HA Convention Symposium VII

Community Mental Health Services:

Case Management Model of discharging long-stay psychiatric patients in Kwai Chung Hospital

MSDC paper 1999

Aim of Psychiatric Services in HA

- HA Psychiatric Services: target at more serious and complex mental illness
- Enable patients to return to community as soon as possible after treatment and rehabilitation
- Shorten hospitalization through enhancing ***Community Psychiatric Services (CPS)*** and commence ***Rehabilitative*** process immediately upon admission
- Use of new medications

MSDC paper 1999: Proposed reorganization of Psych Services

- In-patient
  - ***Reduction of beds***
  - ***Resources thus generated redirected to develop CPS***
- Community Psychiatric Services (CPS)
  - Integrate Community Psychiatric Team (CPT) & Community Psychiatric Nursing Services (CPNS) into CPS
  - Enhance CPNS
- OPD
  - Improve defaulter tracing and triage referrals
  - Educational centers for families and carers
  - New drugs
  - Hospital and Cluster based
- Day Hospitals
  - closer liaison with other service providers to avoid service duplication
  - Integrated into inpatient care


深圳
大鵬灣
東平洲
后海灣
上水
大埔
元朗
新界
屯門
西貢
沙田
機場
九龍
梅窩
東涌
香港島
大澳
大嶼山
南丫島

Characteristics of long stay patients

- Residual positive psychotic symptoms
- Persistent negative symptoms
- Institutionalization syndrome
- Social rejections

Undesirable consequences of deinstitutionalization overseas

- Homeless
- Unemployment
- Non-compliance to treatment
- Hospital readmissions (Revolving door effect)
- Criminality: hospital → prisons

Case Management for people with long term mental illness: Overseas studies

- Marshall M, Lockwood A, Gath D. How effective is social services case management for people with long-term mental disorders? A randomised controlled trial. *Lancet*. 1995;345:409-12.
- Holloway F, Carson J. Intensive case management for the severely mentally ill, Controlled trial. *Br J Psychiatry*. 1998;172:19-22.
- Mueser KT, Bond GR, Drake RE, Resnick SG.. Models of community care for severe mental illness: a review of research on case management. *Schizophrenia Bulletin.* 1998; 24(1):37-74

Assertive Community Bridging Project (ACBP):

- Resources: 9 additional CPNs
- **Pilot Project,** outcome focused, to discharge long stay psychiatric patients from hospital and to reintegrate them to community
- Model of Care:
  1. Case-management
  2. Psychiatric rehabilitation Psycho-educational package (PREP)
- 4 Stages of work
  1. Survey the profile of long stay patients in KCH
  2. Identify the dischargeable patients
  3. Intensive rehabilitation, community re-entry & aftercare program
  4. Outcome evaluation

ACBP Stage 1: Survey of patient profiles

- Number of patient with LOS between 300 days & 5 years in KCH: 422
- Diagnosis:
  - Schizophrenia 30%
  - Mental Handicap 47%
  - Dementia 24%
  - Mood Disorder 16%
  - Others 28%
- Behavior
  - No undesirable behavior 157
  - Bizarre behavior but not harmful 152
  - Antisocial behavior 113
    - Physical violence *(61)*
    - Verbal aggression *(28)*
    - Suicidal threats *(14)*
    - Sexual misdemeanour *(6)*
    - Drug or Substance abuse *(4)*
- Self-Care
  - Independent 175
  - Semi-independent 169
  - Highly dependent 77
- Attitude towards Discharge
  - Yes 144
  - Marginal 174
  - No 103

ACBP Stage 2: Identify the dischargeable patients

- 130 patients were recruited
  - 18<Age<65
  - Not MR, Dementia
  - No violence, Sexual misbehavior
  - No severe physical illness
  - Self care not highly dependent

- Characteristic of recruited patients
  - 69% single; 16% separated, divorced or widowed; 12.5% married
  - 43% primary education or below
  - 43% had onset of mental illness between 21 to 30 years old
  - 38% had suffered > 20 years of illness
  - Average LOS 4.5 years

ACBP Stage 3: Intensive Rehab

- PreDischarge Annex (PDA): simulated Half-Way House
- Psychoeducational package
- Vocational rehabilitation: supported living services, community re-entry programs
- Family work
- New atypical drugs
- Tele-care
- Upon discharge
  - Frequent CPN visits
  - Home visits for defaulters, early relapses and crisis intervention

ACBP Stage 4: Outcome evaluation as at 1.5 years of intervention (i): Administrative data

- Discharges — 87 (10 readmitted)
  - Home with relatives — 24
  - Home alone — 23
  - Half Way Houses — 21
  - Old Age Home — 12
  - Long Stay Care Home/LCKH — 3
  - Private hostel — 4
- Criminal charges: — 3 (1 PODD, 2 indecent assault)
  - No murder
  - No suicide
- 1 death from NPC
- Good compliance to medication and FU

ACBP Stage 4: Outcome evaluation as at 1.5 years of intervention (i): Administrative data

- **Employment:**
  - Full Time 2
  - Part Time 1
  - Supported Employment 4
  - SWS 10
  - AC/DH 13
  - Nil 47
- Financial Support:
  - *Self-support* *6%*
  - *Support from relatives* *4%*
  - CSSA / DA 85%

ACBP Stage 4: Outcome evaluation (ii): Clinical data (a): Mental State (Brief Psychiatric Rating Scale BPRS)

BPRS: Initial total Score	8.49 (11.65)
BPRS: 6-month-post-discharge total Score	5.14 (5.05)

t = 2.825

Significance = 0.005

Result shows significant improvement in mental state 6 month after discharge from hospital

No difference between different residential placement with regards to

- Living with relatives
- Living alone at Public Housing Unit
- Living alone at private/rental flat
- Living alone in rented room, singleton hostel
- Living in HWH/LSCH
- Others.

ACBP Stage 4: Outcome evaluation:
(ii):Clinical data
(b):Quality of Life (WHOQOL)

Paired sample t-test

Domain	N	Mean (SD)	t	Sign
Physical Before discharge 6/12 post-discharge	60	12.54 (2.24) 12.85 (1.79)	- 1.421	0.161
Psychological health 0 6 month	60	12.36 (2.71) 13.41 (3.71)	- 2.405	**0.019**
Social 0 6 month	60	12.42 (2.55) 13.58 (3.17)	- 3.137	**0.003**
Environment 0 6 month	60	12.80 (2.29) 13.67 (2.28)	- 3.023	**0.004**

QOL post-discharge were significantly **better in psychological health, social relationship and environment**.

But further analysis showed **no difference** in QOL in patients discharged different residential placements

ACBP Stage 4: Outcome evaluation
(c): Functioning level in ADL (Specific level of functioning SLOF)

	SLOF Domain	N	Mean (SD)	t	Sign
1	Physical functioning 0 6	65	 24.18 (2.75) 24.63 (1.22)	- 1.388	0.170
2	Personal Care	65	33.06 (3.15) 39.75 (4.86)	- 1.083	0.283
3	Interpersonal Relationship	65	23.89 (5.60) 25.40 (5.32)	- 4.475	**0.000**
4	Social Acceptability	65	31.95 (2.93) 31.17 (2.51)	- 4.389	**0.000**
5	Community Living Activities	65	45.77 (8.91) 47.48 (7.71)	- 3.516	**0.001**
6	Work Skill	65	19.31 (5.03) 24.97 (3.71)	- 1.211	0.230
7	Total	65	177.46 (20.17) 185.54 (20.54)	- 6.444	**0.000**

Significant improvement in (3), (4), (5), (7).

No difference in SLOF between patients discharge to different residential placement

ACBP Stage 4: Outcome evaluation

Positive Experiences

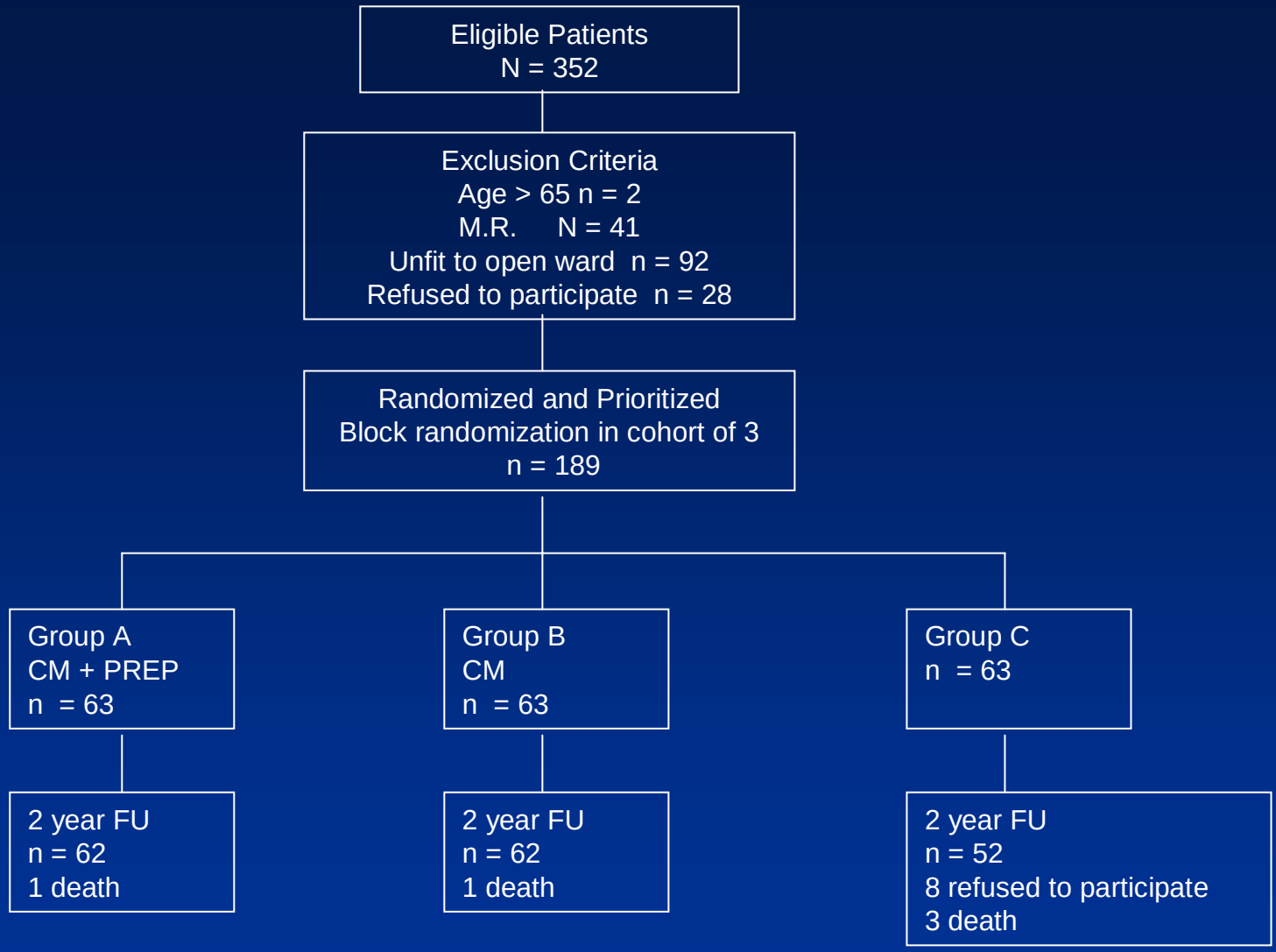
- Continuity of care is possible
- Appreciation from patients/relatives
- Team building and job satisfaction amongst staff
- Accumulation of skills and confidence in rehab of difficult patients
- Training opportunity for new staff
- Successful integration of service elements and multidisciplinary efforts

Difficulties encountered

- Social Stigma
- Appropriate residences are not available
- Negative Influence from family
  - Rejection
  - Interference in treatment plan
  - Exploitation of index patient
- Lack of scientific hypothesis in the original design of project —> Second Deinstitutionalization Project (D Project)

Second Deinstitutionalization (D) Project

- 2 components
  1. research component: supported by HSRC Grant
  2. Service component: supported by all frontline and managerial staff of CMT5
- A research using randomized control trial design (RCT) and intention to treat ITT) analysis
- Testing efficacy of 2 interventions in rehabilitation
  - Case Management
  - PREP (psychoeducational package)
- 3 Groups
  - (A) CM + PREP
  - (B) CM
  - (C) (Control) Conventional rehab in original ward


Eligible Patients
N = 352
Exclusion Criteria
Age > 65 n = 2
M.R. N = 41
Unfit to open ward n = 92
Refused to participate n = 28
Randomized and Prioritized
Block randomization in cohort of 3
n = 189
Group A
CM + PREP
n = 63
Group B
CM
n = 63
Group C
n = 63
2 year FU
n = 62
1 death
2 year FU
n = 62
1 death
2 year FU
n = 52
8 refused to participate
3 death

D-Project: Design

Randomization procedure:

- Performed by independent party (CND)
- Potential subjects identified
- Mentally fit to transfer to open ward
- Consent obtained
- Each patient given a priority number
- Block randomization procedure
- Each block consisted of 3 subjects each randomly assigned to A, B or C(control)
- Subject in A & B groups admitted to rehab ward and later PDA according to the priority number, 2 to 3 patients per week, subject to available of bed spaces
- Subject in C group will be admitted after all A & B subjects had completed the 2 year rehab program

D-Project: Design

Case Management:

Scored at 3.18 compliance rating according to Dartmouth Assertive Community Treatment Scale

Each subject assigned a case manager (CPN)

- Pre-discharge assessment
- Planning assessment and arrangement for appropriate residential placement
- Negotiation and coordination with family and NGO
- Monitoring of mental state, evaluate clinical outcome
- Advocate related rehab services for subjects and carers
- Education and surveillance of treatment compliance

PREP

Psycho-educational sessions, in 10 areas of potential handicap (mental state and behavior, domestic activities, work and day time activities etc)

Delivered after an Individual Care Plan assessment

D-Project: Design

Measures and Instruments:

Demographic Data: Age, Sex etc

Administrative and Clinical Data:

Diagnosis, co-morbidity, PFU status, Duration of illness, LOS, Physical health, Type of residence upon discharge, employment status

Outcome data:

Rate of discharge, Rate of readmission, criminal conviction, violence, suicides

Others:

BPRS, SAPS, SANS, WHOQOL-BREF, SLOF, etc

Comparison of demographic parameters on admission

Variables	A	B	C	Statistics	P-value
Sex Male Female	 33 30	 38 25	 30 33	X^2= 2.08	0.353
Age (mean)	47.0	46.2	45.2	F=0.657	0.519
Diagnosis Schizophrenia Others	 61 2	 61 2	 58 5	X^2= 2.1	0.35
Marital status Single Married Others	 44 13 6	 46 4 13	 43 7 13	X^2=8.42	0.077
Age of onset	21.1	23.9	23.2	F=1.904	0.285
Duration from admission to project(days)	2750	2462	2215	F=1.904	0.285
No. of previous admissions	5.3	4.6	5.1	F=0.457	0.634
PFU T+ST Non PFU	 8 55	 11 52	 11 52	X^2= 0.713	0.7
Education Primary Secondary Others	 31 26 6	 25 34 4	 16 43 4	X^2= 9.535	**0.049***

Comparison of clinical parameters on admission

Variable	A (N = 51 for QOL N= 63 for others)	B (N = 49 for QOL, N=63 for others)	C (N = 44 for QOL, N=55 for others))	F	Sign
QOL Physical	22.76 (7.18)	23.86 (4.80)	22.16 (3.40)	1.174	0.312
QOL Psychological	26.14 (8.93)	27.53 (6.79)	25.07 (5.15)	1.366	0.259
QOL Social Acceptability	13.29 (3.76)	13.98 (3.30)	12.54 (3.14)	2.029	0.135
QOL Environment	23.49 (7.08)	25.41 (5.82)	23.22 (5.26)	1.803	0.169
QOL 1a	3.53 (1.39)	3.51 (1.06)	3.50 (0.98)	0.008	0.992
QOL 2a	3.51 (1.33)	3.55 (1.13)	3.52 (0.93)	0.349	0.706
BPRS (Total)	13.68 (7.15)	13.12 (7.02)	14.58 (7.21)	0.617	0.540
SLOF Physical functioning	24.11(1.05)	24.00 (2.02)	24.33 (1.35)	0.684	0.506
SLOF Personal Care	29.83 (3.89)	28.56 (5.36)	30.55 (2.68)	3.467	0.033
SLOF Interpersonal Relationship	18.79 (3.75)	18.29 (4.50)	18.20 (3.50)	0.400	0.671
SLOF Social Acceptability	33.32 (1.95)	33.06 (2.53)	32.35 (2.55)	2.662	0.073
SLOF Act.	38.40 (7.40)	38.70 (8.36)	37.39 (5.96)	0.507	0.603
SLOF Work	14.16 (3.02)	14.08 (3.70)	14.25 (2.58)	0.045	0.956
SLOF (Total)	158.43 (16.11)	156.60 (20.68)	157.27 (13.10)	0.184	0.832

D-Project: Result at 2 year (ITT analysis)

Variables	A	B	C	Statistics	P-value
No. of Discharge (non-disch) (Death)	44 (18) (1)	54 (8) (1)	18 (42) (3)	X^2= 46.403	**P=0.000**
Total in-patient days (LOS) per patient	431.44 (234.63)	370.56 (215.83)	610.86 (211.29)	F=20.105	**P=0.000**
Total Day-patient days	19.33 (72.40)	19.94 (69.22)	4.29 (22.51)	F=1.410	P=0.247
Total CPN visit	23.92 (17.29)	28.11 (15.98)	0.16 (1.26)	F=77.31	**P=0.000**
Total OPD attendance	6.35	7.43	2.03	F=15.15	**P=0.000**
Rate of attendance of OPD FUs	0.96 (0.17) N = 38	0.94 (0.15) N = 53	0.89 (0.22) N = 14	F = 0.947	p = 0.391
Total No. of subjects readmitted: territory wide	24	24	17	X^2= 2.298	P=0.317
Median in-patient days spent in hospital after readmissions	164	182.5	335	X^2=3.676 df=2(Kruskai-walls)	p=0.159
Mean episode of readmission	0.6349	0.8413	0.4603	F=0.946	0=0.39
(LOS) of discharged cases (total 116 cases)	326.66 (184.84)	323.24 (182.30)	333.22 (217.75)	F=0.019	P=0.981

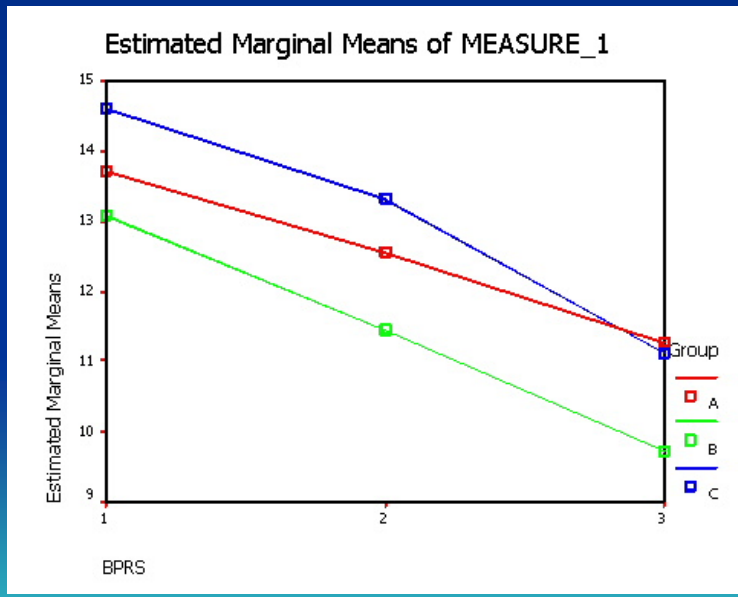
Episodes of readmission: once=44, twice=12, 3=3, 4=1, 5=1, 6=1, 7=1, 8=1, 15=1
Total episodes = 122
Total number of patients readmitted = 65
Death case:

- •Group A: coroner case for sudden LOC
- •Group B: hepatic encephalopathy from HBV carrier
- •Group C: all 3 cases died of pneumonia, 2 in PMH, one in QEH (discharged to KH)

D-Project: Result at 2 year
BPRS total score

BPRS	A (N=61)	B (N=62)	C (N=54)
0 month	13.70 (6.94)	13.08 (7.07)	14.61 (7.28)
12 month	12.56 (7.62)	11.45 (6.69)	13.31 (7.90)
24 month	11.28 (8.07)	9.73 (6.49)	11.11 (6.62)

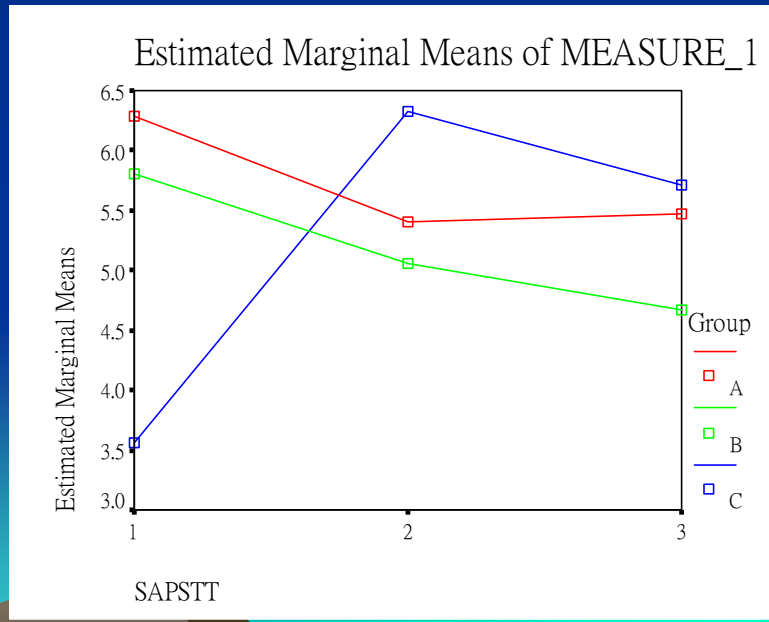
Time Effect F=18.57 p<0.001**
Group Effect F=1.053 p=0.351
Time × Group Interaction Effect F=0.262 p=0.902

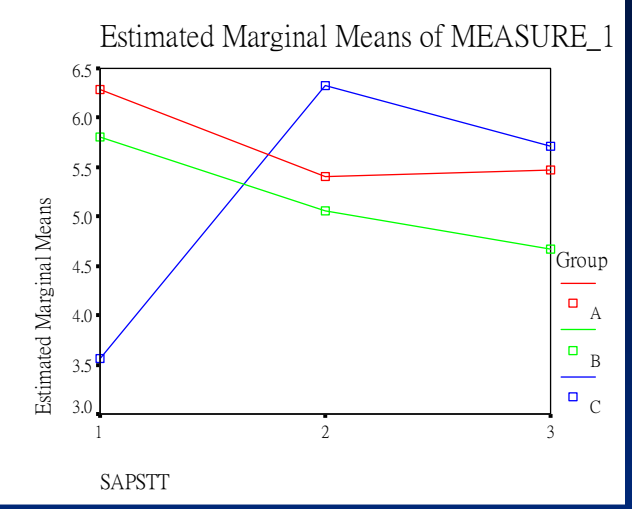


D-Project: result at 2 year SAPS total score

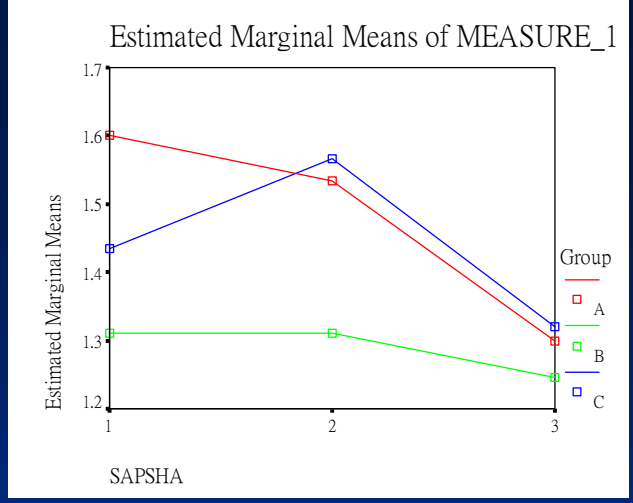
SAPS total score	A (N=59)	B (N=58)	C (N=53)
0 month	6.29 (5.07)	5.81 (5.32)	3.57 (3.56)
12 month	5.41 (4.09)	5.05 (4.28)	6.32 (3.53)
24 month	5.47 (3.71)	4.67 (3.45)	5.72 (3.63)

Test of within subjects effects: F= 5.923 p=0.000
Test of between subjects effect: F=0.593 p=0.554

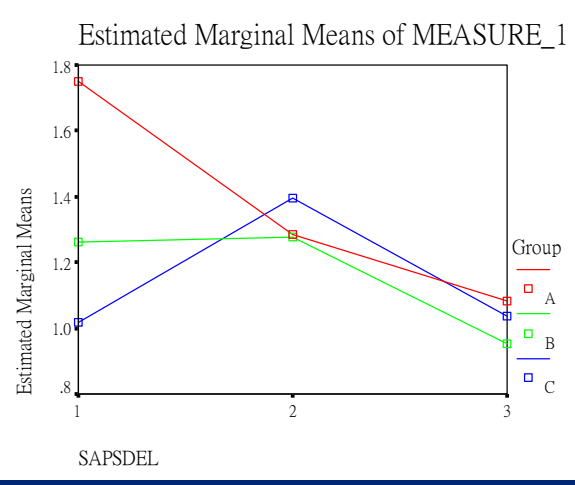




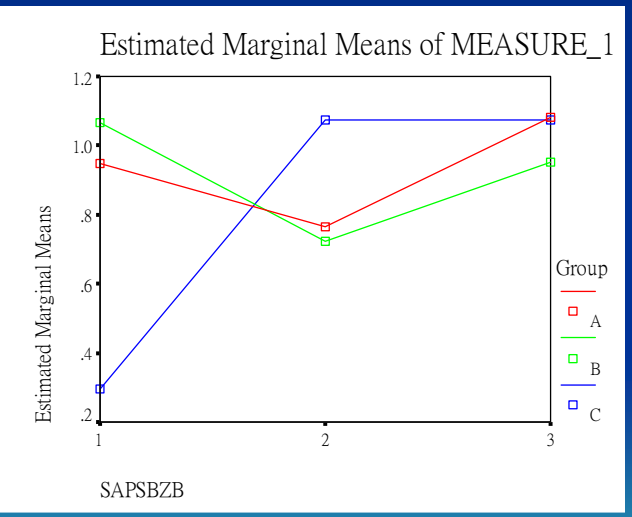
SAPS total score



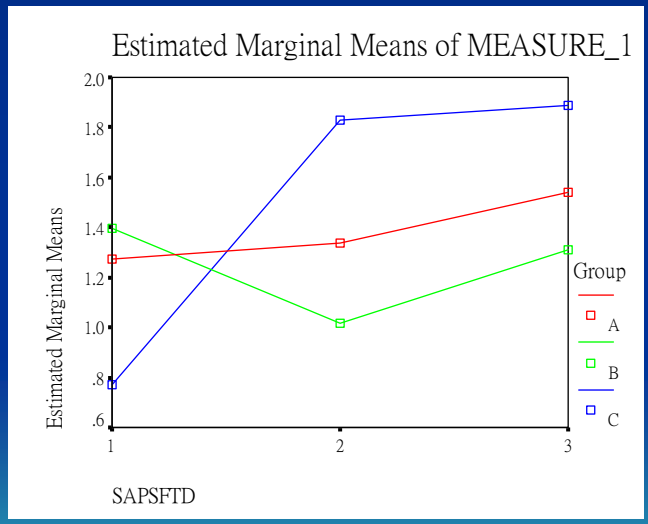
SAP hallucination



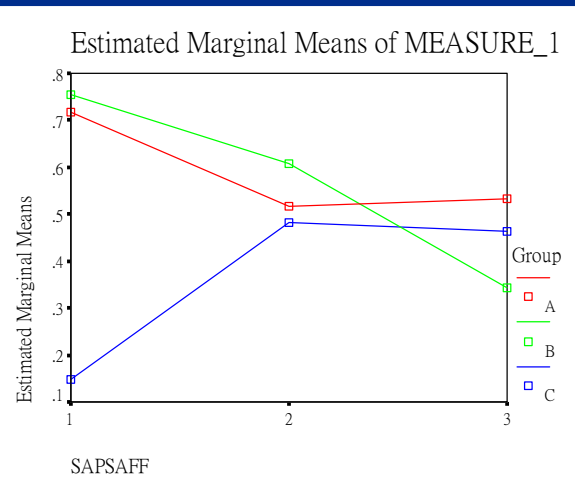
SAPS delusion



SAPS bizarre behaviour



SAPS formal thought disorder

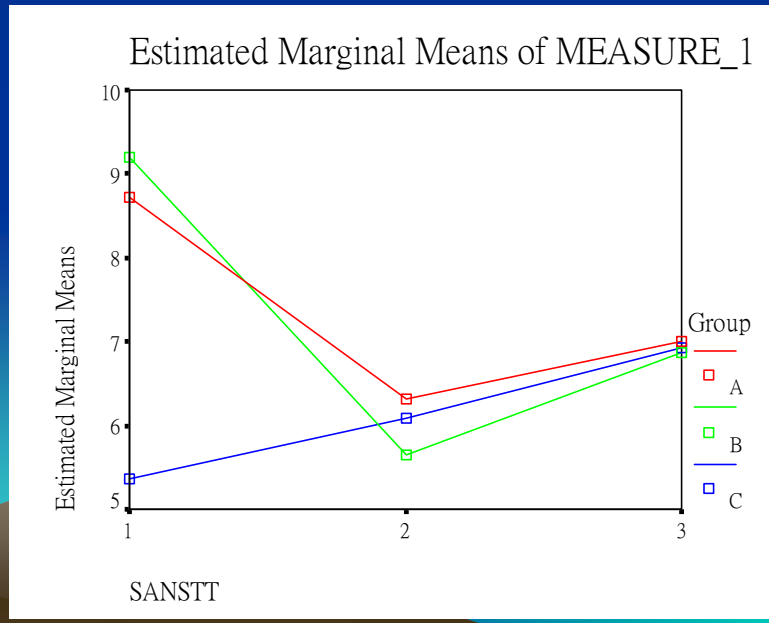


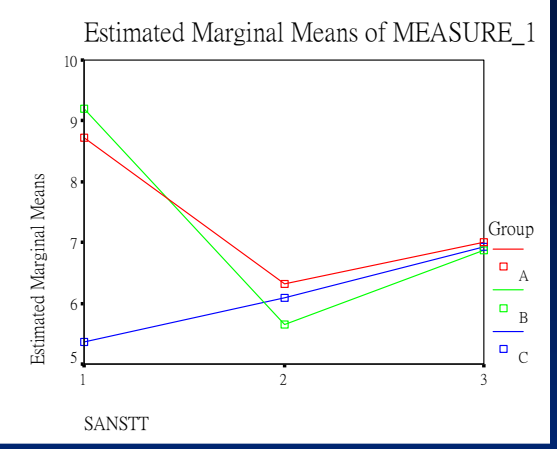
SAPS inappropriate affect

D-Project: result at 2 year SANS total score

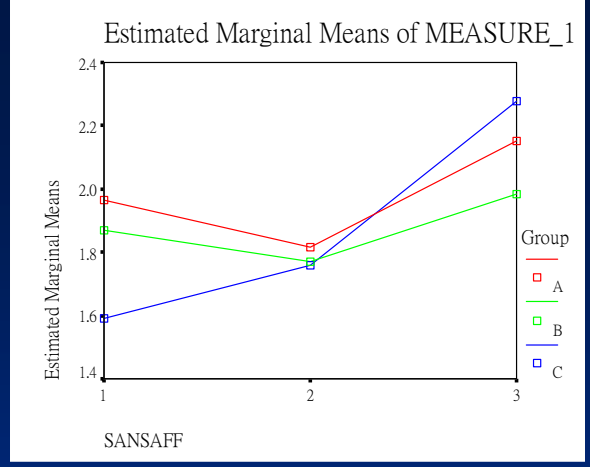
SANS total score	A (N=60)	B (N=59)	C (N=54)
0 month	8.72 (6.01)	9.20 (6.24)	5.37 (5.24)
12 month	6.32 (4.33)	5.64 (4.13)	6.09 (3.69)
24 month	7.00 (4.05)	6.86 (3.71)	6.93 (3.76)

Test of within subjects effects: F= 6.556 p=0.000
Test of between subjects effect: F=1.931 p=0.148

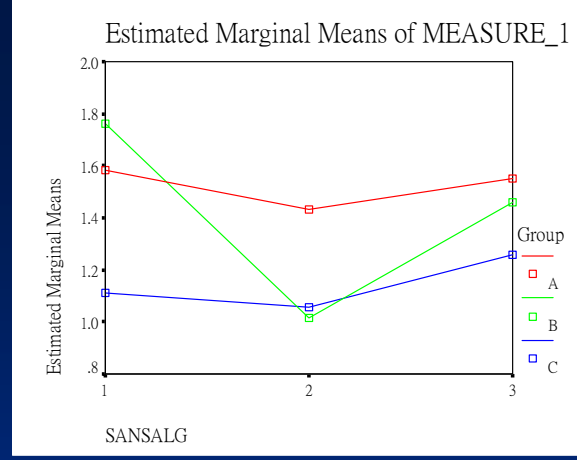




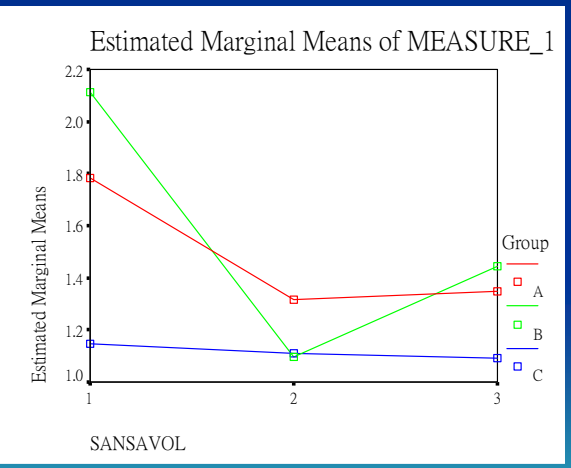
SANS total score



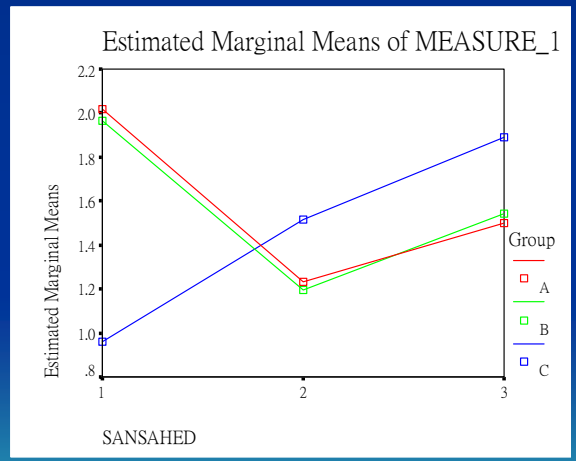
SANS affective flattening



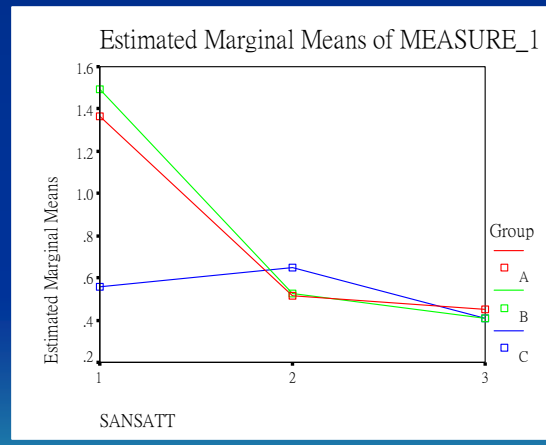
SANS alogia



SANS avolition



SANS anhedonia

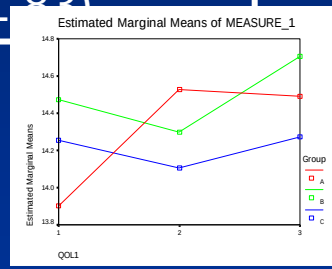


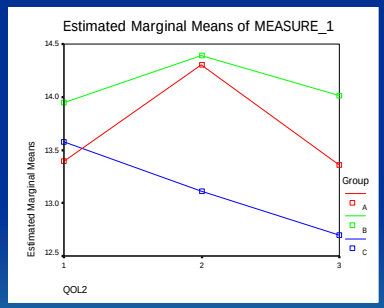
SANS attention

D-Project: result at 2 year
Quality of Life

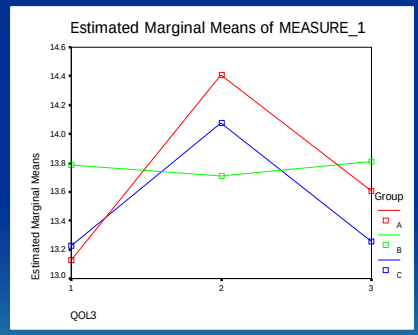
QOL DOM 1	A (N=50)	B (N=46)	C (N=45)
0 month	13.90 (2.34)	14.47 (1.82)	14.26 (2.65)
12 month	14.53 (2.03)	14.30 (1.86)	14.10 (2.43)
24 month	14.49 (1.70)	14.70 (1.45)	14.27 (1.83)

Time Effect F=0.950 p=0.435
Group Effect F=0.409 p=0.665
Time × Group Interaction Effect F=1.102 p=0.356

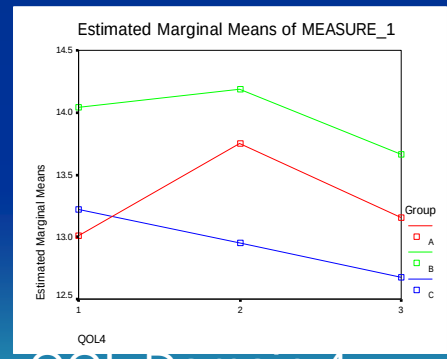




QOL Domain 2
Psychological health



QOL Domain 3
Social acceptability



QOL Domain 4
Environment

Quality of life: result

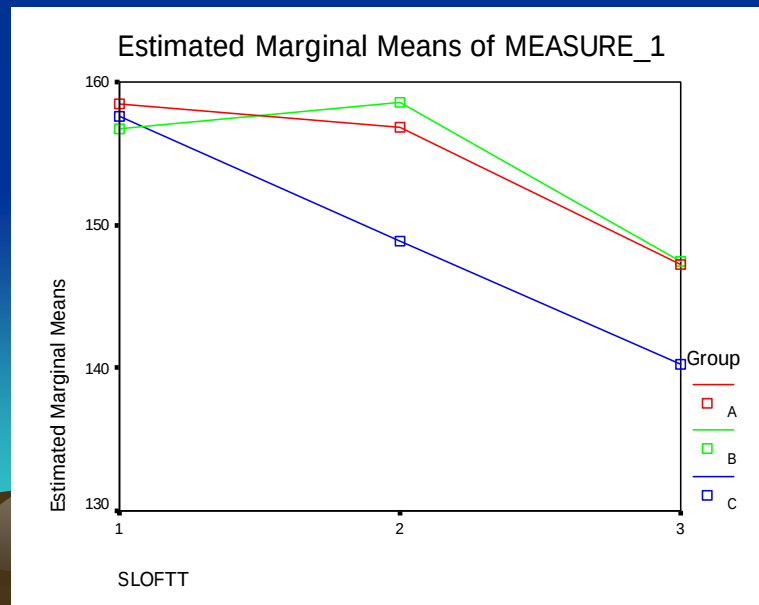
- Improvement in physical domain in treatment groups, not in control group
- Deterioration in psychological health domains in control group
- No difference between 3 groups and within subjects throughout intervention in social acceptability domain
- Environment domain improves in A, but deteriorated in C
- The findings not reached statistical significance level

D-Project: result at 2 year
SLOF total score

SLOFtt	A (N=61)	B (N=62)	C (N=54)
0 month	158.44 (16.33)	156.71 (20.83)	157.57 (13.03)
12 month	156.82 (22.96)	158.63 (21.74)	148.87 (15.32)
24 month	147.25 (22.08)	147.50 (21.96)	140.30 (17.61)

Time Effect F=41.723 p<0.001**
Group Effect F=2.039 p=0.133
Time × Group Interaction Effect F=2.509 p=0.042*

Deteriorated in all subjects,
decline greater in control group



GHQ

- Assess general physical and mental health in family member before/after discharge
- Only 41 of 169 members agreed for assessment
- Majority of relatives refused or not traceable
- Eventually 41 (0 month), 5 (12 months) and 8 (24 months) done, from 44 family members
- 23 subjects discharged to home, 1 living with husband, one living with parents and 21 living alone

PAQ Hospital Version Q8: desire to leave hospital (STATQUO)

- 62/68 non-discharged patient at 2 years responded
- 36 indicated strong/qualified desire to leave hospital
- 13 preferred to remain in hospital
- 8 ambivalent/refused to decide

Group	To leave hospital	Ambivalent	To remain in hospital	total
A	7	5	4	16
B	3	4	0	7
C	26	4	9	39
	36	13	13	62

$X^2 = 10.325$

$P = 0.035$

PAQ Community Version Q6: which place do you like better: here or hospital

- 84/116 of discharged patients responded
- 64 preferred to stay in community
- 4 prefer hospital
- 16 gave no or un-rateable response

Group	Prefer community	Prefer hospital	Total
A	22	1	23
B	31	3	34
C	11	0	11
	64	4	68

$X^2 = 1.317$

$P = 0.518$

D-Project: Cost effectiveness analysis at 2 year

Mean cost	Group A ($)	Group B ($)	Group C ($)	Statistics	Significance
In-patient	606,179 (329,662)	520,631 (303,238)	749,522 (259,248)	F=9.439	P=0.000
Day-patient ($874/day)	16897 (63273)	17425 (60495)	3746 (19700)	F=1.41	P=0.247
CPN visits ($1011/visit)	24184 (17476)	28420 (16151)	160 (1274)	F=77.31	P=0.000
OPD attendances ($717/visit)	4552(4853)	5326(4108)	1457(3448)	F=15.145	P=0.000
Overall cost	651,813 (302,931)	571,802 279613	754885 251434	F=6.828	P=0.001
Outcome by number of discharge	44	54	18		
Cost to discharge one patient	14814	10589	41938		

Cost of in-patient in project (Gp A & B)= $1405 / bed day
Cost of in-patient in extended stay bed in KCH (Gp C) = $ 1227 / bed day
Cost of average in patient stay in KCH = $ 1248 / bed day

Group B is the most effective approach to discharge chronic SMI patients

D Project: conclusion

- CM is an effective means to discharge long stay SMI patients
- Effect of psycho-education not demonstrated by 1 year of intervention
- The mental state, Quality of life and level of function not substantially changed by the different treatment modalities
-

D Project: Limitation

- Raters not really blind to assessment
- The staff are not blind, their a priori knowledge may prompt them more enthusiastic to discharge patients in the treatment groups and more liberal use of atypicals
- Issue of serious medical illness
- Issue of serious violence
- Cohort effect
  - Availability of new rehab facilities
  - Use of newer atypicals
- longer effect from intervention unknown
- ? Generalisability


Outstanding Staff and Teams
Award 2000
Community Psychiatric Service
of
Kwai Chung Hospital
醫院管理局
HOSPITAL
AUTHORITY

Case Management Model in Community Psychiatric Services in HA

International collaboration

Tripartite training program

RAE Projects of HA

1. **Exiters (2002 to now):**
    1. CPH in NTW cluster
    2. KCH in KW cluster
    3. PYNEH HKE cluster

2. **Frequently Readmitted Patients (2008-2009):**
    1. KCH in KW cluster
    2. NTE cluster

Community Mental Health Services: Case Management Model of discharging long stay psychiatric patients in Kwai Chung Hospital

"…Give us the tools, and we will finish the job." Sir Winston Churchill *9th February 1941*

THANK YOU