Supplement DS1
Search strategy
The references of previous reviews of SDM in mental healthcare were searched.[24,31] Medline (1946-), PsychInfo (1806-), EMBASE (1980-), CINAHL (1937-) and The Cochrane Central Register of Controlled Trials (CENTRAL) (Issue 8 of 12, August 2013) were also searched in August 2013. Titles, abstracts and keywords were searched in the publication databases using a strategy involving the term 'shared decision making' and related terms. These included patient-oriented terms such as 'patient participation' and 'patient autonomy'; process terms such as 'decision making' and 'empower*'; technique-related terms such as 'decision aid*' and 'communication training'; relational terms such as 'communicat*' and 'working alliance'; and advance treatment planning-related terms such as 'joint crisis plan*' and 'advance statement*'. The search strategy also included the term 'psychosis' and related terms such as 'schizophrenia' and 'schizoaffective disorder'; and the term 'randomized controlled trial' and related terms such as 'randomised clinical trial' and 'controlled trial'. The search terms are listed in full below. No limits were placed on the search with regard to date or publication status. Searches were updated in January 2015.

Shared decision-making terms
Patient-oriented terms
Patient participation
Consumer participation
Patient autonomy
Patient satisfaction
Consumer satisfaction
Patient involve*
Consumer involve*
Patient preference*
Consumer preference*
Patient centered
Client Participation
Client centered
Patient Centered Care

Process terms
Decision making
Informed decision making
Decision process
Informed choice
Empower*
Self-determination
Treatment preference
Self-manage*
Patient decision making
Decision making, clinical
Decision making, patient
Decision support systems, clinical

Technique terms
Decision aid*
Decision support technique*
Communication training
Communication aid*
Communication skill*
Decision support system*
Communication aid*
Communication skill*
Communication skills training

Relationship terms
Shared decision making
Communicat*
Collaborat*
Negotiat*
Working alliance
Therapeutic alliance
Partnership
Cooperat*
Consensus
Doctor patient relation*
Doctor patient communicat*
Nurse patient relation*
Physician patient relation*
Professional patient relation*
Professional client relation*

Advance planning terms
Joint crisis plan*
Advance statement*
Advance directive*
Advance care planning

Psychosis terms
Psychosis
Schizophrenia
Schizophrenic
Schizoaffective disorder
Schizoaffective psychosis
Psychotic disorder
Psychotic

Trial terms
RCT
Randomised Controlled Trial
Randomized Controlled Trial
Randomised Clinical Trial

Randomized Clinical Trial
Controlled Trial
Clinical Trial
Controlled Clinical Study
Controlled study
Controlled Clinical Comparison
Controlled Clinical Trial

Supplement DS2
Risk of bias assessment method

Assessment was carried out by DS and checked with PH, and vice versa, with disagreements being resolved through discussion. Risk of bias ratings are given in Table DS4. A judgement of unclear risk of selection bias was made where randomisation was referred to but described in insufficient detail to determine independent random sequence generation and allocation concealment. There was judged to be low risk of bias where these procedures were explicitly reported.

Blinding of participants and personnel was not possible due to the nature of the interventions, as is the case with trials of psychosocial interventions in general. This resulted in high risk of performance bias across studies. Detection bias was judged to be high where non-blinding of assessors was stated, unclear if no information was given and low if blinding was explicitly reported.

Where data for ≥25% of those randomised was missing, judgement of high risk of attrition bias was made where no account of this was taken in analysis,[72] and unclear risk of attrition bias where it was appropriately accounted for e.g. by controlling for variables associated with missing data. Selective reporting bias was judged to be unclear where there was no availability of a study protocol, and high where outcomes of interest in the review were reported incompletely so as to preclude full inclusion in the meta-analysis.

Risk of other sources of bias included that associated with cluster randomised design, where there might be potential for recruitment bias, and setting, where there might be possibility of cross-contamination through contact between participants in the different groups.

Overview
Most (k=8) studies had at least one judgement of unclear risk of selection bias.[22,23,26,27,29,30–33] Risk of performance bias was high across all studies due to nature of the interventions, which precluded blinding. Insufficient information in reporting also led to unclear detection bias in seven studies,[22,23,26–28,30,31,33] and one RCT stated no attempt to blind assessors was made.[32] Risk of attrition bias was high or unclear on some post-intervention measures in just over half of the studies (k=6).[25–28,32,33] Risk of selective reporting bias was largely unclear, although there was an indication that three of the RCTs did not report all their outcomes.[22,26,33] There was unclear risk of other sources of bias in four trials, namely risk of recruitment bias due to cluster randomised design,[27,30,32] and risk of cross-contamination due to in-patient research setting.[31]

Supplement DS3
GRADE assessment method

Assessment was carried out by DS and checked with PH, and vice versa, with disagreements being resolved through discussion. Results of the assessment are summarised in Table DS5. Outcome quality was downgraded by one point if at least one 'high' risk rating was present for ≥50% studies contributing to an outcome within the Cochrane Risk of Bias assessment. Downgrading by two points occurred where ≥50% relevant studies had at least two 'high' risk ratings. 'High' risk ratings of performance bias were however excluded from the total 'high' risk ratings for each outcome. Risk of performance bias is very commonly found in psychosocial interventions where blinding of participants and personnel is not possible. To rate down for this would be to imply reduced integrity in this body of research as a whole and, as such, was judged to be overly conservative. Furthermore downgrading occurred only where the risk of bias affected the particular outcome in question. For example, if a study had a high degree of missing data, or was at high risk of selective reporting bias, downgrading only occurred where missing data or selective reporting impacted directly the outcome in question.

Indirectness was assessed by considering the relevance of the outcome data to the construct of interest for each outcome, together with that of the study population, nature of the intervention under investigation and the control condition. Because there were fewer than ten studies contributing to each outcome, assessment of publication bias using funnel plots was not undertaken.[21] With regard to inconsistency, downgrading by one point occurred if the I^2 statistic was ≥40%,[16] indicating at least moderate heterogeneity, and by two points if the I^2 statistic was ≥75%, indicating high heterogeneity. With regard to imprecision, downgrading occurred where the outcome represented by either end of the 95% confidence interval might lead to different clinical decision-making.[20] Outcomes were also downgraded for imprecision where the sample size was insufficient to detect a clinically meaningful, small-moderate effect. Heterogeneity of outcome measures precluded possibility of calculating a meaningful Optimal Information Size.[20]

Overall quality of the evidence for each outcome was rated down one level for each factor that had been down-graded, or by two levels where there were especially serious problems with one particular factor.[16]

Table DS1 Trial characteristics and baseline demographic details of participants

Trial	Interventions	Treatment setting	Number randomised (*n* included in analysis)	Included primary outcome (measure)	Included secondary outcome (measure)	Number and location of sites	Baseline demographics			Timing of measures and available follow-up data
							Age, mean (s.d.)	Number female (%)	Number with schizophrenia-spectrum diagnosis (%)	
Hamann *et al* (2006)[27]	Nurse- supported use of paper-based decision aid (30-60 minutes), preparing for consultation with doctor. Training for nurses and doctors involved.	In-patient – acute	54 (Primary outcome: 30, secondary outcome: 36)	Patient-perceived involvement (COMRADE)	Clinician-rated decision-making abilities and knowledge (idiosyncratic measure)	1 Munich, Germany	35.5 (11.9)	20 (37)	54 (100)	Perceived involvement: post intervention and at discharge from ward. Decision-making ability: discharge only.
	Treatment as usual.		59 (Primary outcome: 45, secondary outcome: 52)				39.6 (10.8)	31 (53)	59 (100)	
Hamann *et al* (2011)[31]	5-session group SDM intervention including motivational, behavioural and supportive elements.	In-patient – post acute phase	32 (32)	Decision self-efficacy (DSS)	Relationship with clinician (TPS)\n\nClinician-rated decision-making abilities & knowledge (idiosyncratic measure of capacity)	1 Munich, Germany	39.78 (12.07)	Across groups: 38 (62)	32 (100)	Post-intervention, with perceived involvement measured also at 6 months.

	5-session group cognitive training.		29 (29)				41.76 (11.36)	NS	29 (100)	
Henderson *et al* (2004)[24]	2-session shared facilitation of JCP, involving clinical team and possibly friend/advocate.	Community with hospital admission in previous 2 years	80 (80)	Objective coercion (N admitted under MHA)	None	7 CMHTs in South London and 1 in Kent, England	39.5 (12.1)	33 (41)	>50% (correspondence from last author)	Follow-up 15 months post-randomisation.
	Provision of written material about mental health services, MHA etc.		80 (80)				38.6 (10.6)	33 (41)	NS	
Steinwachs *et al* (2011)[29]	Tailored web-based intervention (average 20 minutes) to improve patients' use of consultations. Includes medical and psychosocial areas of care, and modelling of targeted communication skills.	Community & out-patient	Total for both groups: 56 (24)	Clinician-verbal dominance (ratio of clinician to patient statements)	Relationship with clinician (greater clinician engagement - rated by observers)	1 Baltimore, USA	49 (12)	9 (38)	24 (100)	Post-intervention.
	Video and written information about treatment for schizophrenia		Total for both groups: 56 (26)				50 (11)	8 (31)	26 (100)	

Swanson et al (2006)[23] Elbogen et al (2007)[22]	Research assistant-administered semi-structured interview, discussion and practical assistance to facilitate advance directive.	Community	213 (Swanson:195 Elbogen: 190)	None	Relationship with clinician (WAI) Clinician-rated decision-making ability (DCAT-PAD)	1 North Carolina, USA	Across groups 42 (10.7)	Across groups 251 (60)	Across groups 247 (59)	1 month after baseline.
	Written information re advance directives and signposting		206 (Swanson:186 Elbogen: 181)				NS *	NS*	NS*	
Thornicroft et al (2013)[25]	2-meeting joint facilitation of JCP. Facilitated by senior nurse. Involved clinical team and possibly family/friend.	Community	285 (MPCS: 213, Admission: 267, WAI: 106)	Perceived coercion (MPCS) Objective coercion (N admitted under MHA)	Relationship with clinician (WAI)	3 sites across England: Birmingham Manchester and Lancashire South London	40.0 (11.8)	146 (51)	210 (74)	Median 18.5 months.
	Treatment as usual under CPA		284 (MPCS: 245, Admission: 280, WAI: 240)				39.6 (12.1)	138 (49)	212 (75)	

Van Os *et al* (2004)[28]	Use of problem checklist with brief guidance, covering medical, psychological/ emotional and psychosocial areas, prior to consultation with doctor to enhance communication.	Community	67 (NS)	None	Relationship with clinician (4-point rating on single question)	7 centres across Europe: Maastricht Oviedo, Gijon Hamburg, Copen-hagen, Milan, Nice	40.3 (12.7)	35 (52)	67 (100)	Immediately post-intervention and 4-6 weeks later.
	Treatment as usual		67 (NS)				41.3 (12.5)	29 (43)	67 (100)	
Woltmann *et al* (2011)[30]	Electronic decision support system to facilitate synthesising perspectives in care planning for patients and case managers.	Community	40 (40)	Patient-perceived involvement (idiosyncratic measure)	None	1 Dartmouth, USA	47 (9)	15 (38)	24 (60)	Post-intervention.
	Care planning as usual.		40 (40)				46 (11)	12 (30)	24 (60)	
Ruchlewska *et al* (2014)[26]	Clinician-facilitated crisis plan	Community	70 (46 and 50 provided WAI data at 9 and 18 months)	Objective coercion (N admitted under MHA)	Relationship with clinician (WAI)	12 Assertive Community Teams and Illness Management & Recovery Teams in Rotterdam, Netherlands	40.6 (11.6)	24 (34.3)	45 (64.3)	0, 9, 18 months

	Patient advocate-facilitated crisis plan		69 (57 and 50 provided WAI data at 9 and 18 months)				40.3 (10.9)	19 (27.5)	53 (76.8)	
	Usual care		73 (50 and 52 provided WAI data at 9 and 18 months)				39.4 (11.6)	24 (32.9)	56 (76.7)	
O'Donnell *et al* (1999)[33]	Client-focused case management (strong SDM focus)	Community	39 (~32 provided data at 12 months)	Patient-perceived involvement (N agreeing they 'had more say' on idiosyncratic measure)	Relationship with clinician (N reporting satisfaction with care manager on idiosyncratic measure)	1 Sydney, Australia	35 (8.1)	13 (28.8)	Across groups, 105 (88%) had schizophrenia-spectrum diagnoses	0, 12 months
	Client-focused case management plus peer advocacy (strong SDM focus)		45 (~27 provided data at 12 months)				36 (9.6)	23 (51.1)		
	Standard community case management		35 (~20 provided data at 12 months)				36 (11.7)	15 (42.9)		
Harris *et al* (2009)[32]	Medication management training (strong SDM focus)	Community	88 (72)	None	Relationship with clinician (working alliance)	1, Manchester, England	44 (13.8)	43 (49)	88 (100)	0, 9 months

	Waiting list for medication management training		81 (51)	None			41.4 (13.5)	30 (37%)	81 (100)	

COMRADE, Combined Outcome Measure for Risk Communication and Treatment Decision Making Effectiveness; DSS, Decision Self-efficacy Scale; TPS, Trust in Physician Scale; JCP, Joint Crisis Plan; MPCS, MacArthur Perceived Coercion Scale; CPA, Care Plan Approach; MHA, Mental Health Act; CMHT, Community Mental health Team; NS, not specified; NS*, not specified – no significant difference between groups; RIAS, Roter Interaction Analysis System; WAI, Working Alliance Inventory; DCAT-PAD, Decisional Competence Assessment Tool for Psychiatric Advance Directives.

Table DS2 Studies excluded primarily on basis of outcomes (full-text reports)†	
Study	**Outcomes**
1. Hamann *et al* (2007)[45]	Hospitalisations, compliance, severity of illness, changes to antipsychotic
2. Malm *et al* (2003)[46]	Global and social functioning, symptoms and consumer satisfaction.
3. Priebe (1999)[47]	Patients' ratings of treatment and own condition and BPRS
4. Priebe *et al* (2007)[48]	Quality of life, unmet needs and treatment satisfaction
5. Van Dorn *et al* (2008)[49]	Reduction in patient-perceived PAD-related and external barriers to PAD completion
BPRS, Brief Psychiatric Rating Scale; PAD, Psychiatric Advance Directive. †Studies or reports excluded on the basis of title or abstract alone are not given as there was a very large number. In general they covered conditions, interventions or outcomes other than those covered in the review, or were not RCTs.	

Table DS3 Other excluded studies and reasons for exclusion (full-text reports)†	
Study	**Reason for exclusion**
1. Gray *et al* (2006)[50]	Intervention more about adherence than SDM
2. Hansson *et al* (2008)[51]	Adjunct to RCT looking at moderators. Not included review outcomes
3. Hayward *et al* (2009)[52]	Intervention more about adherence than SDM
4. Henderson *et al* (2009)[53]	Not RCT: interview study
5. Li & Wan (2004)[54]	In Chinese – no funds for translation
6. Mittal *et al* (2009)[55]	Intervention more about adherence than SDM
7. Rogers *et al* (2007)[56]	Intervention not sufficiently about treatment-related SDM
8. Sells *et al* (2006)[57]	SDM not main group difference; primary substance misuse
9. Staring *et al* (2010)[58]	Intervention more about adherence than SDM
10. Tondora *et al* (2010)[59]	Outcome data not available (not SDM)
11. Woltmann & Whitley (2010)[60]	Not RCT
12. Farrelly *et al* (2014)[43]	Not RCT
13. Jørgensen *et al* (2014)[61]	Not SDM
14. Van Oenen *et al* (2013)[62]	Not SDM
15. Papageorgiou *et al* (2002)[63]	Not SDM
16. Martino & Strejilevich (2014)[64]	Not RCT
17. Kilbourne *et al* (2014)[65]	<50% participants with non-affective psychosis
18. Dow *et al* (1991)[66]	Not RCT (sequential allocation)
19. Van der Krieke *et al* (2013)[67]	>50% missing data
20. Priebe *et al* (2013)[68]	Ongoing trial
21. Ishii *et al* (2014)[69]	Ongoing trial
22. Rogers *et al* (2003)[70]	Untraced
23. Slade *et al* (2015)[71]	Not SDM
†Studies or reports excluded on the basis of title or abstract alone are not given as there was a very large number. In general they covered conditions, interventions or outcomes other than those covered in the review, or were not RCTs.	

Table DS4	Risk of bias in included studies – Cochrane Risk of Bias Tool						
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Hamann *et al* (2006)[27]	**Unclear**: insufficient information about randomisation of matched pairs of wards: *'Selection of the wards was made so as to ensure that there were six pairs of wards, with one member of each pair being randomly assigned to the control or to the interventional condition.'*	**Unclear**: insufficient information about allocation concealment of wards: *'Selection of the wards was made so as to ensure that there were six pairs of wards, with one member of each pair being randomly assigned to the control or to the interventional condition.'*	**High**: risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear**: No information about blinding assessors.	**High**: for patient-perceived involvement - >25% of those randomised did not complete perceived involvement measure. No account taken of missing data in analysis. **Unclear**: for knowledge about medication – 22% did not complete knowledge about medication measure. No account taken of missing data in analysis.	**Unclear**: unavailability of protocol.	**Unclear**: paired cluster randomised design might introduce recruitment bias. *'... patients were sent to that ward of a pair that had free beds available.'* No information on participant allocation where beds available on both wards of a pair.

Table DS4 Risk of bias in included studies – Cochrane Risk of Bias Tool							
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Hamann *et al* (2011)[31]	**Unclear**: insufficient information about randomisation: *'Patients were recruited until group size was reached and then randomly assigned to the intervention or control condition.'*	**Low**: *'numbered closed-allocation concealment envelopes were prepared before the study.'*	**High**: risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear**: no information about blinding of assessors.	**Low:** on post measures – no report of missing data. **Unclear:** at follow-up – perceived involvement measure only completed by 79% - attrition evenly spread across groups but no reasons given. No account of imputation of missing data.	**Unclear:** unavailability of protocol. Reporting on only one idiosyncratic measure at follow-up raises questions about selective reporting.	**Unclear:** insufficient information to assess risk of cross-contamination in in-patient research setting.

Table DS4 Risk of bias in included studies – Cochrane Risk of Bias Tool								
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Henderson *et al* (2004)[24]	**Low**: *'The allocation sequence was generated by using minimisation, stratified by team and by severity of the patients.'*	**Low**: *'When a patient was recruited, the project worker requested allocation by email, which was returned by a statistician... Allocation was not revealed to the investigator.'*	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Low**: *'One investigator (CH) collected follow-up data and was blinded to treatment group.'*	**Low**: *'Information on use of the Mental Health Act was available for 77/80 of each group (total 154/160 = 96%).'* Low attrition rate and ITT analysis resulted in low risk of bias.	**Unclear:** unavailability of protocol.	**Low:** study appears to be free of other sources of bias.
Steinwachs *et al* (2011)[29]	**Unclear:** insufficient information about sequence generation: *'Patients were randomly assigned to the intervention or to a control group.'*	**Unclear**: no method of concealment described: *'Patients were randomly assigned to the intervention or to a control group.'*	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Low:** *'The two coders were not aware of study hypotheses or patients' intervention status.'*	**Low:** data missing for 11% due to technical failure. No account of handling of missing data but unlikely to cause undue bias.	**Unclear:** unavailability of protocol.	**Low:** study appears to be free of other sources of bias.

Table DS4 Risk of bias in included studies – Cochrane Risk of Bias Tool							
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Swanson *et al* (2006)[23] Elbogen *et al* (2007)[22]	**Unclear:** insufficient information about sequence generation: *'each participant was randomly assigned to either the facilitated psychiatric advance directive intervention or the control group.'*	**Unclear:** no method of concealment described: *'each participant was randomly assigned to either the facilitated psychiatric advance directive intervention or the control group.'*	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear:** no information about blinding of assessors.	**Low:** attrition of 10%. No account of imputation of missing data – mitigated by relatively low attrition rate and even distribution of missing data between groups.	**Unclear:** for patient-rated relationship with clinician due to unavailability of protocol. **High:** for decision-making ability – data only available for subscale of measure where there was a significant effect.	**Low:** study appears to be free of other sources of bias.

Table DS4	Risk of bias in included studies – Cochrane Risk of Bias Tool						
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Thornicroft *et al* (2013)[25]	**Low:** *'we stratified participants by site and randomly allocated them... The allocation sequence was generated by the independent clinical trials unit at the study coordinating centre.'*	**Low:** *'The JCP facilitators at each site were notified by an automatic email from the clinical trials unit of participants at their Trust who were allocated to the intervention or control.'*	**High**: risk of bias with potential for knowledge of allocation to influence behaviour.	**Low:** *'Investigators, research assistants (who did the follow-up), and trial statisticians were masked to allocation.'*	**Low:** For primary outcomes. Missing data: 4% for admission data, 20% for perceived coercion. **Unclear:** For relationship with clinician: 39% missing data. Attrition mitigated by *'analysis done under ITT principles'* and controlling for variables associated with missing data.	**Low:** protocol available and outcomes reported in the pre-specified way.	**Low:** study appears to be free of other sources of bias.

Table DS4 Risk of bias in included studies – Cochrane Risk of Bias Tool							
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Van Os *et al* (2004)[28]	**Low:** *'Patients were randomised centrally by an independent, non-investigator agency using a predetermined random sequence.'*	**Low**: concealment ensured by central allocation.	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear:** no information on blinding of assessors.	**Unclear:** no report of missing data and this is likely to be unrealistic.	**Unclear:** unavailability of protocol.	**Low:** study appears to be free of other sources of bias.
Woltmann *et al* (2011)[30]	**Unclear:** insufficient information about randomisation of case managers: *'Case managers from three clinics were randomly assigned to the intervention group or treatment as usual.'*	**Unclear:** insufficient information about concealment of allocation of case managers: *'Case managers from three clinics were randomly assigned to the intervention group or treatment as usual.'*	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear:** no information about blinding of research assistants facilitating assessment.	**Low:** no report of missing data. Missing data reported on other outcomes, so likely this is realistic.	**Unclear:** unavailability of protocol.	**Unclear:** insufficient information to judge risk of recruitment bias with cluster randomised design. Process of identifying clients unclear. However, low intra-cluster correlation (ICC=0.10) on outcome of interest.

Table DS4 Risk of bias in included studies – Cochrane Risk of Bias Tool							
Study	**Random sequence generation (selection bias)**	**Allocation concealment (selection bias)**	**Performance bias (blinding of participants and personnel)**	**Detection bias (blinding of assessments)**	**Incomplete outcome data (attrition bias)**	**Selective reporting (reporting bias)**	**Other bias (e.g. recruitment bias, contamination)**
Ruchlewska *et al* (2014)[26]	**Unclear:** insufficient information about randomisation: *'Randomisation was stratified by treatment team… the principal investigator allocated participants randomly into one of the three conditions..''*	**Unclear:** *"we used envelopes containing 12 lots per team…"*	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear:** no information about blinding of assessors.	**Low:** minimal missing data for N admitted **High:** >25% missing data for WAI data	**High:** a number of outcomes pre-specified in protocol not reported, including health-related Locus of Control scores	**Low:** study appears to be free of other sources of bias.

Table DS4   Risk of bias in included studies – Cochrane Risk of Bias Tool

Study	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Performance bias (blinding of participants and personnel)	Detection bias (blinding of assessments)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias (e.g. recruitment bias, contamination)
O'Donnell et al (1999)[33]	**Unclear:** insufficient information about randomisation: *"subjects who agreed to participate in the study were randomly allocated to one of three groups".*	**Unclear:** insufficient information about randomisation: *"subjects who agreed to participate in the study were randomly allocated to one of three groups".*	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**Unclear:** no information about blinding of assessors.	**High:** >25% missing data for empowerment and relationship outcomes at 12 months.	**High:** 6-month data not reported. Admission data not reported in usable way. Empowerment and relationship data not clearly reported. No protocol publicly available.	**Low:** study appears to be free of other sources of bias.
Harris et al (2009)[32]	**Unclear:** insufficient information about randomisation given	**Unclear:** insufficient information about randomisation given	**High:** risk of bias with potential for knowledge of allocation to influence behaviour.	**High:** *"There was no 'blind' assessment of service user level outcomes. The principle investigator was not 'blind' to the allocation of experimental and control groups."*	**High:** >25% missing data for relationship outcomes at 9 months.	**Unclear:** unavailability of protocol.	**Unclear:** cluster randomised design might introduce recruitment bias.

Table DS5	GRADE assessment of outcomes – detail of assessment							
Outcome	**Included studies and outcome**	**Quality**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other factors**	**Overall**	**Comments**
Subjective empowerment	**Hamann *et al* (2006):**[27] patient-perceived involvement **Hamann *et al* (2011):**[31] decision self-efficacy **Steinwachs *et al*:**[29] reduced verbal dominance by clinician (observer rated) **Thornicroft *et al*:**[25] reduced perceived coercion **Woltmann *et al*:** patient-perceived involvement **O'Donnell *et al*:**[33] N agreeing they 'have more say' in treatment decisions	0	0	-1	-1	0	Low	Rating down for indirectness occurred due to absence of direct measures of empowerment. Rating down for imprecision occurred due to span of 95% CI: trivial to moderate effects.

Table DS5	GRADE assessment of outcomes – detail of assessment							
Outcome	**Included studies and outcome**	**Quality**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other factors**	**Overall**	**Comments**
Reduction in objective coercion	**Henderson et al:**[24] admissions under section of MHA **Thornicroft et al:**[25] admissions under section of MHA **Ruchlewska et al:**[26] admissions under Court Order	0	-1	0	-1	0	Low	Significant heterogeneity (albeit in context of clear direction of effect) and wide confidence intervals for pooled estimate reduces quality of outcome to low.

Table DS5	GRADE assessment of outcomes – detail of assessment							
Outcome	**Included studies and outcome**	**Quality**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other factors**	**Overall**	**Comments**
Relationship with clinician	**Hamann _et al_ (2011):**[31] trust in physician **Swanson _et al_:**[23] working alliance **Thornicroft _et al_:**[25] working alliance **Van Os _et al_:**[28] patient-rated quality of communication **Ruchlewska _et al_:**[26] working alliance **Steinwachs _et al_:**[29] greater clinician engagement **O'Donnell _et al_:**[33] satisfaction with care manager **Harris _et al_:**[32] working alliance	0	-1	0	-1	0	Low	Judgements of inconsistency and imprecision due to moderate negative effect in Hamann _et al_ (2011).[57]

Table DS5	GRADE assessment of outcomes – detail of assessment							
Outcome	**Included studies and outcome**	**Quality**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other factors**	**Overall**	**Comments**
Relationship with clinician – Hamann et al (2011)[31] excluded	**Swanson et al:**[23] working alliance **Thornicroft et al:**[25] working alliance **Van Os et al:**[28] patient-rated quality of communication **Ruchlewska et al:**[26] working alliance **Steinwachs et al:**[29] greater clinician engagement **O'Donnell et al:**[33] satisfaction with care manager **Harris et al:**[32] working alliance	0	0	0	-1	0	Moderate	Imprecision due to 95% CI spanning trivial to low-to-moderate effects.

Table DS5   GRADE assessment of outcomes – detail of assessment

Outcome	Included studies and outcome	Quality	Inconsistency	Indirectness	Imprecision	Other factors	Overall	Comments
Clinician-rated decision-making abilities of knowledge	**Hamann *et al* (2006):**[27] knowledge about disease and medication **Hamann *et al* (2011):**[31] decisional capacity **Elbogen *et al*:**[22] decisional capacity (reasoning only)	-1	-2	-2	-1	0	Very low	Quality down-rated due to risk of attrition bias in Hamann *et al* (2006)[20] and reporting bias in Elbogen *et al*.[50] High heterogeneity and wide 95% CI led to down-rating for inconsistency and imprecision. Judgement of indirectness due to partial, selective and idiosyncratic measurement and reporting of decision-making abilities.

Table DS6   Funding sources of included studies

Study	Funding source
Harris *et al* (2009)[32]	North West Regional Training Fellowship, England, UK
Hamann *et al* (2006)[27]	German Ministry of Health and Social Security
Hamann *et al* (2011)[31]	German-Israeli Foundation for Research and Development
Henderson *et al* (2004)[24]	Medical Research Council
O'Donnell *et al* (1999)[33]	Innovative Grants Program of the Australian National Mental Health Strategy
Ruchlewska *et al* (2014)[26]	Dutch organization for health research and development (ZonMw) and BavoEuropoort.
Steinwachs *et al* (2011)[29]	National Institute of Mental Health, USA
Swanson *et al* (2006) and Elbogen *et al* (2007)[22,23]	National Institute of Mental Health, USA; MacArthur Foundation Research Network on Mandated Community Treatment
Thornicroft *et al* (2013)[25]	Medical Research Council, UK
Van Os *et al* (2004)[28]	Astra Zeneca
Woltmann *et al* (2011)[30]	West Family Foundation; Segal Family Foundation

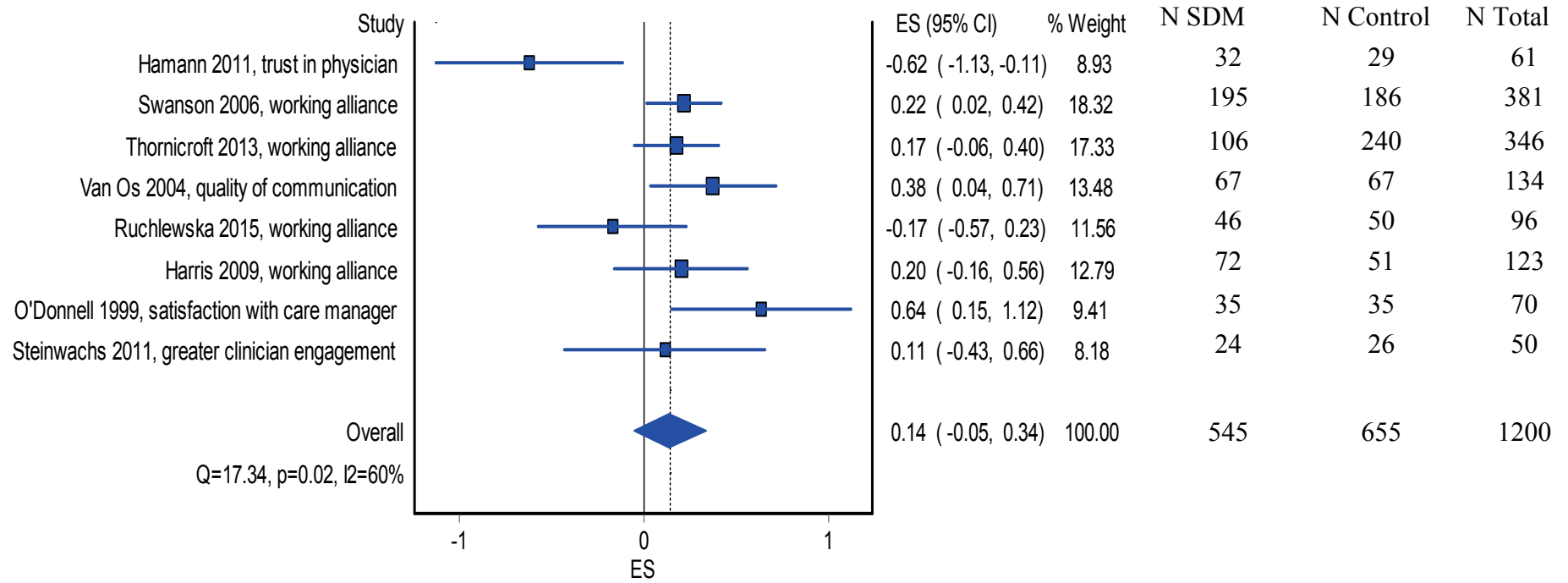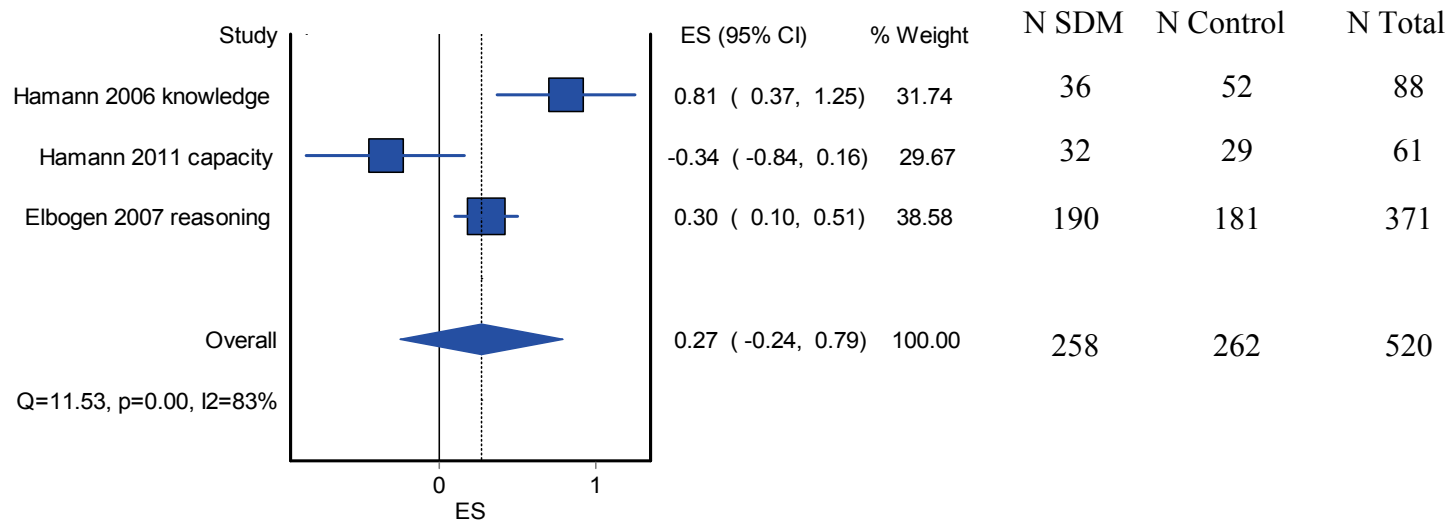**Fig. DS1**   Forest plots for secondary outcomes: relationship with clinician.

Study	ES (95% CI)	% Weight	N SDM	N Control	N Total
Hamann 2011, trust in physician	-0.62 (-1.13, -0.11)	8.93	32	29	61
Swanson 2006, working alliance	0.22 (0.02, 0.42)	18.32	195	186	381
Thornicroft 2013, working alliance	0.17 (-0.06, 0.40)	17.33	106	240	346
Van Os 2004, quality of communication	0.38 (0.04, 0.71)	13.48	67	67	134
Ruchlewska 2015, working alliance	-0.17 (-0.57, 0.23)	11.56	46	50	96
Harris 2009, working alliance	0.20 (-0.16, 0.56)	12.79	72	51	123
O'Donnell 1999, satisfaction with care manager	0.64 (0.15, 1.12)	9.41	35	35	70
Steinwachs 2011, greater clinician engagement	0.11 (-0.43, 0.66)	8.18	24	26	50
Overall	0.14 (-0.05, 0.34)	100.00	545	655	1200

Q=17.34, p=0.02, I2=60%

ES

Fig. DS2 Forest plots for secondary outcomes: clinician-rated treatment decision-making ability

Study	ES (95% CI)	% Weight	N SDM	N Control	N Total
Hamann 2006 knowledge	0.81 (0.37, 1.25)	31.74	36	52	88
Hamann 2011 capacity	-0.34 (-0.84, 0.16)	29.67	32	29	61
Elbogen 2007 reasoning	0.30 (0.10, 0.51)	38.58	190	181	371
Overall	0.27 (-0.24, 0.79)	100.00	258	262	520

Q=11.53, p=0.00, I2=83%

Supplementary references

45.   Hamann J, Cohen R, Leucht S, Busch R, Kissling W. Shared decision making and long-term outcome in schizophrenia treatment. J Clin Psychiatry. 2007 Jul;68(7):992-7.

46.   Malm U, Ivarsson B, Allebeck P, Falloon I. Integrated care in schizophrenia: a 2-year randomized controlled study of two community-based treatment programs. Acta Psychiatr Scand. 2003;**107**:415-23.

47.   Priebe S. A Pilot Trial of Treatment Changes according to Schizophrenic Patients' Wishes. J Nerv Ment Dis. 1999;**187**(7):441-3.

48.   Priebe S, McCabe R, Bullenkamp J, Hansson L, Lauber C, Martinez-Leal R, et al. Structured patient-clinician communication and 1-year outcome in community mental healthcare. Br J Psychiatry. 2007;**191**:420-6.

49.   van Dorn RA, Swanson JW, Swartz MS, Elbogen EB, Ferron J. Reducing Barriers to Completing Psychiatric Advance Directives. Adm Policy Mental Health. 2008;**35**:440-8.

50.   Gray R, Leese M, Bindman J, Becker T, Burti L, David A, et al. Adherence therapy for people with schizophrenia. Br J Psychiatry. 2006;**189**:508-14.

51.   Hansson L, Svensson B, Bjorkman T, Bullenkamp J, Lauber C, Martinez-Leal R, et al. What works for whom in a computer-mediated communication intervention in community psychiatry? Moderators of outcome in a cluster randomized trial. Acta Psychiatr Scand. 2008;**118**:404-9.

52.   Hayward P, David A, Green N, Rabe-Hesketh S, Haworth E, Thompson N, et al. Promoting therapeutic alliance in clozapine users: An exploratory randomized controlled trial. Clin Schizophr Relat Psychoses. 2009;**3**(3):127-32.

53.   Henderson C, Flood C, Leese M, Thornicroft G, Sutherby K, Szmukler G. Views of service users and providers on joint crisis plans. Soc Psychiatry Psychiatr Epidemiol. 2009;**44**:369-76.

54.   Li X-H, Wan J. Effects of the nursing care of mutual participation model on the rehabilitation of inpatients with early schizophrenia. Chin J Clin Rehab. 2004;**8**(24):4958-9.

55.   Mittal D, Owen R, Lacro J, Landes R, Edlund M, Valenstein M, et al. Antipsychotic Adherence Intervention for Veterans over 40 with Schizophrenia: Results of a Pilot Study. Clin Schizophr Relat Psychoses. 2009;**1**(24):(suppl 1).

56.   Rogers ES, Teague G, Lichenstein C, Campbell J, Lyass A, Chen R, et al. Effects of participation in consumer-operated service programs on both personal and organizationally mediated empowerment: Results of multisite study. J Rehabil Res Dev. 2007;**6**:785-800.

57.   Sells D, Davidson L, Jewell C, Falzer P, Rowe M. The Treatment Relationship in Peer-Based and Regular Case Management for Clients With Severe Mental Illness. Psychiatr Serv. 2006;**57**(8):1179-84.

58.   Staring A, Van der Gaag M, Koopmans G, Selten J, Van Beveren J, Hengeveld M, et al. Treatment adherence therapy in people with psychotic disorders: randomised controlled trial. Br J Psychiatry. 2010;**197**:448-55.

59.   Tondora J, O'Connell M, Miller R, Dinzeo T, Bellamy C, Andres-Hyman R, et al. A clinical trial of peer-based culturally responsive person-centered care for psychosis for African Americans and Latinos. Clin Trials. 2010;**7**:368-79.

60.   Woltmann E, Whitley R. Shared decision making in public mental health care: perspectives from consumers living with severe mental illness. Soc Psychiatry Psychiatr Epidemiol. 2010;**34**(1):29-36.

61.   Jorgensen R, Licht RW, Lysaker PH, Munk-Jorgensen P, Buck KD, Jensen SO, et al. Effects on cognitive and clinical insight with the use of Guided Self-Determination in outpatients with schizophrenia: A randomized open trial. Eur Psychiatry. 2015 Jan 16.

62.   Van Oenen FJ, Schipper S, Van R, Schoevers R, Visch I, Peen J, et al. Efficacy of immediate patient feedback in emergency psychiatry: a randomized controlled trial in a crisis intervention & brief therapy team. BMC Psychiatry. 2013;13:331.

63.   Papageorgiou A, King M, Janmohamed A, Davidson O, Dawson J. Advance directives for patients compulsorily admitted to hospital with serious mental illness. Randomised controlled trial. Br J Psychiatry. 2002 Dec;181:513-9.

64.   Martino DJ, Strejilevich SA. A comparison of decision making in patients with bipolar i disorder and schizophrenia. Schizophr Res. 2014 Jun;156(1):135-6.

65.   Kilbourne AM, Bramlet M, Barbaresso MM, Nord KM, Goodrich DE, Lai Z, et al. SMI life goals: description of a randomized trial of a collaborative care model to improve outcomes for persons with serious mental illness. Contemp Clin Trials. 2014 Sep;39(1):74-85.

66.   Dow M, Verdi M, Sacco W. Training Psychiatric Patients to Discuss Medication Issues. Behav Modif. 1991;**15**(1):3-21.

67.   van der Krieke L, Emerencia A, Boonstra N, Wunderink L, de Jonge P, Sytema S. A Web-Based Tool to Support Shared Decision Making for People With a Psychotic Disorder: Randomized Controlled Trial and Process Evaluation. J Med Internet Res. 2013;**15**(10):http://www.jmir.org/2013/10/e216/.

68.   Priebe S, Kelley L, Golden E, McCrone P, Kingdon D, Rutterford C, et al. Effectiveness of structured patient-clinician communication with a solution focused approach (DIALOG+) in community treatment of patients with psychosis – a cluster randomised controlled trial. BMC Psychiatry. 2013;**13**(173):http://www.biomedcentral.com/1471-244X/13/173.

69.   Ishii M, Okumura Y, Sugiyama N, Hasegawa H, Noda T, Hirayasu Y, et al. Efficacy of shared decision making on treatment satisfaction for patients with first-admission schizophrenia: study protocol for a randomised controlled trial. BMC Psychiatry. 2014;14:111.

79.   Rogers A, Day J, Randall F, Bentall R. Patients' understanding and participation in a trial designed to improve the management of anti-psychotic medication. Soc Psychiatry Psychiatr Epidemiol. 2003;**38**:720-7.

71.   Slade M, Bird V, Boutillier C, Williams J, McCrone P, Leamy M. REFOCUS Trial: protocol for a cluster randomised controlled trial of a pro-recovery intervention within community based mental health teams BMC Psychiatry. 2011;**11**(185):http://www.biomedcentral.com/1471-244X/11/185.

72.   Xia J, Adams C, Bhagat N, Bhagat V, Bhoopathi P, El-Sayeh H. Losing participants before the end of the trial erodes credibility of findings. Psychiatr Bull. 2009;**33**:254-7.