management and mental health in work organizations: randomized controlled field trial. <i>J Appl Psychol</i> 97:2, pp 273-86. | II RCT (field trial) | <ul style="list-style-type: none"> Cohort: Employees Cohort size: n=718 eligible individuals returned a questionnaire in 17 organizations and became voluntary participants randomised to: | <ul style="list-style-type: none"> Positive: Significantly decreased depressive symptoms and intentions to retire early at seven month follow-up of the intervention group. Younger employees and employees with elevated levels of depression or exhaustion at the beginning of the intervention benefited most. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | | | <ul style="list-style-type: none"> - Intervention group (n=369) - invited to group intervention workshops as part of an in-company training program the provided employees with better preparedness to manage their own careers - Comparison group (n=349) - received printed information about career and health-related issues | |
| | Bond, F.W., and Bunce, D. (2000) Mediators of change in emotion-focused and problem-focused worksite stress management interventions. <i>J Occup Health Psychol</i> 5, pp 156-63. | II RCT | <ul style="list-style-type: none"> • Cohort: volunteers in a media organization (19-58 year olds) • Cohort size: n=90 randomly allocated to: • Acceptance and Commitment Therapy (ACT, n=30) group that sought to enhance people's ability to cope with work-related strain • Innovation Promotion Program (IPP, n=30) that helped individuals to identify and then | <ul style="list-style-type: none"> • Mixed: Following emotion-focused and problem-focused worksite stress management interventions, improvements in mental health and work-related variables were found (including on: General Health Questionnaire results, Beck Depression Inventory, and Propensity to innovate). The interventions however did not have a significant positive effect on work motivation or job stress. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|---|-----------------------|--|---|
| | | | <p>innovatively change causes of occupational strain</p> <ul style="list-style-type: none"> Waitlist control group (n=30) | |
| | <p>Business in the Community. (2005) London Underground. Stress Reduction Programme, BITC, London. http://www.bitc.org.uk/resources/case_studies/afe_hw_05_londonu.html , accessed 3 October 2017.</p> | IV Program Evaluation | <ul style="list-style-type: none"> Cohort: London Underground employees Cohort size: n=13,000 participating in a stress reduction program | <ul style="list-style-type: none"> Positive: Resulting from a stress reduction program, absenteeism costs reduced by €705,000 in the first two years (with the savings being eight times greater than the cost of the program). Improved productivity and some positive healthy lifestyle changes were also observed. |
| Worksite physical activity programs | <p>Chu, A.H.Y., Koh, D., Moy, F.M., Muller-Riemenschneider, F. (2014) 'Do workplace physical activity interventions improve mental health outcomes?', in <i>Occupational Medicine</i> 64:4, pp 235-245.</p> | I Systematic review | N/A | |
| | <p>Brand, R., Schlicht, W., Grossman, K., and Duhnsen, R. (2006) Effects of a physical exercise intervention on employees' perceptions quality of life: a randomized controlled trial. <i>Sozial-und Praventivmedizin</i>, 51:1, pp 14-23.</p> | II RCT | <ul style="list-style-type: none"> Cohort: Employees Cohort Size: n=110 randomly allocated to: <ul style="list-style-type: none"> Intervention (n=52) exercised 13 weeks, at leisure time, in off-worksite training facilities Control group (n=58) | <ul style="list-style-type: none"> Positive short term, mixed long-term: Significant training effects resulted for overall perception of quality of life, and for psychological and physical health sub-domains. At follow-up, elevated psychological scores held steady only for those who continued to exercise on their own. |
| | <p>Atlantis, E., Chow, C.M., Kirby, A., and Singh, M.F. (2004) An effective exercise-</p> | II RCT | <ul style="list-style-type: none"> Cohort: Employees from a single work site | <ul style="list-style-type: none"> Positive: The following variable scales significantly improved for the treatment |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|----------------------------|---|---|--|--|
| | based intervention for improving mental health and quality of life measures: a randomized controlled trial. <i>Preventive medicine</i> ; 39, pp 424-434. | | <ul style="list-style-type: none"> Cohort size: n=44 <ul style="list-style-type: none"> Treatment group (n=20) - 24-week aerobic and weight-training exercise plus behaviour modification Wait-list control group (n=24) | group compared to wait-list controls after 24 weeks: Mental Health (P = 0.005), Vitality (P < 0.001), General Health (P = 0.009), Bodily Pain (P = 0.005), Physical Functioning (P = 0.004), Depression (P = 0.048), and Stress (P = 0.036). |
| | Berkel, J.V., Proper, K.I., Dam, A.V., Boot, A.V., Bongers, P.M., and Beek, A.J.V.D. (2013) An exploratory study of associations of physical activity with mental health and work engagement. <i>BMC Public Health</i> . 13, pp 558. | IV Exploratory Study conducted as part of a RCT | <ul style="list-style-type: none"> Cohort: Employees of two research institutes Cohort size: n=257 participants <ul style="list-style-type: none"> 100 of which had objective measurement of physical activity through random assignment of wearing an accelerometer | <ul style="list-style-type: none"> Negative: This study found no association between moderate to vigorous physical activity (MVPA) and mental health (MH), nor between MVPA and work engagement (WE) and therefore found no evidence for the beneficial effects of MVPA on positive aspects of MH (i.e. well-being). |
| | Bernaards, C.M., Jans, M.P., van den Heuvel, S.G., Hendriksen, I.J., Houtman, I.L., and Bongers, P.M. (2006) 'Can strenuous leisure time physical activity prevent psychological complaints in a working population?' in <i>Occupational and Environmental Medicine</i> 63, pp 10-16. | IV Longitudinal Study | <p>Cohort: Workers from 34 companies located throughout the Netherlands</p> <p>Cohort size: n=1,747 participants</p> | <ul style="list-style-type: none"> Positive: In workers with a sedentary job, strenuous leisure time physical activity (1-2 times per week) was significantly associated with a reduced risk of future depression and emotional exhaustion and further associated with a lower risk of long-term absenteeism. |
| Mental health first | Hadlaczky, G., Hokby, S., Mkrtchian, A., Carli, V., and Wasserman, D. (2014) 'Mental Health First Aid is an effective public health intervention for improving | I Meta-analysis | N/A | <ul style="list-style-type: none"> Positive: Standardized effect sizes were calculated for three different outcome measures: change in knowledge, attitudes, and helping behaviours. The |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|--|
| aid and education | knowledge, attitudes and behaviour: A meta-analysis', in <i>International Review of Psychiatry</i> 26:4, pp 467-75. | | | results of the meta-analysis for these outcomes yielded a mean effect size of Glass's $\Delta = 0.56$ (95% CI = 0.38 - 0.74; $p < 0.001$), 0.28 (95% CI = 0.22 - 0.35; $p < 0.001$) and 0.25 (95% CI = 0.12 - 0.38; $p < 0.001$), respectively. Results were homogenous, and moderator analyses suggested no systematic bias or differences in results related to study design (with or without control group) or 'publication quality' (journal impact factor). The results demonstrate that MHFA increases participants' knowledge regarding mental health, decreases their negative attitudes, and increases supportive behaviours toward individuals with mental health problems. |
| | Kitchener, B.A., and Jorm, A.F. (2004) Mental health first aid training in a workplace setting: A randomized controlled trial (ISRCTN13249129). <i>BMC Psychiatry</i> , 23. | II RCT | <ul style="list-style-type: none"> Cohort: Canberra-based employees of two Australian government departments: Health and Ageing, and Family and Community Services Cohort size: n=301, randomised to: <ul style="list-style-type: none"> Mental Health First Aid training course (n=128) Waiting list (n=155) | <ul style="list-style-type: none"> Positive: Benefits have been found to include: greater confidence in providing help to others, greater likelihood of advising people to seek professional help, improved concordance with health professionals about treatments, decreased stigmatizing attitudes, and an improvement in the mental health of the participants themselves. |
| | Morrissey, H., Moss, S., Alexi, N., and Ball, P. (2017) Do Mental Health First Aid™ courses enhance knowledge? <i>The</i> | IV Educational Audit | <ul style="list-style-type: none"> Cohort: tertiary students | <ul style="list-style-type: none"> Positive: Analysis of the 162 responses found that the Mental Health First Aid™ |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|--|----------------------|---|--|
| | <i>Journal of Mental Health Training, Education and Practice</i> . 12:2, pp 69-76. | | <ul style="list-style-type: none"> Cohort size: n=162 | courses significantly improve knowledge. |
| PST-based return-to-work programs | Arends, I., Bruinvels, D.J., Rebergen, D.S., Nieuwenhuijsen, K., Madan, I., Neumeyer-Gromen, A., Bültmann, U., Verbeek, J.H., (2012), 'Improving return to work in adults suffering from symptoms of distress', in <i>The Cochrane Database Of Systematic Reviews</i> 12. | I Systematic review | N/A | <ul style="list-style-type: none"> Problem solving therapy (PST) significantly enhanced partial RTW at one-year follow-up compared to non-guideline based care but did not significantly enhance time to full RTW at one-year follow-up. PST significantly reduced time until partial RTW at one-year follow-up compared to non-guideline based care (MD -17.00, 95% CI -26.48 to -7.52) (one study with 192 participants clustered among 33 treatment providers included in the analysis), but we found moderate-quality evidence of no significant effect on reducing days until full RTW at one-year follow-up (MD -17.73, 95% CI -37.35 to 1.90) (two studies with 342 participants included in the analysis). |
| | Van der Klink, J.J.L., Blonk, R.W.B., Schene, A.H., and van Dijk, F.J.H. (2003) 'Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design' in <i>Occupational and Environmental Medicine</i> 60:6, pp 429–37. | II RCT | <ul style="list-style-type: none"> Cohort: Patients had to be on their first sickness leave because of an adjustment disorder. Cohort size: n=192, allocated to: <ul style="list-style-type: none"> Intervention (n=109) Usual care (n=83) | <ul style="list-style-type: none"> Positive: At three month follow up that significantly more patients in the intervention group had returned to work compared with the control group and that sickness leave was shorter in the intervention group than in the control group. There were no differences between the two study groups with regard to the decrease of symptoms. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|---|-----------------------------|---|--|
| Well-being checks or health screening | Wang, P.S., Patrick, A., Avorn, J., Azocar, F., Ludman, E., McCulloch, J., Simon, G., and Kessler, R. (2006) 'The costs and benefits of enhanced depression care to employers', in <i>Archives of General Psychiatry</i> 63, pp 1345–1353. | IV Cost Benefit Analysis | N/A (Hypothetical cohort of 40-year-old workers) | <ul style="list-style-type: none"> • Positive: Wang and colleagues (2006) assessed the five year potential cost effectiveness of a program of enhanced depression care (i.e. delivered by mental health professionals and consisting of a one-time workplace-based depression screen for all employees and telephone based care management by trained clinicians for those with positive results for depression). Incremental gains in Quality Adjusted Life Years (QALYs) through use of the program were modest – just 0.002 at an incremental cost of \$39.90. Taking into account the low costs of the intervention, from a societal perspective the cost per (QALY) gained was just \$19.976, a value normally considered to be cost effective in high-income countries. The costs to employers of the intervention were more than exceeded by the costs of absenteeism, presenteeism, and employee turnover avoided. Per 1,000 employees subjected to the depression screen, over a five-year period net savings of \$2,895 would be realised. |
| Other sources | Harvey, S., Joyce, S., Tan, L., Johnson, A., Nguyen, H., Modini, M., and Groth, M. (2013) Developing a mentally healthy workplace: A review of the literature, UNSW, beyondblue and Black Dog Institute, Sydney. < https://www.headsup.org.au/docs/default- | IV Review of the Literature | N/A | <ul style="list-style-type: none"> • Positive: Identified an evidence base for strategies across the following domains: <ul style="list-style-type: none"> - 'Designing and managing work to minimise harm - Promoting protective factors at an organisational level to maximise resilience |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|-------------|--|
| | source/resources/developing-a-mentally-healthy-workplace_final-november-2014.pdf?sfvrsn=8>, accessed 3 October 2017. | | | <ul style="list-style-type: none"> - Enhancing personal resilience - Promoting and facilitating early help-seeking - Supporting workers recovery from mental illness • Increasing awareness of mental illness and reducing stigma' |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|---|---------------------------------|---|--|
| Recommendation 1.2: Trial a peer workforce to build the evidence base | | | | |
| Mutual peer support groups and peer support services | Kaplan, K., Salzer, M., Solomon, P., Brusilovskiy, E., and Cousounis, P. (2011) 'Internet peer support for individuals with psychiatric disabilities: a randomized controlled trial' in <i>Soc Sci Med</i> 72, pp 54–62. | II RCT | <ul style="list-style-type: none"> Cohort: Individuals resident in the USA diagnosed with a Schizophrenia Spectrum or an Affective Disorder Cohort size: n=300, randomized into one of three conditions: <ul style="list-style-type: none"> Experimental Internet peer support via a listserv Experimental Internet peer support via a bulletin board Control condition | <ul style="list-style-type: none"> Negative: Found that participation in an unmoderated, unstructured Internet listserv or bulletin board peer support group for individuals with psychiatric disabilities did not enhance well-being. |
| | Segal, S., Silverman, C.J., and Temkin, T.L. (2011) 'Outcomes from consumer-operated and community mental health services: a randomized controlled trial' in <i>Psychiatr Serv</i> 62:8, pp 915–921. | II RCT | <ul style="list-style-type: none"> Cohort: new clients seeking help from the community mental health agencies Cohort size: n=139 were randomly assigned to: <ul style="list-style-type: none"> Agency-only service Combination of consumer-operated service programs (COSP) and CMHA services | <ul style="list-style-type: none"> Negative: Consumer-operated service programs combined with community mental health agency service were found to be less helpful than community mental health agency service alone. |
| | Rogers, E., Teague, G.B., Lichenstein, C., Campbell, J., Lyass, A., Chen, R., and Banks, S. (2007) 'Effects of participation in consumer-operated service programs on both personal and organizationally mediated empowerment: results of | IV Multisite Program Evaluation | <ul style="list-style-type: none"> Cohort: Diagnostic and Statistical Manual of Mental Disorders Axis I or II diagnosis that constituted a serious mental illness, such as schizophrenia, schizoaffective disorder, or a | <ul style="list-style-type: none"> Positive: Results support the conclusion that COSPs in general have a positive additive effect on empowerment. These effects are significant but small in magnitude. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|---|
| | multisite study' in <i>J Rehabil Res Dev</i> 44:6, pp 785–800. | | <p>major depressive disorder (18 years+)</p> <ul style="list-style-type: none"> Cohort size: n=1,827 across eight sites, with the experimental COSPs sites loosely falling into the following categories: <ul style="list-style-type: none"> - Drop-in (n =4) - Peer support and mentoring (n=2) - Education and advocacy (n = 2) - The control condition consisted of an array of traditional mental health services, such as psychopharmacology and medication management, case management, residential services, psychotherapy, day services, and psychosocial rehabilitation services. | |
| | Cook, J., Copeland, M., Jonikas, J., Hamilton, M., Razzano, L., Grey, D., et al. (2011) 'Results of a randomized controlled trial of mental illness self-management using wellness recovery action planning' in <i>Schizophr Bull</i> 34, pp 214–222. | II RCT | <ul style="list-style-type: none"> Cohort: adults with severe and persistent mental illness were recruited from outpatient community mental health settings in six Ohio communities Cohort size: n= 519, randomly assigned to: | <ul style="list-style-type: none"> Positive: Compared to controls, intervention participants reported: (1) significantly greater reduction over time in Brief Symptom Inventory Global Symptom Severity and Positive Symptom Total, (2) significantly greater improvement over time in hopefulness as assessed by the Hope Scale total score and subscale for goal directed |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|--|
| | | | <ul style="list-style-type: none"> - Eight-week peer-led illness self-management intervention - Wait-list control condition | <p>hopefulness, and (3) enhanced improvement over time in QOL as assessed by the World Health Organization Quality of Life-BREF environment subscale. These results indicate that peer-delivered mental illness self-management training reduces psychiatric symptoms, enhances participants' hopefulness, and improves their QOL over time.</p> |
| | Barbic, S., Krupa, T., and Armstrong, I. (2009) 'A randomized controlled trial of the effectiveness of a modified recovery workbook program: preliminary findings' in <i>Psychiatr Serv</i> 60:4, pp 491-497. | II RCT | <ul style="list-style-type: none"> • Cohort: persons who were receiving assertive community treatment services • Cohort size: n=33, randomly assigned to: <ul style="list-style-type: none"> - Control group (n=17) received treatment as usual - Intervention group (n=16) received Recovery Workbook training in addition to usual treatment | <ul style="list-style-type: none"> • Positive: Participation in the intervention group that received Recovery Workbook training in addition to usual treatment was associated with positive change in perceived levels of hope, empowerment, and recovery but not in quality of life. |
| | Van Gestel-Timmermans, H., Brouwers, E., Van Assen, M., Van Nieuwenhuizen, C. (2012) 'Effects of a peer-run course on recovery from serious mental illness: a randomized controlled trial' in <i>Psychiatr Serv</i> 63:1, pp 54-60. | II RCT | <ul style="list-style-type: none"> • Cohort: people with major psychiatric problems • Cohort size: n=333, randomly assigned to: <ul style="list-style-type: none"> - Experimental peer run intervention (n=168) - Control (n=165) condition | <ul style="list-style-type: none"> • Positive: The experimental peer run intervention had a significant and positive effect on empowerment, hope, and self-efficacy beliefs but not on quality of life and loneliness. The effects of the intervention continued for three months after course completion. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|--|----------------------|---|--|
| | Proudfoot, J., Parker, G., Manicavasagar, V., Hadzi-Pavlovic, D., Whitton, A., Nicholas, J., et al. (2012) 'Effects of adjunctive peer support on perceptions of illness control and understanding in an online psychoeducation program for bipolar disorder: a randomised controlled trial' in <i>J Affect Disord</i> 142:1-3, pp 98-105. | II RCT | <ul style="list-style-type: none"> Cohort: people diagnosed with bipolar disorder within the previous 12 months Cohort size: Participants were randomly allocated to: <ul style="list-style-type: none"> Eight-week online psychoeducation program (n=139) Psychoeducation program plus online peer support (n=134) Attentional control condition (n=134) | <ul style="list-style-type: none"> Mixed: From pre- to post-intervention increased perceptions of control, decreased perceptions of stigmatisation and significant improvements in levels of anxiety and depression were found across all groups. No significant differences between groups on outcome measures were found. |
| Consumer providers in general and in traditional mental health services | Rivera, J.J., Sullivan, A.M., and Valenti, S.S. (2007) 'Adding consumer-providers to intensive case management: Does it improve outcome?', in <i>Psychiatric Services</i> 58:6, pp 802–809. | II RCT | <ul style="list-style-type: none"> Cohort: clients with severe and persistent mental illness Cohort size: n=203, randomly assigned to: <ul style="list-style-type: none"> Peer assisted (n=70) Standard (n=66) Clinic based (n=67) | <ul style="list-style-type: none"> Positive: All three programs yielded the same general pattern of improvement over time for symptoms, healthcare satisfaction, and quality of life. Clients in the three programs also showed similar but small changes in measures of social network behaviour. Despite these variations in the pattern of services over a 12-month period, no one program emerged as categorically superior to the others. |
| | Bright, J.I., Baker, K.D., and Neimeyer, R.A. (1999) 'Professional and paraprofessional group treatments for depression: A comparison of cognitive-behavioral and mutual support interventions', in <i>Journal of Consulting and Clinical Psychology</i> 67:4, pp 491–501. | II RCT | <ul style="list-style-type: none"> Cohort: Depressed outpatients Cohort size: n=98, randomly assigned to: <ul style="list-style-type: none"> CBT MSG led by either two professional or two | <ul style="list-style-type: none"> Mixed: Results suggest that non-professionals were as effective as professionals in reducing depressive symptoms and that clients in the CBT and MSG conditions improved equally. Clinically significant improvement was demonstrated for both conditions. However, following treatment, more |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | | | paraprofessional therapists | patients in the professionally led CBT groups were classified as nondepressed and alleviated than in the paraprofessionally led CBT groups. |
| | Solomon, P., and Draine, J. (1995) 'The efficacy of a consumer case management team: 2-year outcomes of a randomized trial', in <i>Journal of Mental Health Administration</i> 22:2, pp 135–146. | II RCT | <ul style="list-style-type: none"> • Cohort: seriously mentally disabled adult clients • Cohort size: n=90, assigned either to: <ul style="list-style-type: none"> - Consumer team of case managers (CMs) - Non-consumer team of case managers | <ul style="list-style-type: none"> • Positive: Consumer CMs were found to be as effective as non-consumer CMs in maintaining the stability of their clients. Employing consumer CMs in the mental health system has potential benefits, meeting the system's need for human resources and consumers' need for employment opportunities. |
| | Craig, T., Doherty, I., Jamieson-Craig, R., Boocock, A., and Attafua, G. (2004) 'The consumer-employee as a member of a Mental Health Assertive Outreach Team. I. Clinical and social outcomes', in <i>Journal of Mental Health</i> , 13:1, pp 59–69. | II RCT | <ul style="list-style-type: none"> • Cohort: clients of the assertive outreach team • Cohort size: n=45, randomly assigned to receive either: <ul style="list-style-type: none"> - Standard case management (n=21) - Case management plus additional input from a consumer employee (n=24) working as a healthcare assistant (HCA) to the team | <ul style="list-style-type: none"> • Positive: A single centre RCT by Craig et al. (2004) explored views of staff and clients of which were involved in the delivery or receiving of case management plus a consumer employee as healthcare assistant. Staff perspectives included: lower rates of non-attendance to appointments; higher levels of participation in structured social activity; improvements in communication and social contacts; fewer unmet practical needs (daytime activity, company, finances, transport, access to benefits); no difference in self-care, turbulence or responsibility; and no differences in number or length of hospitalisation. Client perspectives included: fewer unmet practical needs (same as above); no differences in social networks and satisfaction with services. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|--|
| | O'Donnell, M., Parker, G., Proberts, M., Matthews, R., Fisher, D., and Johnson, B. (1999) 'A study of client-focused case management and consumer advocacy: The community and consumer service project', in <i>Australian and New Zealand Journal of Psychiatry</i> 33:5, pp 684–693. | II RCT | <ul style="list-style-type: none"> Cohort: Clients referred for case management Cohort size: randomly allocated to: <ul style="list-style-type: none"> Standard case management (n=35) Client-focused case management (n=39) Client-focused case management plus consumer advocacy (n=45) | <ul style="list-style-type: none"> Mixed: While there were no differences between the groups on quantitative measures of functioning, disability, quality of life, service satisfaction and burden of care, there were significant between-group differences on qualitative measures of satisfaction with services. |
| | Sledge, W., Lawless, M., Sells, D., Wieland, M., O'Connell, M., and Davidson. (2011) 'Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalisations' in <i>Psychiatr Serv</i> 62:5, pp 541–544. | II RCT | <ul style="list-style-type: none"> Cohort: patients were 18 years or older with major mental illness and had been hospitalized three or more times in the prior 18 months Cohort size: n=74, randomly assigned to: <ul style="list-style-type: none"> Usual care (n=36) Peer mentor plus usual care (n=38) | <ul style="list-style-type: none"> Positive: Participants who were assigned a peer mentor had significantly fewer rehospitalisations ($.89 \pm 1.35$ versus 1.53 ± 1.54; $p=.042$ [one-tailed]) and fewer hospital days (10.08 ± 17.31 versus 19.08 ± 21.63 days; $p<.03$, [one tailed]). Despite the study's limitations, findings suggest that use of peer mentors is a promising intervention for reducing recurrent psychiatric hospitalisations for patients at risk of readmission. |
| | Davidson, L., Shahar, G., Stayner, D. A., Chinman, M. J., Rakfeldt, J., and Tebes, J. K. (2004) 'Supported socialization for people with psychiatric disabilities: lessons from a randomized controlled trial', in <i>Journal of Community Psychology</i> 32:4, pp 453–477. | II RCT | <ul style="list-style-type: none"> Cohort: people with psychiatric disabilities who were socially isolated and withdrawn Cohort size: n=260, they were: <ul style="list-style-type: none"> Not matched with a volunteer partner (n=70) | <ul style="list-style-type: none"> Positive: Davidson et al. (2004) conducted a single-program, multi-site RCT finding that participants assigned peer support from a consumer-partner with a similar history of psychiatric disability showed: improvements in psychiatric symptoms, social functioning, self-esteem wellbeing and satisfaction. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|-----------------------------------|---|--|
| | | | <ul style="list-style-type: none"> - Matched with a volunteer partner who had a personal history of psychiatric disability (n=95) - Matched with a volunteer partner with no history of psychiatric disability (n=95) | |
| | Kane, C.F., and Blank, M.B. (2004) 'NPACT: Enhancing programs of assertive community treatment for the seriously mentally ill', in <i>Community Mental Health Journal</i> 40:6, pp 549-559. | IV Comparative Program Evaluation | <ul style="list-style-type: none"> • Cohort: persons with serious mental illness • Cohort size: n=59, in a two-group community comparison design: <ul style="list-style-type: none"> - Receiving NPACT (n=38) - Receiving traditional Program of Assertive Community Treatment (PACT) (n=21) | <ul style="list-style-type: none"> • Positive: Consumers with stabilized peer providers of assertive community treatment (trained by psychiatric nurses) had: less physical symptoms; greater improvements in psychiatric symptoms; better community adjustment; and greater satisfaction with services. |
| | Forchuk, C., Martin, M., Chan, Y. L., and Jensen, E. (2005) 'Therapeutic relationships: From psychiatric hospital to community', in <i>Journal of Psychiatric and Mental Health Nursing</i> 12:5, pp 556-564. | II RCT | <ul style="list-style-type: none"> • Cohort: clients who have a persistent mental illness • Cohort size: n=390, with the model consisting of (1) Peer support for one year and (2) Ongoing support from hospital staff until a therapeutic relationship was established with the community care provider | <ul style="list-style-type: none"> • Positive: Forchuk et al. (2005) conducted a small single-program cluster randomized study finding that discharged patients participating in a transitional discharge model with in-patient staff continuing care plus peer support had: no difference in global quality of life; greater improvement in social relations; and consumed \$4,400 CDN less hospital and emergency room services per person. Intervention subjects were discharged an average of 116 days earlier per person. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|---|-----------------------|--|---|
| | Sells, D., Davidson, L., Jewell, C., Falzer, P., and Rowe, M. (2006) 'The treatment relationship in peer-based and regular case management for clients with severe mental illness', in <i>Psychiatric Services</i> 57:8, pp 1179–1184. | II RCT | <ul style="list-style-type: none"> Cohort: adults with severe mental illness Cohort size: n=137 participated in a 2x2 prospective longitudinal randomized clinical trial with two levels of case management intervention (peer and regular) and two interviews (six and 12 months) | <ul style="list-style-type: none"> Positive: Clients with peer case managers: reported feeling more liked, understood and accepted by their providers after six months of treatment, but these effects disappeared at 12 months; and showed increased contacts with providers over six months. |
| | Chinman, M.J., Rosenheck, R., Lam, J.A., and Davidson, L. (2000) 'Comparing consumer and non-consumer provided case management services for homeless persons with serious mental illness', in <i>Journal of Nervous and Mental Disease</i> 188:7, pp 446–453. | II RCT | <ul style="list-style-type: none"> Cohort: Patients Cohort size: n=185, randomised into: <ul style="list-style-type: none"> Consumer case management Non-consumer case management | <ul style="list-style-type: none"> Positive: Chinman et al. (2000) found that between outreach programs with consumer case managers and those with non-consumer case managers, there was almost no differences in either baseline characteristics, outcomes, or relationship variables. This therefore supports the use of consumers in case management roles. |
| | Lawn, S., Smith, A., and Hunter, K. (2008) 'Mental health peer support for hospital avoidance and early discharge: An Australian example of consumer driven and operated service' in <i>Journal of Mental Health</i> 1795, pp 498-508. | IV Program Evaluation | N/A | <ul style="list-style-type: none"> Positive: In the first three months of operation, more than 300 bed days were saved when peers were employed as supporters for people. This equated to AUD\$93,150 saved after project set up, delivery and administration costs of approximately \$19,850. |
| Peer workers in entirely consumer led and run mental | Doughty, C., and Tse, S. (2011) 'Can consumer-led mental health services be equally effective? An integrative review of CLMH services in high-income countries', in <i>Community</i> | I Systematic Review | N/A (29 studies) | <ul style="list-style-type: none"> Positive: Peer worker led services can offer better recovery outcomes across emotional and social domains and that quality of life factors such as employment and education can also be better than traditional services. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|-----------------------|---|---|
| health services | <i>Mental Health Journal</i> 47, pp 252–266. | | | Importantly, these findings partially draw from the experiences of consumers of PW roles ⁶¹ |
| | Campbell, J. (2004). 'Consumer-operated services program (COSP) multisite research initiative: Overview and preliminary findings', Saint Louis, MO: Missouri Institute of Mental Health. | IV Program Evaluation | N/A | <ul style="list-style-type: none"> Positive: A RCT by Campbell (2004) found that participants assigned to both consumer run programs that emphasized self-help and traditional services showed greater improvement in well-being over the course of study than participants assigned only to traditional services. |
| | Castelein, S., Bruggeman, R., van Busschbach, J.T., van der Gaag, M., Stant, A.D., and Kneegting, H., et al. (2008) 'The effectiveness of peer support groups in psychosis: A randomized controlled trial', in <i>Acta Psychiatrica Scandinavica</i> 118, pp 64–72. | II Multi-Centre RCT | <ul style="list-style-type: none"> Cohort: People with psychosis Cohort size: n=106, randomly assigned to: <ul style="list-style-type: none"> Peer support group (n=56) Control group (n=50) | <ul style="list-style-type: none"> Positive: A multi-centre RCT by Castelein et al. (2008) found that a peer support program with minimal involvement from professionals has positive effects on social network, social support and quality of life. |
| | Dumont, J., and Jones, K. (2002) 'Findings from a consumer/survivor defined alternative to psychiatric hospitalisation', in <i>Outlook, Evaluation Center@HSRI and NASMHPD Research Institute, Spring issue</i> 4–6. | II RCT | <ul style="list-style-type: none"> Cohort: All study participants had been labelled with a DSM-III R diagnoses. They had experienced substantial hospital stays with a majority having had four or more admissions and a median 'longest stay' or over one month. Cohort size: n=265, randomly assigned to: <ul style="list-style-type: none"> Test group - had access to all CH services. CH services included | <ul style="list-style-type: none"> Positive: A single centre RCT found that access to a consumer-run crisis hostel and peer support had: significantly less hospital admissions; shorter duration of stays in hospitals; and greater levels of satisfaction with services. Further, they found that the cost per patient for crisis services was reduced by almost one-third when they were given access to the hostel (USD\$3,187 vs. USD\$2,018). |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|--|
| | | | <p>preparatory hostel training, crisis services, on-going workshops, peer counselling, advocacy and entry to a rage or meditation/massage room. Use of CH services was voluntary.</p> <ul style="list-style-type: none"> - Control group was not able to avail themselves to CH services. Both groups were evenly distributed on all baseline variables. | |
| | Burti, L., Amaddeo, F., Ambrosi, M., Bonetto, C., Cristofalo, D., Ruggeri, M., et al. (2005) Does additional care provided by a consumer self-help group improve psychiatric outcome? A study in an Italian community-based psychiatric service. <i>Community Mental Health Journal</i> 41(6), 705–720. | IV Comparison study | <ul style="list-style-type: none"> • Cohort: Patients • Cohort size: n=354, with two comparison groups: <ul style="list-style-type: none"> - Self-help group (n=53) - Non self-help group (n=309) | <ul style="list-style-type: none"> • Positive: Clients who attended the consumer run self-help group had: decreased number of admissions; reduced duration of stay in hospital; and higher levels of service satisfaction. There was no difference in symptoms and level of disability. |
| | Chinman, M.J., Weingarten, R., Stayner, D., and Davidson, L. (2001) Chronicity reconsidered: Improving person-environment fit through a consumer-run service. <i>Community Mental Health Journal</i> 37(3), 215–229. | II Cluster RCT | <ul style="list-style-type: none"> • Cohort: Patients • Cohort size: n=185 | <ul style="list-style-type: none"> • Positive: Clients who received outpatient services plus the consumer-run Welcome Basket Program over the first year of operation had a 50% reduction in re-hospitalisations, but that there was no significant difference in the number of re-admissions to hospital or the number of inpatient days. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|-----------------------|---|---|
| | Nelson, G., Ochocka, J., Janzen, R., and Trainor, J. (2006b) A longitudinal study of mental health consumer/survivor initiatives: Part 2—a quantitative study of impacts of participation on new members. <i>Journal of Community Psychology</i> 34(3), 261– 272. | IV Longitudinal Study | <ul style="list-style-type: none"> • Cohort: clients with mental health conditions • Cohort size: n=118, with n=61 being active participants of the mental health consumer survivor initiatives and n=57 being non-active participants | <ul style="list-style-type: none"> • Positive: Participants of consumer-run organizations had: small increases in quality of life; less days spent in psychiatric hospitalisation; less use of emergency services; greater proportion maintained employment or education; more stable mental health; enhanced social support; sustained work; and greater participation in education/training. |
| | Clarke, G., Herinckx, H., Kinney, R., Paulson, R., Cutler, D., Lewis, K., et al. (2000) Psychiatric hospitalisations, arrests, emergency room visits, and homelessness of clients with serious and persistent mental illness: findings from a randomized trial of two ACT programs vs. usual care. <i>Ment Health Serv Res</i> 2(3):155-164. | II RCT | <ul style="list-style-type: none"> • Cohort: clients with serious mental illness • Cohort size: n=163 randomized to: <ul style="list-style-type: none"> - Assertive Community Treatment (ACT) - Usual care | <ul style="list-style-type: none"> • Positive: Clients receiving assertive community treatment with consumer case managers had: less hospitalisations and emergency room visits; and had no differences in time to first homelessness, arrest or ED visit. |
| | Greenfield, T., Stoneking, B., Humphreys, K., Sundby, E., and Bond, J. (2008) A randomized trial of a mental health consumer managed alternative to civil commitment for acute psychiatric crisis. <i>American Journal of Psychology</i> 42, 135–144. | II multi-centre RCT | <ul style="list-style-type: none"> • Cohort: Patients with mental health conditions • Cohort size: n=393, randomised to: <ul style="list-style-type: none"> - Unlocked, mental health consumer-managed, crisis residential program (CRP) - Locked, inpatient psychiatric facility (LIPF) | <ul style="list-style-type: none"> • Positive: Found a greater mean improvement for psychiatric symptoms and strengths, and treatment satisfaction for the group in the consumer-run, crisis residential program, emphasizing client decision, involvement in recovery and also the importance of experiential learning, with these found to be viable, cost-effective alternatives to more restrictive, traditional, acute inpatient services. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|--|----------------------|-------------|--|
| Recommendation 1.3: Change incentives for WorkCover and private health insurers | | | | |
| Private health insurers to provide better coverage for mental health conditions | RANZCP. (2016) The economic cost of serious mental illness and comorbidities in Australia and New Zealand, 2016' report. https://www.ranzcp.org/Files/Publications/RANZCP-Serious-Mental-Illness.aspx , accessed on 3 October 2017. | IV Report | N/A | <p>There is a need to improve coverage with RANZCP recently reporting that it is common for Australian private health insurance policies to be limited in their coverage of psychiatric care, particularly around:</p> <ul style="list-style-type: none"> • The 'gap' on any medical services incurred when patients are admitted to hospital and the full coverage of psychiatric admissions in private mental health services • Any excesses or co-payments • Outreach services such as 'hospital in the home' type programs • Ongoing outpatient treatment, including check-ups and psychiatric consultations • Policy exclusions surrounding payments for pathology and radiology treatments, multiple psychiatric admissions and limits to the number of electroconvulsive treatments. |
| Improving awareness and communication about mental health coverage by private health insurers to in turn relieve | RANZCP. (2016) The economic cost of serious mental illness and comorbidities in Australia and New Zealand, 2016' report. https://www.ranzcp.org/Files/Publications/RANZCP-Serious-Mental-Illness.aspx , accessed on 3 October 2017. | IV Report | N/A | RANZCP reports the need to increase awareness and clarity around the coverage of mental healthcare by private health insurers, specifically around waiting periods for psychiatric services only being two months as per the Act (even for pre-existing conditions). Additionally, there is a need for more clarity of coverage of day programs and outreach programs with some fund limiting |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|---|----------------------|-------------|---|
| the burden on the public health system alone | | | | access to both at the same time or only covering one or the other. |
| Workers compensation bodies need to take a proactive approach to mental health | Guthrie, R., Ciccarelli, M., and Babic, A. (2010) Work related stress in Australia: the effects of legislative interventions and the costs of treatment. <i>Int. Journal of Law and Psychiatry</i> 33: 101-115. | IV Review | N/A | Guthrie et al. (2010) argue that legislators have dealt with workplace mental health issues by reducing the potential for workers to claim compensation for work-related stress and mental health conditions. Consequently this has resulted in: complex, expensive and delayed compensation processes; a lack of reduction in claims costs over time with very few incentives for employers to implement organizational stress management interventions; and an implied shift of costs to the general health and social care systems. They suggest that in future all stress claim exclusion provisions should be removed and in addition that insurers adopt a process of approval of claims on a 'without prejudice' basis in the short term to provide earlier interventions. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|--|-----------------------|--|---|
| Recommendation 2.1: Adopt a Housing First model for individuals with significant mental illness at risk of homelessness | | | | |
| Housing First models | Woodhall-Melnik, J.R., and Dunn, J.R. (2016) 'A systematic review of outcomes associated with participation in Housing First programs', in <i>Housing Studies</i> 31:3, pp 287-304. | I (Systematic review) | N/A | <ul style="list-style-type: none"> • Positive: Housing First models have had positive impacts on psychiatric symptoms and substance abuse, as well as achieving other outcomes (such as reducing homelessness and increasing residential stability). • However, there is a need to build the evidence base on longer-term outcomes for Housing First participants, specifically for sub-groups such as young people, veterans and minority groups. |
| | Leff, H.S., Chow, C.M., Pepin, R., Conley, J., Allen, I.E., and Seaman, C.A. (2009) 'Does one size fit all? What we can and can't learn from a meta-analysis of housing models for persons with mental illness', in <i>Psychiatric Services</i> 60:4, pp 473-482. | I (Meta-analysis) | N/A | <ul style="list-style-type: none"> • Positive: Residential care and treatment and permanent supported housing achieved significantly better outcomes in reducing hospitalisations than non-model housing (no intervention/treatment as usual). |
| | Aubry, T., Goering, P., Veldhuizen, S., Adair, C.E., Borque, J., Distasio, J., Latimer, E., Stergiopoulos, V., Somers, J., Streiner, D., and Tsemberis, S. (2016) 'A multiple-city RCT of Housing First with assertive community treatment for homeless Canadians with serious mental illness', in <i>Psychiatric Services</i> 67:3, pp 275-281. | II RCT | <ul style="list-style-type: none"> • Cohort: Adults with serious mental illness who were absolutely homeless or precariously housed • Cohort size: n=950 randomised to: <ul style="list-style-type: none"> - Intervention group (n=469) receiving Housing First and either assertive community treatment (ACM or | <ul style="list-style-type: none"> • Positive overall, but same results as TAU: The intervention and control groups reported similar decreases in the number of days hospitalised (pooled average of 62%) and emergency department presentations (pooled average of 53%) • Housing First participants showed an initial greater decrease in emergency department visits (incidence rate ratio [IRR] at the six-month follow-up=.68, CI |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | | | <p>intensive case management (ICM)</p> <ul style="list-style-type: none"> - Control group (n=481) receiving treatment as usual (access to any housing and community support service other than the Housing First program) | =.52–.90, p=.007), but the difference for the study period as a whole fell short of the significance threshold (IRR=.80, CI=.65–1.00, p=.05). |
| | Russolillo, A., Patterson, M., McCandless, L., Moniruzzaman, A., and Somers, J. (2014) 'Emergency department utilisation among formerly homeless adults with mental disorders after one year of Housing First interventions: A randomised control trial', in <i>International Journal of Housing Policy</i> 14:1, pp 79-97. | II RCT | <ul style="list-style-type: none"> • Cohort: Adults with a mental disorder who were absolutely homeless or precariously housed • Cohort size: n=233 randomised to: <ul style="list-style-type: none"> - Intervention group (n=162) receiving either Housing First in a congregate setting (n=89) or Housing First in a scattered site setting (n=73) - Control group (n=61) receiving treatment as usual | <ul style="list-style-type: none"> • Positive: Housing First, particularly the 'scattered site' models, produced significantly lower numbers of emergency department visits among homeless adults with a mental disorder. |
| | Gulcur, L., Stefancic, A., Shinn, M., Tsemberis, S., and Fischer, S.N. (2003) 'Housing, hospitalisation and cost outcomes for homeless individuals with psychiatric disabilities participating in continuum of care and Housing First programmes', in <i>Journal of</i> | II RCT | <ul style="list-style-type: none"> • Cohort: Adults with an Axis 1 diagnosis of severe mental illness, exhibited a history of homelessness in the six months prior to commencement, and had spent 15 of the 30 days prior | <ul style="list-style-type: none"> • Positive: The control group spent significantly more time in hospital than the Housing First group ($F(1, 195) = 7.4, p < 0.01$). |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-----------------------------|---|----------------------------------|--|--|
| | <i>Community and Applied Social Psychology</i> | | <p>to commencement on the street</p> <ul style="list-style-type: none"> Cohort size: n=225 randomised to: <ul style="list-style-type: none"> Intervention group (n=99) receiving a Housing First intervention (housing in independent scatter-site apartments and services through interdisciplinary Assertive Community Treatment teams) Control group (n=126) received a continuum of care model | |
| Other housing models | Bruce, J., McDermott, S., Ramia, I., Bullen, J. and Fisher, K.R. (2012), <i>Evaluation of the Housing and Accommodation Support Initiative (HASI) Final Report</i> (Sydney: NSW Health and Housing NSW, Social Policy Research Centre). | III-3 (Historical control study) | <ul style="list-style-type: none"> Cohort: Individuals over the age of 16 with a mental health diagnosis who require support services, have difficulty accessing or maintaining stable housing, and have the ability and desire to live in the community Cohort size: n=895 Intervention include accommodation support and rehabilitation associated with disability; clinical care and rehabilitation; and long-term, secure and affordable housing and property and | <ul style="list-style-type: none"> Positive: HASI participants experienced an average 24% decrease in mental health inpatient hospital admissions after joining HASI, a 59% decrease in the number of days spent in hospital, and a 68% decrease in the average number of days hospitalised per admission. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | | | tenancy management services | |
| | KPMG (2016), Evaluation of the Mental Health Homelessness Housing Support Initiatives: Final evaluation report (Melbourne: KPMG). | IV | <ul style="list-style-type: none"> • Cohort: Victorians aged 16 or over experiencing severe and enduring mental illness with a history of long-term or repeated homelessness • Cohort size: Breaking the Cycle (n=189) and Support for Secure Tenancies (n=448) • Two interventions: • Breaking the Cycle (BtC): Support to access safe and secure housing, access to clinical mental health support, connection to primary care, brokerage, and crisis intervention and emotional support • Support for Secure Tenancies (SST): Scaled flexible mental health outreach support that is linked to local public and private housing opportunities | <ul style="list-style-type: none"> • Positive: Overall, the evaluation found evidence of decreasing use of emergency and crisis services for clients during the program period, with evaluation template data showing substantial decreases in rates of Emergency Department (ED) presentations and decreasing Crisis Assessment Team (CAT) contacts. While the matched data analysis found that SST clients experienced a slight increase in (CAT) contacts when compared to controls, this was not the case for BtC clients. This was likely to relate directly to the overall increase in community mental health service contact with both client groups. • When compared to the pre-intervention trend (19% increase per annum) for matched BtC clients, ED presentations decreased from 104 per 100 clients in 2012-13 to 77 per 100 clients in 2014-15, a decrease of 13.5% per annum during the program. Similarly for the matched SST clients compared to the pre-intervention trend (28% increase per annum), ED presentations decreased from 184 per 100 clients in 2012-13 to 117 per 100 clients in 2014-15, an average decrease of 16% per annum during the program. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|----------------------|--|----------------------|-------------|--|
| | | | | <ul style="list-style-type: none"> Hospital admission outcomes for clients of both programs showed initial increases in admissions specifically to 'psychiatric' beds, which then decreased or plateaued in the second year of the program. Of interest is that while admissions increased, the average length of stay decreased. Qualitative evidence from the evaluation shows that these impacts are likely related to better connections between the lead agencies and clinical mental health services and related to admissions that are generally planned, rather than being crisis driven. |
| Other studies | Aquin, J.P., Roos, L.E., Distasio, J., Katz, L.Y., Borque, J., Bolton, J.M., Bolton, S., Wong, J.Y., Chateau, D., Somers, J.M., Enns, M.W., Hwang, S.W., Frankish, J.C., and Sareen, J. (2017), 'Effect of Housing First on suicidal behaviour: A randomised control trial of homeless adults with mental disorders', in <i>The Canadian Journal of Psychiatry</i> 62:7, pp 473-481. | II RCT | - | <ul style="list-style-type: none"> N/A – Outcome measured was a decrease in suicidality. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|--|----------------------|-------------|---|
| Recommendation 2.2: Provide assertive outreach to individuals who have attempted suicide | | | | |
| Assertive outreach | Zalsman et al. (2016), 'Suicide prevention studies revisited: 10 year systematic review', in <i>Lancet Psychiatry</i> 3, pp 646-59. | I Systematic review | N/A | <ul style="list-style-type: none"> • Positive: CBT, DBT, problem-solving therapy and intensive outpatient care with outreach – emerging but positive evidence base (individual RCTs). • Aftercare program for people attempting suicide – emerging but positive evidence base (cohort study and lower-quality RCT). |
| | Hawton, K., Witt, K.G., Taylor Salisbury, T.L., Arensman, E., Gunnell, D., Hazell, P., Townsend, E., and van Heeringen, K. (2016) 'Psychosocial interventions following self-harm in adults: A systematic review and meta-analysis', in <i>Lancet Psychiatry</i> 3, pp 740-50. | I Systematic review | N/A | <ul style="list-style-type: none"> • Positive: Cognitive-behavioural-based psychotherapy (CBT; comprising cognitive-behavioural and problem-solving therapy) was associated with fewer participants repeating self-harm at 6 months' (odds ratio 0.54, 95% CI 0.34–0.85; 12 trials; n=1317) and at 12 months' follow-up (0.80, 0.65–0.98; 10 trials; n=2232). There were also significant improvements in the secondary outcomes of depression, hopelessness, suicidal ideation, and problem solving. • The secondary endpoint of frequency of self-harm was associated with a significant reduction with use of dialectical behaviour therapy (mean difference –18.82, 95% CI –36.68 to –0.95). |
| | Milner et al. (2015), 'Letters, green cards, telephone calls and postcards: Systematic and meta-analytic review of brief contact interventions for reducing self-harm, suicide attempts | I Systematic review | N/A | <ul style="list-style-type: none"> • Mixed: The intervention has a non-significant positive effect on repeated self-harm, suicide attempt and suicide. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|---|--|
| | and suicide', in <i>British Journal of Psychiatry</i> 206:3, pp 184-90. | | | <ul style="list-style-type: none"> The intervention potentially has a significant effect on the number of episodes of repeated self-harm or suicide attempts per person (based on only three studies). |
| | Hvid et al. (2011), 'Preventing repetition of attempted suicide – II. The Amager Project, a randomized control trial', in <i>Nord J Psychiatry</i> 65, pp 292-298. | II RCT | <p>Cohort: All attempted suicide patients except those with major psychiatric diagnoses (schizophrenia, bipolar disorder, severe/psychotic depression)</p> <p>Cohort size: n=133, receiving one of:</p> <p>Intervention (n=69)</p> <p>Control group (n=64) receiving treatment as usual</p> <p>Intervention included six months of home visits, telephone and text messaging with:</p> <p>Outreach: active outreach, rapid response, initiating and maintaining individually tailored contact</p> <p>Problem solving: solution focused counselling</p> <p>Adherence: act as motivator and supporter for adherence to psychiatric therapy and other forms of treatment otherwise offered</p> | <ul style="list-style-type: none"> Positive: The intervention had clear effects, both in the number of persons repeating a suicidal act and in the number of repetitive acts – 4/65 re-attempted suicide in the intervention group, compared to 14/64 in the control group. This includes one completed suicide in each group. However, the number of completed suicides is too small to be informative. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|-------------------------------------|--|--|
| | | | Continuity: contact with the same nurse throughout the program. | |
| | Pan et al. (2013), 'Effectiveness of a nationwide aftercare program for suicide attempters', in <i>Psychological Medicine</i> 43, pp 1447-1454. | III-2 Cohort study | <p>National Suicide Surveillance System in Taiwan:</p> <p>Initial assessment shortly after attempt</p> <p>Sessions of brief counselling – within three days of initial assessment, then a minimum of two contacts a month for three months</p> <p>Frequency of contact changes over time according to risk detected at latest contact using several scales</p> <p>50,805 indexed suicide attempts. 44,364 received aftercare. 854 of those receiving aftercare died by suicide during the follow up period</p> | <ul style="list-style-type: none"> • Positive: Aftercare intervention decreased subsequent suicides for attempters (with initial willingness for aftercare : OR1 0.36, 95% CI 0.26–0.51; without initial willingness for aftercare: OR1 0.78, 95% CI 0.62–0.97). • Aftercare intervention was shown to prolong duration to eventual death. • Effectiveness was influenced by the willingness of the client to participate - receipt of aftercare was associated with a decreased risk in subsequent suicides by 22.5% among those who were initially unwilling to receive aftercare, and by 63.5% for those who expressed their willingness for such services initially. |
| | Appleby et al. (1999), 'Aftercare and clinical characteristics of people with mental illness who commit suicide: A case-control study', in <i>The Lancet</i> 353, pp 1397-1400. | III-3 Historical case control study | Sample of 149 cases and 149 controls | <ul style="list-style-type: none"> • Positive: Those who took their own lives were more likely to have had their care reduced (odds ratio 3.7 [95% CI 1.8–7.6]) at the final appointment in the community before death. • Suicide was also associated with a history of self harm (3.1 [1.7–5.7]), suicidal thoughts during aftercare (1.9 [1.0–3.5]) and the most recent admission as the first illness (2.0 [1.1–3.6]). |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|--------------------------|--|--|
| | | | | <ul style="list-style-type: none"> The associations reported above took into account a number of confounding factors, including the predictable risk of suicide judged from case notes. Only 34% of suicides had an identifiable key worker, the essence of the Care Programme Approach. This frequency was no higher than that for controls, reflecting the difficulty of identifying those likely to commit suicide. |
| | Cebria et al. (2015), 'Telephone Management Program for patients discharged from an emergency department after a suicide attempt: A 5 year follow up study in a Spanish population', in <i>Crisis</i> 36:5, pp 345-352. | III-3 Case control study | <p>Original study: A non-randomized parallel controlled study of a telephone management program for patients discharged from an emergency department after a suicide attempt in Spain.</p> <p>287 intervention cases and 198 control cases were included in the five-year study.</p> | <ul style="list-style-type: none"> Mixed: A telephone management program for patients discharged from an emergency room after a suicide attempt would be a useful strategy in delaying further suicide attempts and reducing the rate of reattempts in the first year. The effects of the intervention were not maintained at five years. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|--|----------------------|---|---|
| Recommendation 3.1: Provide community-based collaborative care to people with co-morbid physical and mental illnesses | | | | |
| Collaborative care | Li, M., Kennedy, E.B., Byrne, N., Gerin-Lajoie., Katz, M.R., Keshavarz, H., Sellick, S., and Green, E. (2016) 'Systematic review and meta-analysis of collaborative care interventions for depression in patients with cancer', in <i>Psycho-Oncology</i> 26, pp 573–587. | I Systematic Review | N/A (8 reports of four collaborative care interventions, eight pharmacological, and nine psychological trials) | <ul style="list-style-type: none"> • Positive: A meta-analysis demonstrated that collaborative care interventions were significantly more effective than usual care (standardized mean difference = –0.49, p = 0.003), and depression reduction was maintained at 12 months. By comparison, short-term (up to 12 weeks), but not longer-term effectiveness was demonstrated for both pharmacological and psychological interventions. • It has been estimated that collaborative care depression interventions are associated with a modest increase of £613 per patient, which is cost-effective based on increases in patient-quality-adjusted life years. |
| | Van Eck van der Sluijs, J.F., Castelijns, H., Eijbroek, V., Rijnders, GAT., van Marwijk, H.W.J., and van der Fletz-Cornelis, C.M. (2017) 'Illness burden and physical outcomes associated with collaborative care in patients with comorbid depressive disorder in chronic medical conditions: A systematic review and meta-analysis', in <i>General Hospital Psychiatry</i> 50:, pp 14. | I Systematic Review | N/A (20 RCTs were included, with a total of n=4774 patients) <ul style="list-style-type: none"> • Description: collaborative care was defined as a priori as a treatment intervention performed by a multidisciplinary team with at least two of the following three care givers involved: a medical doctor (a GP or medical specialist), a consultant psychiatrist and/or a CM, who is most often a nurse. | <ul style="list-style-type: none"> • Positive: The overall effect size of collaborative care versus usual care for illness burden was OR 1.64 (95% CI 1.47;1.83), d=0.27 (95% CI 0.21; 0.33). • The effect of collaborative care on physical outcomes, yielded an overall OR for collaborative care compared to usual care was 1.46 (95% CI 1.28; 1.67) and the overall effect size of CC was d=0.21, 95% CI 0.14; 0.26). • The highest OR (4.18, 95%CI 2.18;8.04; d=0.79, 95% CI 0.43; 1.15) was found for hypertension. • The overall effect size of collaborative care for the depression outcome was |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|--|--|
| | Muntingh, A.D.T., van der Feltz-Cornelis, C.M., MARwijk, H.W.J., Spinhoven, P., and Balkom, A.J.L.M. (2016) 'Collaborative care for anxiety disorders in primary care: a systematic review and meta-analysis', in BMC Family Practice 17, pp 62. | I Systematic Review | N/A (7 studies were included with a total of n=2105 participants) <ul style="list-style-type: none"> Description: collaborative care interventions were defined by the application of criterion 1 in combination with criterion 2 and/ or 3: <ol style="list-style-type: none"> 1) The primary care physician is supported by at least one other professional with a different field of expertise (e.g. care manager, consultant psychiatrist), and they work together in providing care for the patient. 2) Evidence-based treatment is provided. 3) Process and outcome of treatment is monitored. | small to moderate (d=0.35, 95% CI 0.29; 0.42). <ul style="list-style-type: none"> Positive: Collaborative care was superior to care as usual, with a small effect size (SMD = 0.35 95% CI 0.14–0.56) for all anxiety disorders combined and a moderate effect size (SMD = 0.59, 95% CI 0.41-0.78) in a subgroup analysis (five studies) on patients with panic disorder. |
| | Grochtdreis, T., Brettschneider, C., Wegener, A., Watzke, B., Riedel-Heller, S., Harter, M., and Konig, H. (2015) 'Cost-Effectiveness of Collaborative Care for the Treatment of Depressive Disorders in Primary Care: A Systematic Review', in <i>PLoS ONE</i> 10:5 | I Systematic Review | N/A (19 cost-effectiveness analyses were reviewed, with sample sizes between n = 65 to n = 1,801, and time horizons between 6 to 24 months) Description: collaborative care defined as treatment complied with at least three of the following four criteria: | <ul style="list-style-type: none"> Positive: Incremental costs per depression-free day ranged from dominance to USD\$PPP 64.89, and incremental costs per QALY from dominance to USD\$PPP 874,562. - Incremental direct costs: 76% of studies reported positive incremental direct costs of CC with a range between USD\$PPP 46 to 3,761. Negative incremental direct costs were reported with a range between |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|---|---|
| | | | <p>Within [(stepped)] collaborative care the role of care manager is introduced to assist and manage the patient by providing structured and systematic interventions.</p> <p>A network is formed around the patient with at least two professionals [(e.g. primary care physician, care manager, and/or consultant psychiatrist)].</p> <p>Process and outcome of treatment is being monitored and in case of insufficient improvement, treatment may be changed according to the principles of stepped care.</p> <p>Evidence-based treatment is provided e.g. on the basis of a clinical practice guideline.</p> | <p>USD\$PPP –529 to –982 in favour of the collaborative care group.</p> <ul style="list-style-type: none"> - Mean intervention cost: ranged between USD\$PPP 90 to 1,269. • Specific studies: <ul style="list-style-type: none"> - The mean productivity costs as reported by Goorden et al. were USD\$PPP 14,920. These costs consisted of USD\$PPP 1,988 for absenteeism and USD\$PPP 13,065 for presenteeism, respectively. - Three studies interpreted patient time and travel costs as indirect costs. - From a healthcare perspective, incremental cost-effectiveness ratios ranged from to USD\$PPP 56.59 per additional depression-free day. From a societal perspective, the incremental cost-effectiveness ratios ranged from USD\$PPP 5.62 to 64.89 per additional depression-free day. - From a healthcare perspective, incremental cost-effectiveness ratios ranged from dominance to USD\$PPP 153,299 per additional QALY. From a societal perspective, incremental cost-effectiveness ratios ranged from dominance to USD\$PPP 874,562 per additional QALY. |
| | Jacob, V., Chattopadhyay, S.K., Sipe, T.A., Thota, A.B., Byard, G.J., and Chapman, D.P. (2012) 'Economics of Collaborative Care for Management | I Systematic Review | <p>N/A (30 studies)</p> <ul style="list-style-type: none"> • Description: collaborative care is defined as including: | <ul style="list-style-type: none"> • Mixed: Of five studies that measured both benefits and costs, three found lower collaborative care cost because of |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|---|
| | of Depressive Disorders: a Community Guide Systematic Review', in <i>Am J Prev Med</i> 42:5, pp 539 –549. | | education and training of PCPs in order to increase the identification of cases; collaboration among PCPs, case managers, and mental health specialists (i.e. psychiatrists, psychologists, and psychotherapists); evidence based case manager provides coordinator role among all providers and their patients. | <p>reduced healthcare utilization or enhanced productivity.</p> <ul style="list-style-type: none"> - One study estimated the effect of collaborative care on healthcare utilization among medical and surgical patients who screened positive for depression in nine Veterans' Affairs (VA) Medical Centers, finding that outpatient costs increased \$1,698 more for collaborative care group but that inpatient costs decreased by \$4,389 more for the CC group. - Pre and post estimates were taken for five clinics practicing collaborative care, and eight demographically similar clinics practicing usual care for depression, finding that the claims increase of \$722 (73%) for the intervention group was smaller than the increase of \$1,180 (100%) for the comparison group. Although the intervention groups had higher claims increases for psychiatry/counselling and antidepressants, they were also 54% less likely to use the emergency department and 49% less likely to use inpatient psychiatric care, both of which are expensive services. - The study found that the cost of healthcare utilization (\$8,771 per person in the post-intervention group was lower than that in the original |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|-----------|----------------------|-------------|---|
| | | | | <p>RCT's intervention (\$9,332) and control (\$10,082) groups.</p> <ul style="list-style-type: none"> - An RCT for collaborative care with a program cost of \$639 per person per year found benefits based on the difference between healthcare utilization in the intervention and control groups, measured to be \$4,120 lower in total utilization for the intervention group (observed for all categories of healthcare including outpatient, inpatient, and medications, regardless if care was for physical or mental health). • Six of eight included studies reported cost effectiveness of intervention ranging from \$17,000 to \$39,000 per QALY, comfortably within the \$50,000 threshold for accepted economic value. • A two-year follow-up of a collaborative care RCT found the intervention group experienced an incremental QALY increase of 0.049 for an incremental intervention cost of \$201 per person per year. • One study modelled the effect of collaborative care on worksite productivity compared to usual care, from the employer perspective (using self-reported performance at work and absenteeism), finding that the incremental cost of enhanced care was an average of \$181 per person per year and the cost of enhanced plus usual care |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|--|--|--|
| | | | | plus training costs was \$680 per person per year (two-year intervention cost was \$118,759 and the productivity benefits to be \$477,000, for a return on investment of 302%). |
| | Coventry, P.A., Hudson, J.L., Kontopantelis, E., Archer, J., Richards, D.A., Gilbody, S., Lovell, K., Dickens, C., Gask, L., Waheed, W., and Bower, P. (2014) 'Characteristics of Effective Collaborative Care for Treatment of Depression: A Systematic Review and Meta-Regression of 74 Randomised Controlled Trials', in <i>PLoS ONE</i> 9:9 | I Systematic Review with meta-regression | N/A (74 trials - inclusive of randomised controlled trials of collaborative care for adults 18 years with a primary diagnosis of depression or mixed anxiety and depressive disorder) <ul style="list-style-type: none"> • Key characteristics of collaborative care: • Multi-professional approach to patient care • Structured management plan • Scheduled patient follow-ups • Enhanced inter-professional communication | <ul style="list-style-type: none"> • Positive: Collaborative care that included psychological interventions predicted improvement in depression (b coefficient 20.11, 95% CI 20.20 to 20.01, p = 0.03). Systematic identification of patients (relative risk 1.43, 95% CI 1.12 to 1.81, p = 0.004) and the presence of a chronic physical condition (relative risk 1.32, 95% CI 1.05 to 1.65, p = 0.02) predicted use of anti-depressant medication. This indicates that trials of collaborative care that included psychological treatment, with or without anti-depressant medication, appeared to improve depression more than those without psychological treatment. • Compared with usual care, collaborative care was associated with improvements in depressive symptoms (standardised mean difference, SMD 20.28, 95% CI 20.33 to 20.23; I² = 62.2%, 95% CI 52.2% to 70.1%; Figure S1) and increased anti-depressant use (relative risk, RR 1.53, 95% CI 1.40 to 1.68; I² = 80.8%, 95% CI 75.8% to 84.8%; Figure S2). |
| | Tully, P., and Baumeister, H. (2015) 'Collaborative care for comorbid depression and coronary heart | I Systematic review and meta analysis | N/A | <ul style="list-style-type: none"> • Mixed: Collaborative care models achieved small positive effects for depression, anxiety and mental quality of |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|--|
| | disease: a systematic review and meta-analysis of randomised controlled trials', in <i>BMJ Open</i> 5:12 | | | life. Collaborative care led to a significant reduction of major adverse cardiac events in the short term, but these were not sustained. |
| | Morgan, M.A.J., Coates, M.J., Dunbar, J.A., Prasuna, R., and Schlicht, K. (2013) 'The TrueBlue model of collaborative care using practice nurses as case managers for depression alongside diabetes or heart disease: a randomised trial', in <i>BMJ Open</i> 3:1 | II RCT | <ul style="list-style-type: none"> Cohort: Participants with depression and one or both of type 2 diabetes and coronary heart disease. Cohort size: n=400, randomly assigned to: <ul style="list-style-type: none"> Usual-care group (n=194) Intervention group (n=206), who had a practice nurse act as a case manager in identifying depression, reviewing pathology results, lifestyle risk factors and patient goals and priorities | <ul style="list-style-type: none"> Positive: TrueBlue participants showed significantly improved depression and treatment intensification, sustained over 12 months of intervention and reduced 10-year cardiovascular disease risk. Mean depression scores after 6 months of intervention for patients with moderate-to-severe depression decreased by 5.7 ± 1.3 compared with 4.3 ± 1.2 in control, a significant ($p=0.012$) difference, with a 95% confidence range. |
| | Katon, W., Lin, E., Von Korff, M., Ciechanowski, P., Ludman, E.J., Young, B., Peterson, D., Rutter, C.M., McGregor, M., and McCulloch, D. (2010) 'Collaborative Care for Patients with Depression and Chronic Illnesses', in <i>N Engl J Med</i> 363, pp 2611-2620. | II RCT | <ul style="list-style-type: none"> Cohort: Participants with poorly controlled diabetes, coronary heart disease, or both and coexisting depression Cohort size: n=214, randomly assigned to: <ul style="list-style-type: none"> Usual-care group Intervention group, in which a medically supervised nurse, working with each patient's primary care physician, | <ul style="list-style-type: none"> Positive: As compared with controls, patients in the intervention group had greater overall 12-month improvement across glycated hemoglobin levels (difference, 0.58%), LDL cholesterol levels (difference, 6.9 mg per deciliter [0.2 mmol per liter]), systolic blood pressure (difference, 5.1 mm Hg), and SCL-20 depression scores (difference, 0.40 points) ($P<0.001$). Patients in the intervention group also were more likely to have one or more adjustments of insulin ($P=0.006$), antihypertensive |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|---|
| | | | provided guideline-based, collaborative care management, with the goal of controlling risk factors associated with multiple diseases. | medications ($P<0.001$), and antidepressant medications ($P<0.001$), and they had better quality of life ($P<0.001$) and greater satisfaction with care for diabetes, coronary heart disease, or both ($P<0.001$) and with care for depression ($P<0.001$). As compared with usual care, an intervention involving nurses who provided guideline-based, patient-centered management of depression and chronic disease significantly improved control of medical disease and depression. |
| | Katon, W., Russo, J., Lin, E.H.B., Schmittdiel, J., Ciechanowski, P., Ludman, E., Peterson, D., Young, B., and Von Korff, M. (2012) 'Cost-effectiveness of a Multicondition Collaborative Care Intervention: A Randomized Controlled Trial', in <i>Arch Gen Psychiatry</i> 69:5 | II RCT | <ul style="list-style-type: none"> • Cohort: adults with depressive disorder and poorly controlled diabetes or CHD. • Cohort size: $n=214$, randomly assigned to: <ul style="list-style-type: none"> - Multi-condition collaborative treatment program (TEAM-care) - Usual primary care (UC) | <ul style="list-style-type: none"> • Positive: Over 24 months, compared with usual care controls, intervention patients had a mean of 114 (95% CI, 79 to 149) additional depression-free days and an estimated 0.335 (95% CI, -0.18 to 0.85) additional QALYs. Intervention patients also had lower mean outpatient health costs of \$594 per patient (95% CI, $-\\$3,241$ to $\\$2,053$) relative to usual care patients. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|---|----------------------|-------------|---|
| Recommendation 3.2: Invest in promotion, prevention and early intervention | | | | |
| Promotion | N/A | | | <p>There is a strong movement in the sector to move from promotion to building resiliency and social connection, focused primarily on youth.</p> <p>https://www.vichealth.vic.gov.au/media-and-resources/publications/mental-wellbeing-strategy</p> <p>Evidence base for promotion is very limited.</p> <p>https://mhaustralia.org/publication/invest-now-save-later-economics-promotion-prevention-and-early-intervention-mental</p> |
| CBT for children and young people who had one or both parents with a depressive disorder | Muñoz, R. F., Beardslee, W. R., and Leykin, Y. (2012) 'Major Depression Can Be Prevented', in <i>The American Psychologist</i> , 67:4, pp 285–295. http://doi.org/10.1037/a0027666 | I Meta-analysis | N/A | <ul style="list-style-type: none"> • Positive: Meta-analyses suggest that 22% to 38% of major depressive episodes could be prevented with currently available methods. We argue that, if major depressive episodes can be prevented, the healthcare system should provide routine access to evidence-based depression prevention interventions, just as it provides inoculations for other common and debilitating health problems. • At the same time, researchers should pursue the major directions advocated by the IOM report to increase the enduring effectiveness of future prevention interventions. These directions include taking a developmental perspective, learning to identify groups at high risk, and testing evidence-based interventions that are likely to have the widest reach. Scientific evidence has shown that clinical depression can be averted. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|-------------|---|
| | Cuijpers, P., van Straten, A., Smit, F., Mihalopoulos, C., and Beekman, A. (2008) 'Preventing the onset of depressive disorders: A meta-analytic review of psychological intervention', in <i>American Journal of Psychiatry</i> 165, pp 1272–1280. | I Meta-analysis | N/A | <ul style="list-style-type: none"> • Positive: Prevention of new cases of depressive disorders does seem to be possible. Prevention may become an important way, in addition to treatment, to reduce the enormous public health burden of depression in the coming years. • After a comprehensive literature search, 19 studies were identified that met inclusion criteria. The studies had to be randomized controlled studies. • The mean incidence rate ratio was 0.78, indicating a reduction of the incidence of depressive disorders by 22% in experimental compared with control groups. Heterogeneity was low to moderate ($I^2=33\%$). The number needed to treat to prevent one case of depressive disorder was 22. Moderator analyses revealed no systematic differences between target populations or types of prevention (universal, selective, or indicated). The data included indications that prevention based on interpersonal psychotherapy may be more effective than prevention based on cognitive-behavioral therapy. |
| | Dray, J., Bowman, J., Campbell, E., Freund, M., Wolfenden, L., Hodder, R. K., McElwaine, K., Tremain, D., Bartlem, K., Bailey, J., Small, T., Palazzi, K., Oldmeadow, C., and Wiggers, J. (2017) 'Systematic | I Meta-analysis | N/A | <ul style="list-style-type: none"> • Positive but limited evidence base: The findings may suggest most promise for using universal resilience-focused interventions at least for short-term reductions in depressive and anxiety symptoms for children and adolescents, |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|--|--|
| | review of universal resilience-focused interventions targeting child and adolescent mental health in the school setting', in <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> , 56:10, pp 813-824. | | | <p>particularly if a cognitive-behavioural therapy based approach is used.</p> <ul style="list-style-type: none"> The limited number of trials providing data amenable for meta-analysis for some outcomes and subgroups, the variability of interventions, study quality, and bias mean that it is not possible to draw more specific conclusions. Identifying what intervention qualities (such as number and type of protective factor) achieve the greatest positive effect per mental health problem outcome remains an important area for future research. |
| | Clarke, G. N., Hornbrook, M., Lynch, F., Polen, M., Gale, J., Beardslee, W. R. Seeley, J. (2001) 'A randomized trial of a group cognitive intervention for preventing depression in adolescent offspring of depressed parents', in <i>Archives of General Psychiatry</i> 58, pp 1127-1134. | II RCT | <ul style="list-style-type: none"> Cohort: At-risk offspring (aged 13-18 years) of adults treated for depression in a health maintenance organization (HMO) Cohort size: n=94 randomised to: <ul style="list-style-type: none"> Intervention group (n=45) receiving usual care plus a 15-session group cognitive therapy prevention program Control group (n=49) receiving usual care | <ul style="list-style-type: none"> Positive: Survival analysis of incident major depressive episodes during a median 15-month follow-up found a significant advantage ($P = .003$) for the experimental condition (9.3% cumulative major depression incidence) compared with the usual-care control condition (28.8%) Significant treatment-by-time (program) effects for the Center for Epidemiological Studies Depression Scale ($P = .005$) and the Global Assessment of Functioning scores ($P = .04$). |
| | Compas, B. E., Forehand, R., Keller, G., Champion, J. E., Rakow, A., Reeslund, K. L., Cole, D. A. (2009) 'Randomized controlled trial of a | II RCT | <ul style="list-style-type: none"> Cohort: Parents with a history of depression and their children aged between 9 and 15 | <ul style="list-style-type: none"> Positive: The family group intervention produced significant benefits in reducing children's depressive symptoms, anxiety/depressive symptoms, and |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|---|
| | family cognitive-behavioral preventive intervention for children of depressed parents', in <i>Journal of Consulting and Clinical Psychology</i> 77, pp 1007–1020. | | <ul style="list-style-type: none"> Cohort size: n=111 families (155 children), randomised to: <ul style="list-style-type: none"> Intervention group (n=56 families with 80 children) receiving a family cognitive-behavioural preventative intervention Control group (n=55 families with 75 children) receiving written information about depression | <ul style="list-style-type: none"> internalizing symptoms, and marginally significant effects on externalizing symptoms, relative to the provision of written information about depression to parents and children. This benefit prevailed at 12 months after the initiation of the intervention. This work builds on previous studies of interventions with this high-risk group of children and provides further evidence of the promise for the reduction of symptoms and disorders in families of parents who suffer from depression. |
| | Garber, J., Clarke, G. N., Weersing, V. R., Beardslee, W. R., Brent, D. A., Gladstone, T. R. G., and Iyengar, S. (2009) 'Prevention of depression in at-risk adolescents: A randomized controlled trial' in <i>JAMA: Journal of the American Medical Association</i> 301, pp 2215–2224. | II RCT | <ul style="list-style-type: none"> Cohort: Adolescents (aged 13-17 years) offspring of parents with current or prior depressive disorders Cohort size: n=316, randomised to: <ul style="list-style-type: none"> Intervention group (n=159), receiving eight 90-minute group cognitive behavioural therapy in weekly sessions, followed by six-monthly continuation sessions Control group (n=157) receiving treatment as usual. | <ul style="list-style-type: none"> Mixed: The group cognitive behavioural prevention program had a significant prevention effect through the 9-month follow-up period based on both clinical diagnoses (21.4% vs 32.7%; HR, 0.63; 95% confidence interval [CI], 0.40-0.98) and self-reported depressive symptoms (coefficient, -1.1; z = -2.2; P = .03). However, this effect was not evident for adolescents with a currently depressed parent (31.2% vs 24.3%; HR, 1.43; 95% CI, 0.76-2.67). |
| | Sandler, I., Ayers, T. S., Tein, J.Y., Wolchik, S., Millsap, R., Khoo, S. T., | II RCT | <ul style="list-style-type: none"> Cohort: Bereaved youth and spousally-bereaved parents | <ul style="list-style-type: none"> Positive: This study demonstrates efficacy of the Family Bereavement |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|--|--|
| | Kaplan D, Ma Y, Luecken L, Schoenfelder E., Coxe, S. (2010) 'Six-year follow-up of a preventive intervention for parentally-bereaved youth: A randomized controlled trial' in <i>Archives of Pediatrics and Adolescent Medicine</i> , 164, pp 907-915. doi:10.1001/archpediatrics.2010.173 | | <ul style="list-style-type: none"> Cohort size: n=156 families (244 children) randomised to: <ul style="list-style-type: none"> Intervention group (n=90 families, 135 children) receiving Family Bereavement Program which included 12 group sessions for caregivers and youth Control group (n=66 families, 109 children) receiving bereavement books for youth and caregivers | <p>Program to reduce mental health problems of bereaved youths and their parents six years later.</p> <ul style="list-style-type: none"> Youths in the FBP as compared with those in the literature control group had significantly lower externalizing problems as reported by caregivers and youths (adjusted mean, -0.06 vs 0.13, respectively; P = .02) and on teacher reports of externalizing problems (adjusted mean, 52.69 vs 56.27, respectively; P = .001) and internalizing problems (adjusted mean, 47.29 vs 56.27, respectively; P = .002), and they had higher self-esteem (adjusted mean, 33.93 vs 31.91, respectively; P = .005). Parents in the FBP had lower depression scores than those in the LC (adjusted mean, 5.48 vs 7.83, respectively; P = .04). |
| | Kellam, S. G., Brown, C. H., Poduska, J. M., Ialongo, N. S., Wang, W., Toyinbo, P., Petras H., Ford C., Windham A., Wilcox, H. C. (2008) 'Effects of a universal classroom behavior management program in first and second grades on young adult behavioral, psychiatric, and social outcomes' <i>Drug and Alcohol Dependence</i> , 95, pp 5–28. | II RCT | <ul style="list-style-type: none"> Cohort: Adolescents in poor to lower-middle class, mainly African American urban areas Cohort size: n=992 randomised to: <ul style="list-style-type: none"> Intervention group (n=238) receiving the Good Behaviour Game program (a method of classroom behaviour management used by teachers) Control group (n=515) receiving Mastery | <ul style="list-style-type: none"> Positive: By young adulthood significant impact was found among males, particularly those in first grade who were more aggressive, disruptive, in reduced drug and alcohol abuse/dependence disorders, regular smoking, and antisocial personality disorder. These results underline the value of a first-grade universal prevention intervention. REPLICATION: A replication was implemented with the next cohort of first-grade children with the same teachers during the following school year, but with diminished mentoring and monitoring of |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | | | <p>Learning, a curriculum-and-instruction program directed at reading achievement</p> <ul style="list-style-type: none"> - Control group (n=169) receiving the standard program | <p>teachers. The results showed significant GBG impact for males on drug abuse/dependence disorders with some variation. For other outcomes the effects were generally smaller but in the predicted direction.</p> |
| | Beardslee, W. R., Wright, E. J., Gladstone, T. R. G., and Forbes, P. (2007) 'Long-term effects from a randomized trial of two public health preventive interventions for parental depression', in <i>Journal of Family Psychology</i> , 21, pp 703–713. | II RCT | <ul style="list-style-type: none"> • Cohort: Families in which at least one parent suffered from a mood disorder and at least one non-depressed child was within the 8-15-year age range • Cohort size: n=105 families randomised to: <ul style="list-style-type: none"> - Intervention group receiving Family Talk, a six-session intervention that offered family-specific psychoeducational material and helped families have conversations about depression - Control group receiving the same material via public health lectures | <ul style="list-style-type: none"> • Positive: These findings demonstrate that brief, family-centered preventive interventions for parental depression may contribute to long-term, sustained improvements in family functioning. • This article presents long-term effects of a randomized trial evaluating two standardized, manual-based prevention strategies for families with parental mood disorder: informational lectures and a brief, clinician-based approach including child assessment and a family meeting. • Both interventions produced sustained effects through the sixth assessment point, approximately 4.5 years after enrollment, with relatively small sample loss of families (<14%). Clinician-based families had significantly more gains in parental child-related behaviors and attitudes and in child-reported understanding of parental disorder. Child and parent family functioning increased for both groups and internalizing symptoms decreased for both groups, with no significant group differences. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|---|----------------------|-------------|---|
| Home-based screening for pregnant women, with treatment for those who need it | Muñoz, R. F., Beardslee, W. R., and Leykin, Y. (2012). 'Major Depression Can Be Prevented', in <i>The American Psychologist</i> , 67:4, pp 285–295. http://doi.org/10.1037/a0027666 | I Meta-analysis | • N/A | <ul style="list-style-type: none"> • Positive: Meta-analyses suggest that 22% to 38% of major depressive episodes could be prevented with currently available methods. We argue that, if major depressive episodes can be prevented, the healthcare system should provide routine access to evidence-based depression prevention interventions, just as it provides inoculations for other common and debilitating health problems. • At the same time, researchers should pursue the major directions advocated by the IOM report to increase the enduring effectiveness of future prevention interventions. These directions include taking a developmental perspective, learning to identify groups at high risk, and testing evidence-based interventions that are likely to have the widest reach. Scientific evidence has shown that clinical depression can be averted. |
| | Cuijpers, P., van Straten, A., Smit, F., Mihalopoulos, C., and Beekman, A. (2008) 'Preventing the onset of depressive disorders: A meta-analytic review of psychological intervention', in <i>American Journal of Psychiatry</i> 165, pp 1272–1280. | I Meta-analysis | • N/A | <ul style="list-style-type: none"> • Positive: Prevention of new cases of depressive disorders does seem to be possible. Prevention may become an important way, in addition to treatment, to reduce the enormous public health burden of depression in the coming years. • After a comprehensive literature search, 19 studies were identified that met inclusion criteria. The studies had to be randomized controlled studies. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|--|---|
| | | | | <ul style="list-style-type: none"> The mean incidence rate ratio was 0.78, indicating a reduction of the incidence of depressive disorders by 22% in experimental compared with control groups. Heterogeneity was low to moderate ($I^2=33\%$). The number needed to treat to prevent one case of depressive disorder was 22. Moderator analyses revealed no systematic differences between target populations or types of prevention (universal, selective, or indicated). The data included indications that prevention based on interpersonal psychotherapy may be more effective than prevention based on cognitive-behavioral therapy. |
| | Tandon, S. D., Perry, D. F., Mendelson, T., Kemp, K., and Leis, J. A. (2011). 'Preventing perinatal depression in low-income home visiting clients: A randomized controlled trial', in <i>Journal of Consulting and Clinical Psychology</i> , 79, pp 707–712. doi:10.1037/a0024895 | II RCT | <ul style="list-style-type: none"> Cohort: Low-income women who were pregnant, or had a child less than six months of age, and assessed as at risk for perinatal depression Cohort size: n=61 randomised to - <ul style="list-style-type: none"> Intervention group (n=32) receiving a six-week, group based CBT and home visiting services Control group (n=29) receiving home visit services only | <ul style="list-style-type: none"> Positive: This study provides preliminary data on the efficacy of a cognitive-behavioural intervention to prevent perinatal depression among home visiting clients and suggests it is feasible to embed such an intervention in home visitation programs. Repeated measures analysis of variance indicated that there was a significant Time \times Condition interaction, $F(2, 112) = 4.1, p = .02$. At three months postintervention, 9 of 27 (33%) women receiving usual care reported levels of depressive symptoms that met clinical cutoff for depression on the MMS compared with 3 of 32 (9%) women in |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|-------------------------|--|--|
| | | | | the intervention condition, $\chi^2(1, N = 59) = 5.18, p < .05$. |
| | Brugha, T. S., Morrell, C. J., Slade, P., and Walters, S. J. (2011) 'Universal prevention of depression in women postnatally: cluster randomized trial evidence in primary care', in <i>Psychological Medicine</i> , 41:4, pp 739–748. | II RCT | <ul style="list-style-type: none"> • Cohort: Pregnant women with no severe or enduring mental health problems • Cohort size: n=2,241 randomised to - <ul style="list-style-type: none"> - Intervention group (n=1,474) receiving care from home visitors trained in identifying depressive symptoms and face-to-face clinical assessment, and in providing psychologically orientated sessions based on CBT or person-centred principles - Control group (n=767) receiving care as usual from home visitors | <ul style="list-style-type: none"> • Positive - This study provides new evidence of a universal, enduring preventive effect for depression in women who screen negative for depression postnatally. • After adjusting for individual-level covariates, living alone, previous postnatal depression (PND), the presence of one or more adverse life events and the 6-week EPDS score, the odds ratio (OR) for EPDS ≥ 12 at 6 months was 0.71 [95% confidence interval (CI) 0.53–0.97, $p=0.031$] for the intervention group (IG) women compared with the control (CAU) group women. Two subgroups were formed by baseline severity: a 'subthreshold' subgroup with a 6-week EPDS score of 6–11 (n=999) and a 'lowest severity' subgroup with a 6-week EPDS score of 0–5 (n=1242). There was no difference in psychological effectiveness by subgroup (interaction term: $z=-0.28, p=0.782$). |
| | Ammerman, R. T., Putnam, F. W., Stevens, J., Bosse, N. R., Short, J. A., Bodley, A. I., and Van Ginkel, J. B. (2011) 'An open trial of in-home CBT for depressed mothers in home visitation', in <i>Maternal Child Health</i> | III-2 Open trial design | <ul style="list-style-type: none"> • Cohort: First-time, high risk mothers recruited from a community-based home visitation program • Cohort size: n=305, randomised to: | <ul style="list-style-type: none"> • Positive: Findings suggest that In-Home Cognitive Behavioral Therapy (IH-CBT) is a promising approach to addressing maternal depression in the context of home visitation and warrants further study. There was a significantly greater reduction in depressive symptoms in the IH-CBT group relative to their |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|---|--|----------------------|--|---|
| | <i>Journal</i> , 15, pp 1333–1341. doi:10/1007s10995-010-0691-7 | | <ul style="list-style-type: none"> - Intervention group (n=64), receiving In-Home CBT during the first two years of the child's life • Control group (n=241) receiving standard care | <p>counterparts who did not receive the treatment. Results from pre-post comparisons showed that treated mothers had decreased diagnosis of major depression, lower reported stress, increased coping and social support, and increased positive views of motherhood at post-treatment.</p> <ul style="list-style-type: none"> • A randomized clinical trial, in which participants are randomly assigned to treatment and control conditions, is needed to establish that IH-CBT is responsible for positive treatment outcomes. |
| Early intervention for individuals experiencing initial onset of psychosis | Randall, J. R., Vokey, S., Loewen, H., Martens, P. J., Brownell, M., Katz, A., Chateau, D. (2015), 'A Systematic Review of the Effect of Early Interventions for Psychosis on the Usage of Inpatient Services', in <i>Schizophrenia Bulletin</i> , 41:6, pp 1379–1386. | I – Meta-analysis | <ul style="list-style-type: none"> • N/A | <ul style="list-style-type: none"> • Positive, but limited: These results suggest that early intervention programs, which generally engage in some form of Assertive Community Treatment, are superior to standard of care, with respect to reducing inpatient service usage. Wider use of these programs may prevent the occurrence of admission for patients experiencing the onset of psychotic symptoms. • Future research should attempt to utilize larger RCT studies to examine which specific components of these early intervention programs are beneficial and which may be unnecessary. One area of concern for future research is whether the improvement afforded by these intervention programs can be maintained beyond the first few years. Some |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|--|
| | | | | research has suggested that the gains from early intervention fade after the patients leave the program. Potential research could examine whether expanding the length of treatment (perhaps indefinitely if needed), or development of post-intervention services for long-term follow-up are effective at maintaining these treatment benefits. |
| | Behan, C., Masterson, S., and Clarke, M. (2016) 'Systematic review of the evidence for service models delivering early intervention in psychosis outside the stand-alone centre', in <i>Early Intervention in Psychiatry</i> , 11:1, pp 3-13. | I – Meta-analysis | <ul style="list-style-type: none"> N/A | <ul style="list-style-type: none"> Mixed: There is a paucity of evidence evaluating models other than specialist models in early intervention. Published studies are heterogeneous in design and outcome. Although there have been two recent trials evaluating integrated early intervention in comparison with treatment as usual, it remains unclear whether reported improved outcomes of specialist centres apply to other models. The findings of this review raise some important questions and highlight both the benefits and the challenges in delivering EI. On the one hand, specialist EI teams report better outcomes and may be more cost-effective despite their initially expensive nature, but may not be practical models of service delivery particularly in rural and remote areas. A final area of consideration is whether early intervention services should consider adding a tiered model of care and extending the duration of intervention |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | | | | so that specialist services can be provided on a more extended basis to those who are identified early as having more complex needs. |
| | Stafford M. R., Jackson H., Mayo-Wilson E., Morrison A. P., Kendall T. (2013) 'Early interventions to prevent psychosis: systematic review and meta-analysis', in BMJ 346, pp 185. | I – Meta-analysis | <ul style="list-style-type: none"> N/A | <ul style="list-style-type: none"> Positive, but limited: Although evidence of benefits for any specific intervention is not conclusive, these findings suggest that it might be possible to delay or prevent transition to psychosis. Further research should be undertaken to establish conclusively the potential for benefit of psychological interventions in the treatment of people at high risk of psychosis. Further research should be undertaken in the form of a large, multicentre trial of combined family and individual CBT for high risk groups, evaluating both benefits and potential harms (for example, possible increased stigma). In the meantime, the use of these psychological treatments now represents the most appropriate intervention available for helping people avert what could be a personal, social, and financial catastrophe. |
| | Santesteban-Echarri O., Paino M., Rice S., González-Blanch C., McGorry P., Gleeson J., Alvarez-Jimenez M. (2017) 'Predictors of functional recovery in first-episode psychosis: A systematic review and meta-analysis | I – Meta-analysis | <ul style="list-style-type: none"> N/A | <ul style="list-style-type: none"> Positive: These findings strongly support the rationale for early intervention in first-episode psychosis (FEP). Novel treatments targeting cognitive deficits may improve functional outcomes in FEP. Given that duration of untreated psychosis (DUP) is a malleable factor that |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|--|
| | of longitudinal studies', in <i>Clinical Psychology Review</i> 58, pp 59-75. | | | could be targeted for treatment, our findings support the importance of early intervention for psychosis and ultra-high risk for psychosis as a key strategy to promote long-term functional recovery. Early intervention programs targeting vulnerable populations with greater neurocognitive deficits should be a priority given the predictive value of worse functioning over time. This approach could constitute a secondary prevention method which may attenuate active disruption of neurodevelopmental mechanisms. |
| | McCrone P., Craig T.K.L., Power P. and Garety P.A. 2010, 'Cost-Effectiveness of an Early Intervention Service for People with Psychosis', <i>British Journal of Psychiatry</i> 196, pp 377-382. | II RCT | <ul style="list-style-type: none"> • Cohort: Individuals (ages 16-40) in their first episode of psychosis (or those who had previously discontinued treatment) • Cohort size: n=144, randomised to: <ul style="list-style-type: none"> - Intervention group (n=71), receiving assertive outreach from Lambeth Early Onset (LEO) team, followed by six and 18 month follow-ups - Control group (n=73) receiving standard care | <ul style="list-style-type: none"> • Positive: Early intervention did not increase costs and was highly likely to be cost-effective when compared with standard care. Total mean costs were £11,685 in the early intervention group and £14,062 in the standard care group, with the difference not being significant (95% CI -£8,128 to £3,326). When costs were combined with improved vocational and quality of life outcomes it was shown that early intervention would have a very high likelihood of being cost-effective. |
| | Reynolds S, Wilson C, Austin J, Hooper L. (2012) 'Effects of psychotherapy for anxiety in children | I Meta-analysis | <ul style="list-style-type: none"> • N/A | <ul style="list-style-type: none"> • Positive but variable trial quality: Using a systematic search for randomized |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|-------------|--|
| | and adolescents: a meta-analytic review', in <i>Clinical Psychology Review</i> 32:4, pp 251-262. | | | <p>controlled trials which included a control condition and reported data suitable for meta-analysis, 55 studies were included. Eligible studies were rated for methodological quality and outcome data were extracted and analyzed using standard methods. Trial quality was variable, many studies were underpowered and adverse effects were rarely assessed; however, quality ratings were higher for more recently published studies.</p> <ul style="list-style-type: none"> • Most trials evaluated cognitive behavior therapy or behavior therapy and most recruited both children and adolescents. Psychological therapy for anxiety in children and young people was moderately effective overall, but effect sizes were small to medium when psychological therapy was compared to an active control condition. The effect size for non-CBT interventions was not significant. Parental involvement in therapy was not associated with differential effectiveness. • Treatment targeted at specific anxiety disorders, individual psychotherapy, and psychotherapy with older children and adolescents had effect sizes which were larger than effect sizes for treatments targeting a range of anxiety disorders, group psychotherapy, and psychotherapy with younger children. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | Brunwasser, S. M., Gillham, J. E., and Kim, E. S. (2009) 'A meta-analytic review of the Penn Resiliency Program's effect on depressive symptoms', in <i>Journal of Consulting and Clinical Psychology</i> 77, pp 1042–1054. doi:10.1037/a0017671 | I Meta-analysis | <ul style="list-style-type: none"> N/A | <ul style="list-style-type: none"> A recent meta-analysis evaluating 17 controlled studies confirmed that at follow-up, there were fewer depressive symptoms at post-intervention and follow-up assessments among PRP participants than among those receiving no intervention. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|--|--|-----------------------|--|---|
| Recommendation 3.3: Use e-health as an enabler | | | | |
| Internet-based CBT programs and general e-mental health | Paganini, S., Teigelkötter, W., Buntrock, C., and Baumeister, H. (2017) 'Economic evaluations of internet- and mobile-based interventions for the treatment and prevention of depression: A systematic review' in <i>Journal of Affective Disorders</i> 225, pp 733–755. | I Systematic Analysis | N/A (7 studies) | <ul style="list-style-type: none"> • Positive: In six studies, internet- and mobile-based interventions were classified as likely to be cost-effective with an incremental cost-utility ratio between €3,088 and €22,609. |
| | Spek, V., Cuijpers, P., Nyklicek, I., Riper, H., Keyzer, J., and Pop, V. (2007) 'Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: a meta-analysis', in <i>Psychological Medicine</i> 37:3, pp 319-328. | I Meta-analysis | N/A (12 randomized controlled trials, with n=2,334 participants) | <ul style="list-style-type: none"> • Positive: The review indicated that internet-based CBT interventions, especially with therapist support, were effective. • In general, effect sizes of internet-based interventions for symptoms of anxiety were larger than effect sizes for depressive symptoms; however, this might be explained by differences in the amount of therapist support. • Interventions for anxiety had a large mean effect size (FEA and MEA d=0.96) and very low heterogeneity. When examining the second set of subgroups, based on therapist assistance, no significant heterogeneity was found. • Interventions with therapist support (n=5) had a large mean effect size, while interventions without therapist support (n=6) had a small mean effect size (FEA d=0.24, MEA d=0.26). |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|--|---|
| | Andrews, G., Cuijpers, P., Craske, M. G., McEvoy, P., and Titov, N. (2010) 'Computer Therapy for the Anxiety and Depressive Disorders Is Effective, Acceptable and Practical Health Care: A Meta-Analysis', in <i>PLoS ONE</i> , 5:10. | I-Meta-analysis | N/A (22 randomized controlled trials of computerised cognitive behaviour therapy versus a treatment or control condition in people who met diagnostic criteria for major depression, panic disorder, social phobia or generalized anxiety disorder) | <ul style="list-style-type: none"> • Positive: Computerized CBT for anxiety and depressive disorders, especially via the internet, has the capacity to provide effective acceptable and practical healthcare for those who might otherwise remain untreated. • The mean effect size superiority was 0.88 (NNT 2.13), and the benefit was evident across all four disorders. Improvement from computerized CBT was maintained for a median of 26 weeks follow-up. Acceptability, as indicated by adherence and satisfaction, was good. Research probity was good and bias risk low. Five studies comparing computerized CBT with traditional face-to-face CBT were identified, and both modes of treatment appeared equally beneficial. |
| | Andersson G., and Cuijpers P. (2009) 'Internet-based and other computerized psychological treatments for adult depression: a meta-analysis', in <i>Cognitive Behaviour Therapy</i> 38:4, pp 196-205. | I-Meta-analysis | N/A (12 randomized controlled trials, with n=2,446 participants) | <ul style="list-style-type: none"> • Positive: Although more studies were needed, internet and computerised treatments were shown to have promise as potential treatments for depression. • Compared with control, internet-based psychological interventions were statistically significantly superior (ES 0.41, 95% CI 0.29 to 0.54, I²=57%). Subgroup analysis indicated that professional support had a significant impact upon the results. Studies that had professional support alongside the intervention had a higher effect size (ES 0.61, 95% CI 0.45 to 0.77, I²=24%) |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|--|
| | | | | compared with those that offered no professional support (ES 0.25, 95% CI 0.14 to 0.35, I ² =10%). |
| | Wright, B., Tindall, L., Littlewood, E., Allgar, V., Abeles, P., Trepel, D., and Ali, S. (2017) 'Computerised cognitive-behavioural therapy for depression in adolescents: feasibility results and 4-month outcomes of a UK randomised controlled trial', in <i>BMJ Open</i> 7:1. | II RCT | <ul style="list-style-type: none"> Cohort: Adolescents reporting mild to moderate symptoms of depression and/or anxiety Cohort size: n=91 randomised to: <ul style="list-style-type: none"> Intervention group (n=45) receiving an eight-session CCBT program (Stressbusters) Control group (n=46) accessing low mood self-help websites | <ul style="list-style-type: none"> Positive: From baseline to 4 months post intervention, BDI scores and MFQ scores decreased for the Stress busters group but increased in the website group. Quality of life, as measured by the EQ-5D-Y, increased for both groups while costs at 4 months were similar to baseline. Good feasibility outcomes were found, suggesting the trial process to be feasible and acceptable for adolescents with depression. |
| | Hoek, W., Schuurmans, J., Koot, H. M., and Cuijpers, P. (2012) 'Effects of Internet-Based Guided Self-Help Problem-Solving Therapy for Adolescents with Depression and Anxiety: A Randomized Controlled Trial', in <i>PLoS ONE</i> 7:8. | II RCT | <ul style="list-style-type: none"> Cohort: Adolescents (aged 12–18) with low mood/depression Cohort size: n=45 randomised to: <ul style="list-style-type: none"> Intervention group (n=22) receiving an internet-based guided self-help problem-solving therapy, five weekly lessons (PST) Waiting list control group (n=23) | <ul style="list-style-type: none"> Positive: Results show that depressive and anxiety symptoms declined in both groups. No support was found, however, for the assumption that Internet-based PST was efficacious in reducing depression and anxiety in comparison to the waiting list control group. This finding could represent lack of power. |
| | Calear, A. L., Christensen, H., Mackinnon, A., Griffiths, K. M., and O'Kearney, R. (2009) 'The YouthMood Project: A cluster randomized controlled trial of an online cognitive | | <ul style="list-style-type: none"> Cohort: Adolescents Cohort size: n=1,477 randomised to: | <ul style="list-style-type: none"> Mixed: At post intervention and six-month follow-up, participants in the intervention condition had significantly lower levels of anxiety than did |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|--|---|
| | behavioral program with adolescents', in <i>Journal of Consulting and Clinical Psychology</i> 77:6, pp 1021-1032. | | <ul style="list-style-type: none"> - Intervention group receiving an online, self-directed cognitive-behavioural therapy program (MoodGYM) - Waiting list control group | <p>participants in the wait-list control condition (Cohen's $d = 0.15-0.25$).</p> <ul style="list-style-type: none"> • The effects of the MoodGYM program on depressive symptoms were less strong, with only male participants in the intervention condition exhibiting significant reductions in depressive symptoms at postintervention and six-month follow-up (Cohen's $d = 0.27-0.43$). |
| | Holla ndare, F., Johnsson, S., Randestad, M., Tillfors, M., Carlbring, P., Andersson, G., and Engstr m, I. (2011) 'Randomized trial of Internet based relapse prevention for partially remitted depression', in <i>Acta Psychiatrica Scandinavica</i> 124, pp 285–294. | II RCT | <ul style="list-style-type: none"> • Cohort: Adults with partially remitted major depression after treatment • Cohort size: $n=84$, randomised to: <ul style="list-style-type: none"> - 10 weeks of Internet-based CBT ($n=42$) - Control group ($n=42$) | <ul style="list-style-type: none"> • Positive: At six months, 10.5% of internet CBT participants experienced relapse, versus 37.8% in the control group. A trend towards a larger reduction in depressive symptoms was observed at post-treatment in the participants who received CBT compared with controls. |
| | Titov, N., Dear, B.F., Johnston, L., Lorian, C., Zou, J., Wootton, B., Spence, J., McEnvoy, P.M., and Ronald, M.R. (2013) 'Improving Adherence and Clinical Outcomes in SelfGuided Internet Treatment for Anxiety and Depression: Randomised Controlled Trial', in <i>PLoS ONE</i> 8:7. | II RCT | <ul style="list-style-type: none"> • Cohort: People with elevated symptoms of anxiety and depression • Cohort size: $n=257$, randomised to: <ul style="list-style-type: none"> - Eight week course either with or without automated emails ($n=206$) - Waitlist control group ($n=51$) | <ul style="list-style-type: none"> • Positive: A new automated transdiagnostic self-guided internet-delivered treatment, the Wellbeing Course, was beneficial, and automated emails facilitated outcomes. Participants in the treatment groups had lower severity of symptoms of depression and anxiety at post-treatment than controls, additionally automated emails increased rates of course completion (58% vs. 35%), and improved outcomes in a subsample with elevated symptoms. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|----------------------|---|--|
| | Robinson, E., Titov, N., Andrews, G., McIntyre, K., Schwencke, G., and Solley, K. (2010) 'Internet treatment for generalised anxiety disorder: a randomised controlled trial comparing clinician vs. technician assistance', in <i>PLoS One</i> 5:6. | II RCT | <ul style="list-style-type: none"> • Cohort: Community-based volunteers with generalized anxiety disorder • Cohort size: n=150, randomised to: <ul style="list-style-type: none"> - Clinician-assisted 10-week treatment program (n=47) - Technician-assisted 10-week treatment program (weekly email or telephone contact) (n=50) • Delayed treatment (n=47) | <ul style="list-style-type: none"> • Positive: Both clinician and technician assisted internet based cognitive behavioural therapy resulted in large effect sizes and clinically significant improvements for depression and generalised anxiety disorders comparable to those associated with face-to-face treatment. |
| | Wims, E., Titov, N., Andrews, G., and Choi, I. (2010) 'Clinician-assisted Internet-based treatment is effective for panic: A randomized controlled trial', in <i>Australian and New Zealand Journal of Psychiatry</i> 44, pp 599–607. | II RCT | <ul style="list-style-type: none"> • Cohort: Individuals meeting diagnostic criteria for panic disorder with agoraphobia • Cohort size: n=59, randomised to: <ul style="list-style-type: none"> - Treatment group (completed the Panic program, comprising six on-line lessons, weekly homework assignments, received weekly email contact from a psychiatry registrar, and contributed to a moderated online discussion forum with other participants) (n=32) - Waitlist control group (n=27) | <ul style="list-style-type: none"> • Positive: Internet-based clinician-assisted cognitive behavioural treatment program (the Panic program) for panic disorder was effective at reducing symptoms of panic, as well as observing significant reductions on measures of disability and depression. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|---|----------------------|---|---|
| | Titov, N., Andrews, G., Robinson, E., Schwencke, G., Johnston, L., Solley, K., and Choi, I. (2009) 'Clinician-assisted Internet-based treatment is effective for generalized anxiety disorder: randomized controlled trial', in <i>Australian and New Zealand Journal of Psychiatry</i> 43, pp 905-912. | II RCT | <ul style="list-style-type: none"> • Cohort: individuals meeting diagnostic criteria for generalized anxiety disorder (GAD) • Cohort size: n=48, randomly assigned to: <ul style="list-style-type: none"> - Worry program (participants complete six online lessons, weekly homework assignments, receive weekly email contact from a clinical psychologist, and contribute to a moderated online discussion forum with other participants) - Waitlist control group | <ul style="list-style-type: none"> • Positive: Internet-based clinician-assisted computerized cognitive behavioural treatment (CaCCBT) program for generalized anxiety disorder (the Worry program) resulted in clinically significant improvements. With reduction of symptoms of worry and reduced symptoms of depression observed. Participants found the treatment program acceptable and satisfactory. |
| | Wright, J.H., Wright, A.S., Albano, A.M., Basco, M.R., Goldsmith, L.J., Raffield, T., and Otto, M.W. (2005) 'Computer-Assisted Cognitive Therapy for Depression: Maintaining Efficacy While Reducing Therapist Time' in <i>Am J Psychiatry</i> 162, pp 1158–1164. | II RCT | <ul style="list-style-type: none"> • Cohort: Medication-free participants with major depressive disorder • Cohort size: n= 45, randomly assigned to: <ul style="list-style-type: none"> - Cognitive therapy (n=15) (nine sessions over eight weeks) (nine sessions over eight weeks) - Computer-assisted cognitive therapy (n=15) (nine sessions over eight weeks) - Wait list (n=15) | <ul style="list-style-type: none"> • Positive: A multimedia, computer-assisted form of cognitive therapy with reduced therapist contact was as efficacious as standard cognitive therapy. |

| Intervention type | Reference | Strength of evidence | Description | Findings |
|-------------------|--|---|---|--|
| | Donker, T., Bennett, K., Bennett, A., Mackinnon, A., van Stratan, A., Cuijpers, P., Christensen, H., and Griffiths, K. (2013) 'Internet-Delivered Interpersonal Psychotherapy Versus Internet-Delivered Cognitive Behavioral Therapy for Adults With Depressive Symptoms: Randomized Controlled Noninferiority Trial', in <i>J Med Internet Res</i> 15:5, pp 82. | II Randomized Controlled Noninferiority Trial | <ul style="list-style-type: none"> • Cohort: Individuals with depressive disorders • Cohort size: n=1843, randomised to: <ul style="list-style-type: none"> - Fully self-guided interpersonal psychotherapy (n=620) - Fully self-guided CBT (n=610) - Active control treatment, MoodGYM (n=613) | <ul style="list-style-type: none"> • Positive: Internet-delivered self-guided interpersonal psychotherapy is effective in reducing depressive symptoms, and may be non-inferior to MoodGYM. • Higher completion rates were achieved for interpersonal psychotherapy and CBT when compared to MoodGYM. |
| | Smit F., Shields L., and Petrea I. (2016) 'Preventing Depression in the WHO European Region - World Health Organisation.' http://www.euro.who.int/_data/assets/pdf_file/0003/325947/New-Preventing-depression.pdf , accessed 27 October 2017. | IV Global Report | N/A | <ul style="list-style-type: none"> • Positive: There is converging evidence that e-health interventions, especially when offered with minimal therapist support, can be as effective as face-to-face interventions offered by qualified therapists. • User compliance with e-health interventions can be low when it is offered without any therapist-led guidance. • 'Blended interventions' with both e-health and some guidance by a therapist or a coach are effective and best designed so that the certain parts of the intervention are guided by a therapist with the routine aspects delegated to the computer. |

Additional references provided throughout the feedback round are included below, excluding confidential references provided.

| Reference | Provided by |
|--|--------------------------------|
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| Allison, S., Bastiampillai, T., Licinio, J., Fuller, DA., Bidargaddi, N., and Sharfstein, SS. (2017) 'When Should Governments Increase the Supply of Psychiatric Beds?', Molecular Psychiatry, 00, pp.1-5 | RANZCP |
| Monitor Deloitte (2017) 'Mental Health and Employers: The Case for Investment' | beyondblue |
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| Waghorn, G., Lockett, H., Bacon, J., Gorman, P., Durie, S. (2009) 'The Importance of Leadership in Implementing Evidence-Based Supported Employment Services for People with Severe Mental Illness', in The International Journal of Leadership in Public Services 5, pp 51-56 | Occupational Therapy Australia |
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