CEPHOS-LINK

General concepts and measuring of post discharge variables

Literature based results and real world experience.

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Results from the literature review

Overview of post-discharge predictors for psychiatric re-hospitalisations.

A systematic review of the literature

Sfetcu R*[1,2], Musat S[1], Haaramo P[3], Ciutan M[1], Scintee G[1], Vladescu C[1,4],

Wahlbeck K[3], Katschnig H[5]

Structure of the presentation

- Objective of the review
- Protocol (Inclusion & exclusion criteria)
- Search strategy (PRISMA)
- Description of included studies
- Selective results
- Discussion and limits
- Conclusion

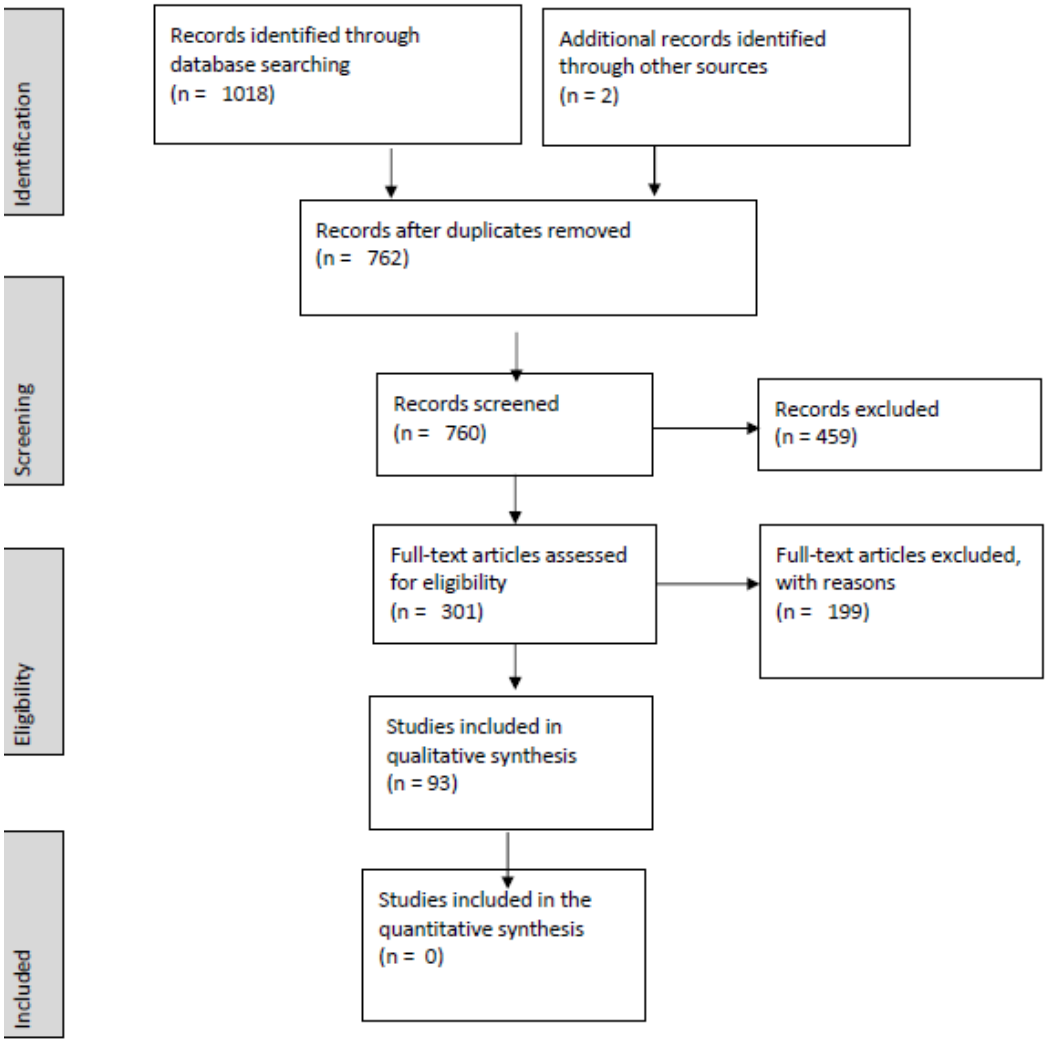
Objective of the review

- to identify and categorize previously studied postdischarge factors
- all events possibly occurring after discharge (e.g. psychiatric outpatient care, sickness leave, death, etc.) which might have an impact on readmission rates.

Inclusion criteria

- post-discharge
  - After Index admission (IA) with a main psychiatric diagnosis (MPD); where IA is not limited to a first ever admission (FEA)
  - Before the first readmission
- psychiatric rehospitalization rates
  - All types of rehospitalization (to a psychiatric bed or a non-psychiatric bed) outcomes:
    - the number of admissions after an IA in a certain follow-up period
    - the number of days spent in hospital in a certain period
    - the survival time in the community after an index discharge

Figure 1 The article selection process (PRISMA 2009 Flow Diagram, http://www.prism statement.org/statement.htm).



93 papers

- 8 reviews
- 5 PhD theses
- 80 individual studies

Geographical distribution of studies

- 15 countries
- 2 studies >1 country.
- 59/80 in English speaking countries
  - more than 50% of these coming from USA,
  - 15% from Australia,
  - 4 from UK and
  - 2 from Canada.
  - 3 each from Germany, Israel and Japan
  - 2 each Brazil, Iran and South Africa
  - 1 each Denmark, Finland, France, Malaysia and Sweden.

Studies by design

- 6 intervention studies (out of which five were RCTs),
- 73 were observational
  - 42 were follow-up studies (37 prospective and five retrospective)
  - 18 were case-control studies
  - 4 were natural experiments.
- 1 descriptive.
- 10 large administrative databases
- 8 as being record linkage studies

Follow-up interval

- The actual follow-up period varied from 1 month (28/30 days) to 16 years
- 73.4% readmission in < or equal 1 year
  - 7.5% - 28/30 days
  - 7.5% - 3 months
  - 16.6% - 6 months
  - 31.8% - 12 months

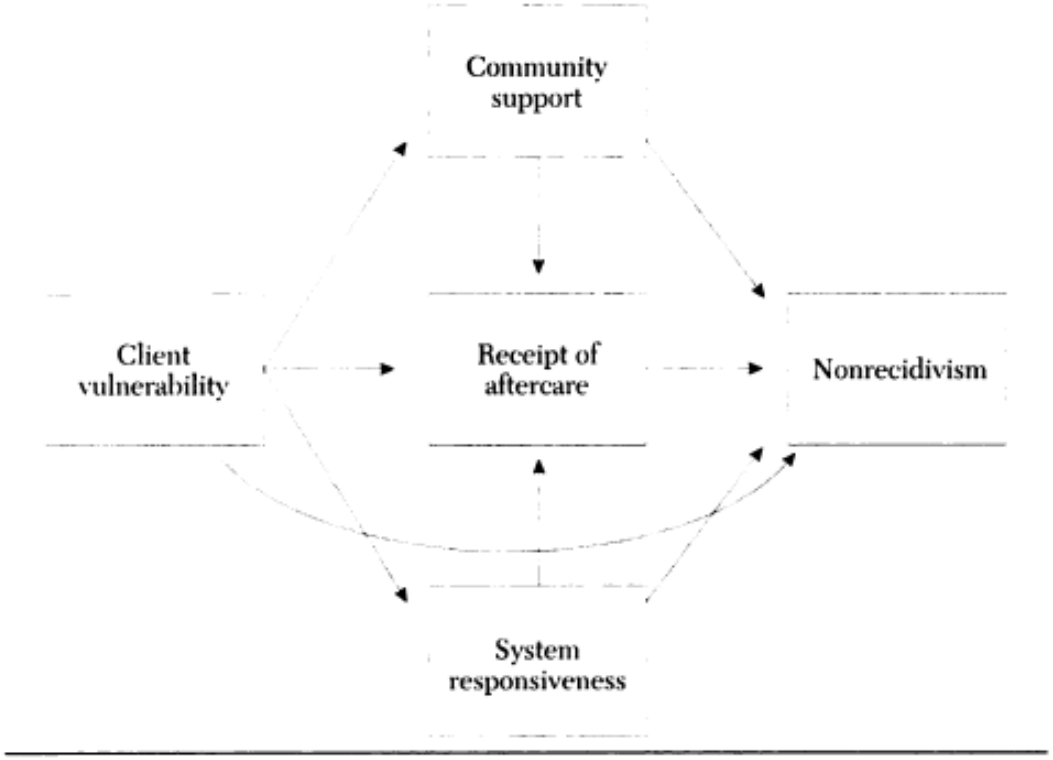
Diagnostic groups

- No diagnostic limitation => 32 studies
- Schizophrenia and related disorders (coded as F2 ICD-10 category) => 33 studies and
- Mood disorders (F3 ICD-10) => 18 studies.
- Anxiety or personality and organic disorders were =>10 studies.

Results (theoretical framework)

Figure 1

A comprehensive model of variables predicting receipt of aftercare and rehospitalization of persons with severe and persistent mental illness



W. D. Klinkenberg and R. J. Calsyn, "*Predictors of receipt of aftercare and recidivism among persons with severe mental illness: A review*," Psychiatric Services, vol. 47, no. 5, pp. 487–496, 1996.

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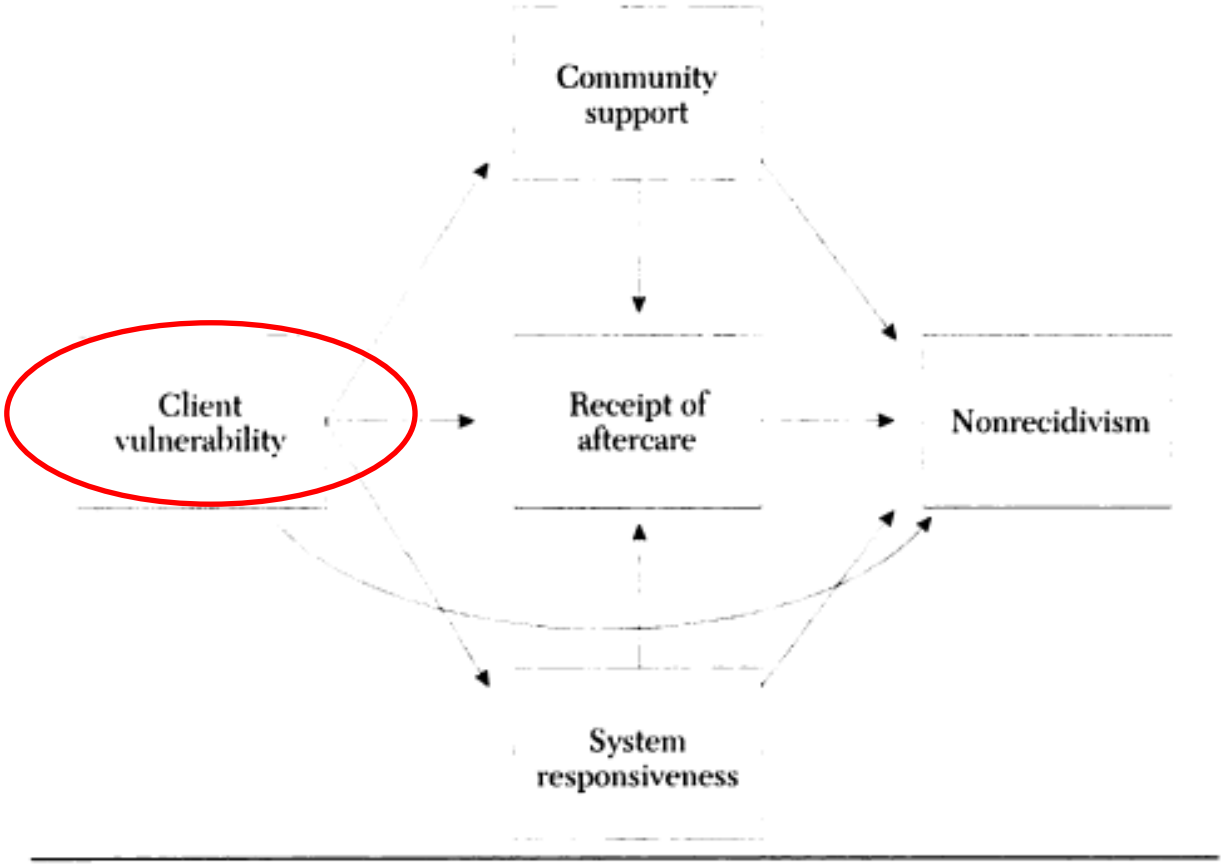

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Category	Variable	Frequency (sig./total)
Housing (12)	Type of housing	10/12
Financial (7)	Receipt of benefits	2/3
	Financial factors	0/1
	Employment	2/3
General well-being in the period post discharge (3)	Psychosocial stress	0/1
	Quality of life	1/1
	Life events	1/1
Post-discharge behaviour (8)	Self-harm	1/1
	Behavioural problems	1/2
	Violence	1/2
	Homicide/suicide	1/1
	Abnormal behaviour (e.g. not grooming)	2/2
Symptoms related (10)	Alcohol/Substance abuse	5/9
	Unavoidable acute relapse in the course of a chronic condition	0/1
Compliance (16)	Compliance to treatment (primarily medication)	7/10
	Compliance to appointments	5/6

Client vulnerability/ Individual factors – overlap with pre-discharge variables

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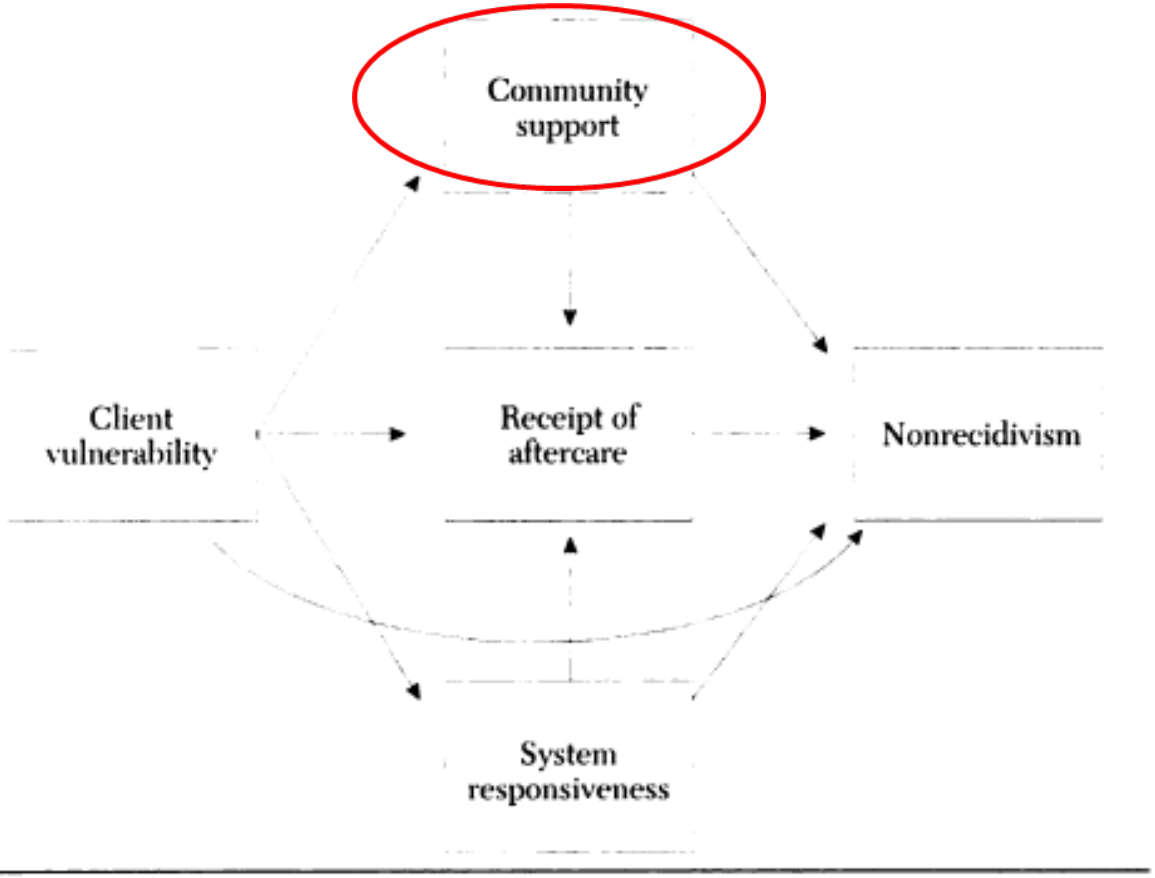

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Community factors and social support	Geographical variables	Proximity to hospital
		Proximity to other health/therapeutic services
		Proximity to other services (bars, cashpoint etc.)
		Percentage of housing units vacant in the block group containing the patient's postdischarge address
	Community attitudes	Police involvement
		Stigma
	Social support	Family support
		Peer support

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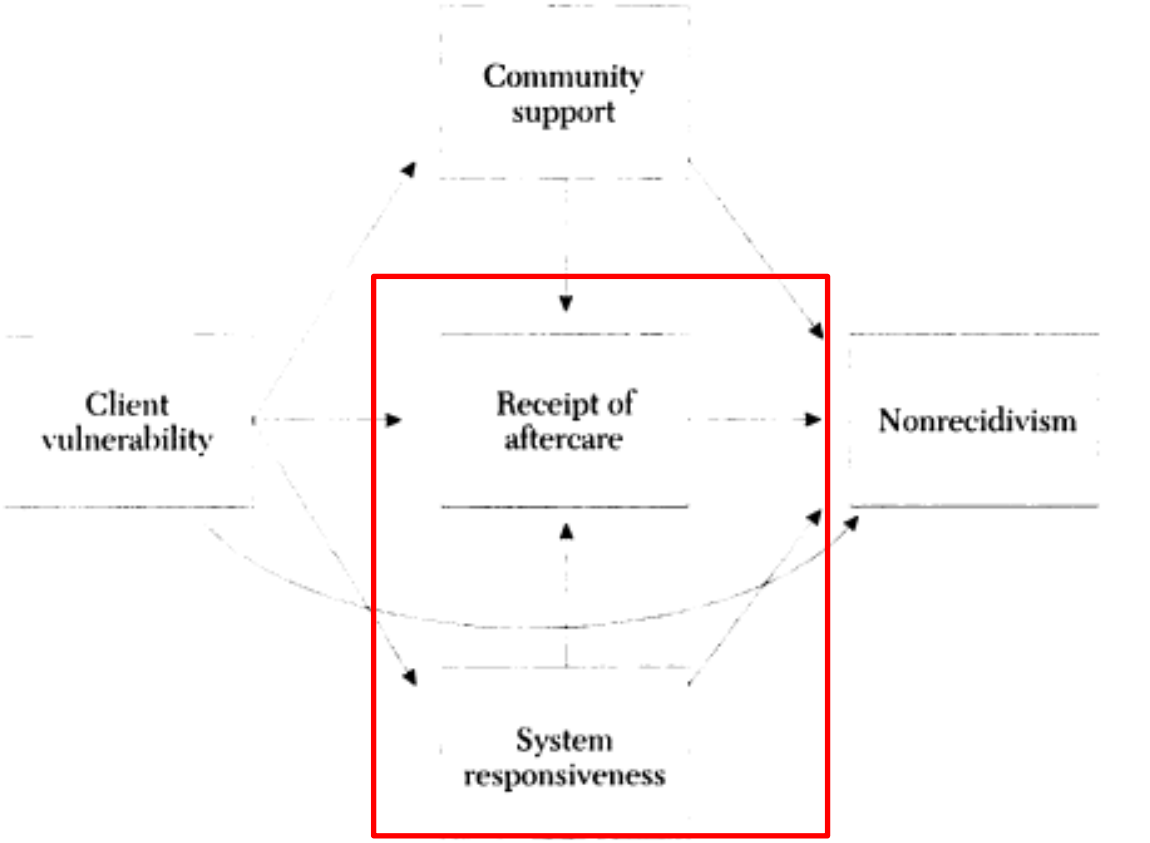

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- **Receipt of aftercare** has been described as following through treatment recommendations for aftercare,
  - single contact with an aftercare agency after hospital discharge or
  - a visit to the psychiatric emergency room or
  - a certain number of clinic visits within a specific period of time after discharge
- **System responsiveness** referred to
  - positive actions taken by mental health programs, such as scheduling appointments for clients at convenient times and making reminder phone calls,
  - negative factors, such as long waits between hospital discharge and the first aftercare appointment.
  - The responsiveness concept also covered large system changes, such as the creation of central mental health authorities,
  - as well as interventions at the individual client level, such as case management.

Aftercare factors	**Referral**	Referral to CMHC
		Discharge to structured program
	Follow-up	Lack of follow-up in the community
		Psychiatric nurse home follow-up
		Follow-up by telephone
		Follow up by GP
		Follow-up within 7 days
		Follow-up within 30 days
		Days from discharge to community follow-up
	Contact with mental health services	Contact in the community on the day of discharge
		Number of contacts with mental health providers
		Mental health visits of any type
		Visits to OP after index discharge
		Medication (only) visits
		Visits to CMHC
	Service use	Receipt of medication
		Receipt of psychotherapy
		Day treatment
		Outreach and mobile
		Emergency department
		Home visits
		Physical health service use
	Type of provider/locus of care	Private therapist or psychiatrist
		Specialized psychiatric treatment
		Basic health care

Aftercare by GP

- Sending the discharge plan to the GP ↓ 28 days RR (2)
- Actual contact with the GP ↓ RR (1)
- more GP treatment time ↑ readmission (1)
- being registered with a primary care unit: no difference (1)
- GP + social worker make home visits once in a month after discharge ↓ rehospitalization (1)
- home visits by psychiatric nurses ↓ rehospitalization (2)

Specialized aftercare: type, place, referral

- referral to a psychiatric aftercare program ↑ RR (1)
- the aftercare provider is psychiatrist vs. a non-psychiatrist ↑ readmission (1)
- but the setting (locus of care) had no significant effect (2)
- lack of use of the CMHC as regular source of care (1)
- referral to community psychosocial support ↓ of multiple readmissions than those referred to usual outpatient care (1).

Same day and 7 days contact

- a contact in the community on the day of discharge (24 hour follow-up) ↓ readmission rates (1)
- follow-up within 7 days – as Pfeiffer and all [62] reported - does not
- BUT
- a contact with the community team on the day of discharge ↑ readmission (1)
- follow up by the mental health team within 7 days of discharge ↑ readmission (1)

7 days contact

- 1 large administrative database study
- four different types of follow-up care were included:
  - % discharges - non-emergency department outpatient services
  - % prescription fill
  - % psychiatrist visit
  - % visiting a community mental health centre (CMHC).
- In the univariate analysis,
  - medication and visits from psychiatrist were +
  - visits to CMHC - correlated with readmission
- in the multivariate analysis only receiving outpatient treatment at a CMHC remained significant, a 1% increase in the percent of patients receiving post-discharge follow-up within 0 to 7 days at a CMHC being associated with a 5% reduction in the probability of being readmitted.

Longer follow-up time intervals

- 30 days: more contact ↓ readmission rates (5)
  - stronger among middle-aged and older patients than it is among younger patients (1/5)
- 180 days: at least one OP visit ↓ readmission rates (1)
- 1 year: no aftercare ↑ risk for psychotic patients (1); aftercare makes no difference (1)
- 4 years: 1+, 1-

Aftercare intensity

- the number of medication only visits & the number of mental health visits of any type during the 6 month follow-up – **no effect** (1)
- the number of contacts with mental health providers – **no effect** (1)
- discharge to a structured program (i.e. at least two or three times per week) differentiate rapidly readmitted psychiatric inpatients from matched samples of patients with longer community tenure or without any readmission within a 6-month period, **fewer rapid readmitted patients being referred to such programs** [38].

Day aftercare

- Day treatment service – no effect (3)
- Utilization of the day-care unit at the public health centre and workshops in the community ↑ rehospitalization (1).
- When patients attending these facilities deteriorate clinically, the staff have few choices other than to advise them to visit an outpatient clinic or to admit to hospital, which then leads to rehospitalization

Service responsiveness

Community care and service responsiveness	Case management	Managed care
		Case management
		Assertive community treatment (ACT)
		Adult community treatment program
	Specific programs/ interventions	Being part of a research program
		Relapse prevention program
		Interventions addressing medication education, symptom education, social skills, daily living, daily structure, and family issues
	Involuntary treatment	Community treatment orders (CTO)

Case management

- Case management programs or adaptations of it were studied in 11 studies
  - 5 **no effect**
  - 2 ↑ readmission risk
  - 4 ↓ readmission risk

Specific programs

- relapse prevention programs 4 papers (3 studies) ↓
- reviewing the individual service plan (1) ↓
- interventions addressing medication education, symptom education, service continuity, social skills, daily living, daily structure, and family issues (1) ↓
- full intake interview at aftercare visit (1) – **no effect**
- research procedures /being part of a research program, readmission rate ↓

Limits of the research

- Broad search strategy => some studies of relevance may have been missed
- High heterogeneity of the studies => no quantitative synthesis of the data could be performed
- Unsystematic quality assessment of the included papers
- Limited generalizability of the results

Conclusions (1)

- In general
  - Results must be interpreted with caution
  - Framework of PD factors available for future studies
- Effectiveness of aftercare is time dependent
  - Individual level (first psychotic episode vs. heavy users)
  - System level
    - Same day
    - 7 days
    - One month
    - One year

Conclusions (2)

- Postdischarge contact is effective
  - Heisenberg effect
  - GP
  - OP
  - Community
- Intensity and content of interactions – more information is needed