Home is where the health is! Presentation to HITH Symposium Brisbane 31st March 2011

A/Prof Gideon Caplan Director, Post Acute Care Services Prince of Wales Hospital, Sydney, Australia

Contents

- · HITH @ POWH
- Where did we start?
- Where did we go wrong?
- Where are we going?
- What does the research show us about HITH?

Structure of service at Prince of Wales Hospital

Post acute care	Acute care	Chronic Disease
Rehabilitation at home	Hospital in the Home	COPD
Orthopaedic	IV Antibiotics	Cancer
Geriatric	Clexane	
Staff work across all 3	3 sections, particularly a	on the weekend

24/7 365 days per year, but staff on active duty 13 hrs/day

Post Acute Care Services at Prince of Wales Hospital

Medicare incentive program 1989 Orthogeniatric service Original aims Decrease LOS for elderly orthopaedic pts Prevent unnecessary admissions Increase elective admissions Original results ?????

Subsequent growth

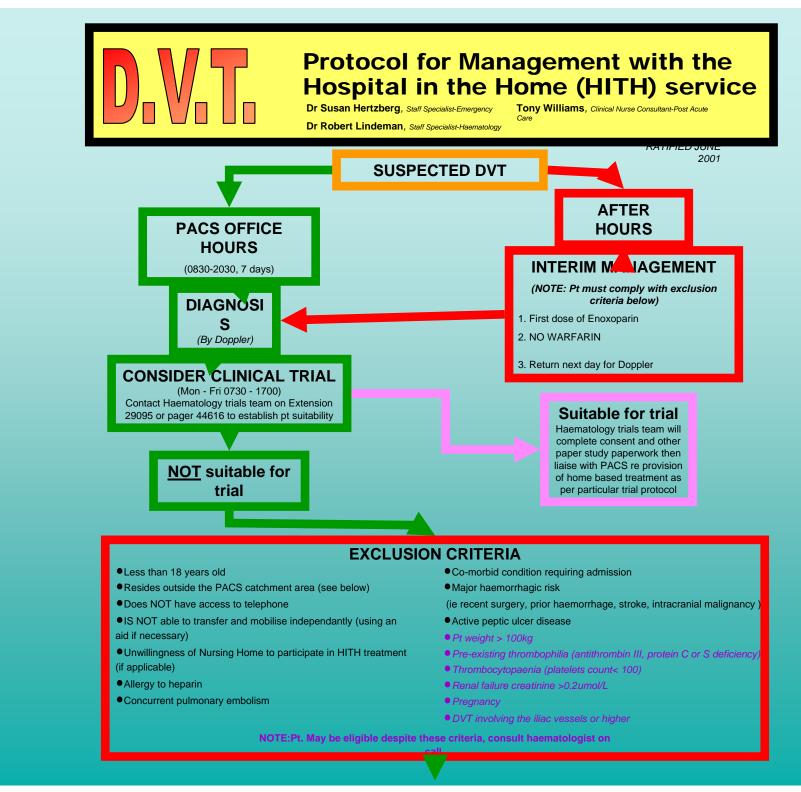
1993	Chronic Respiratory Disease Management	Unfunded
1994	General surgical post acute care (DoSA)	Research grant
1995	HITH	Research grant
1996	DEED (precursor of ASET)	Research grant

HITH evolution

- 1995 1 patient every fortnight in trial
- 1997 post-trial,
 - evidence of effectiveness,
 - need to cultivate referrers
 - Gradual growth
- 2011 800+ patients/year
 - 40% from ED
 - Rest from wards, clinics, rooms, other hosps

So, what do you say after hello...?

- Develop protocols with referrers specialities and ED, to make it (virtually) automatic
- Turn protocols into pathways
- Collect data to show that you are effective





MANAGEMENT

1. Registrar (ED or Medical) to contact PACS team (0830 - 2030 7 days) Extension 22470 or LINK Pager 87401 (Ring operator on 132222). If outside PACS hours of operation, complete documentation and place with details in PACS after hours book.

- 2. Take bloods for coagulation screen, FBC and EUC
- 3. Weigh Patient

4. If patient is taking anti platelet agent or oral contraceptive pill it should be ceased and pt. advised regarding alternative contraception.

- 5. Administer 1.5mg/kg of Enoxoparin subcutaneously
- 6. Administer 10mg of warfarin orally
- 7. Write internal prescriptions for;
 - Daily dose of Enoxoparin @1.5mg/kg for 7 days
 - Warfarin 1mg, 2mg, and 5mg tablets (10 of each)
- 8. Complete HITH Medical management plan
- 9. Prescribe medications on PACS medication chart as follows;
 - Enoxoparin 1.5mg/kg per day S/C
 - Warfarin 10mg day 1, 5mg day 2, and 5mg day 3 and thereafter according to INR

10. PACS to follow up at home for daily assessment, administration of enoxoparin, INR monitoring and titration of warfarin dose.

11. Pt. to have follow up in Haematology outpatients clinic in 2 weeks (PACS will arrange)

PACS catchment area;

Banksmeadow, Beaconsfield, Bondi Junction, Bondi, Botany, Bronte, Centennial Park, Chifley, Clovelly, Coogee, Daceyville, Eastlakes, Hillsdale, Kingsford, Kensington, La Perouse, Little Bay, Maroubra, Matraville, Malabar, Mascot, Phillip Bay, Randwick, Rosebery, Pagewood, Waverley, and Zetland.

Hospital in the home: a randomised controlled trial

Gideon A Capian, John A Ward, Nicholas J Brennan, Janis Coconis, Neville Board and Ann Brown

A cute care of patients at home is one of the fastest-growing healthcare sectors in the United States¹⁻³ and is gaining acceptance in many countries.⁴ Although there have been randomised controlled trials of patients receiving home versus hospital treatment for deep venous thrombosis,⁵ there are few data from trials involving other conditions, or assessing the safety of acute care at home, especially for older patients. It is these patients who occupy an increasing proportion of hospital beds and may derive most benefit from home treatment.^{6,7}

Abstract

Objectives: To compare treatment of acute illness at home and in hospital, assessing safety, effect on geriatric complications, and patient/carer satisfaction.

Design: Randomised controlled trial.

Setting: A tertiary referral hospital affiliated with the University of New South Wales.

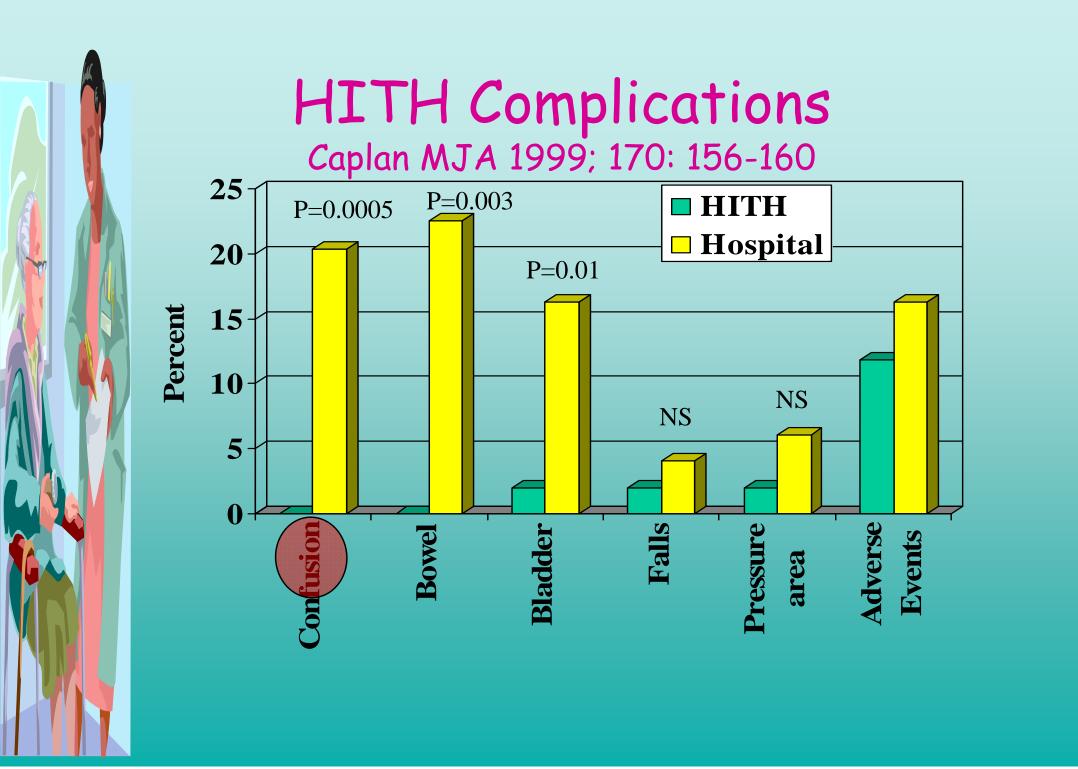
Participants: 100 patients (69% older than 65 years) with a variety of acute conditions, who were assessed in the emergency department as requiring admission to hospital.

Interventions: Patients were allocated at random to be treated by a hospital-in-thehome (HIH) service in their usual residence or to be admitted to hospital.

Main outcome measures: Geriatric complications (confusion, falls, urinary incontinence or retention, faecal incontinence or constipation, phlebitis and pressure areas), patient/carer satisfaction, adverse events, and death.

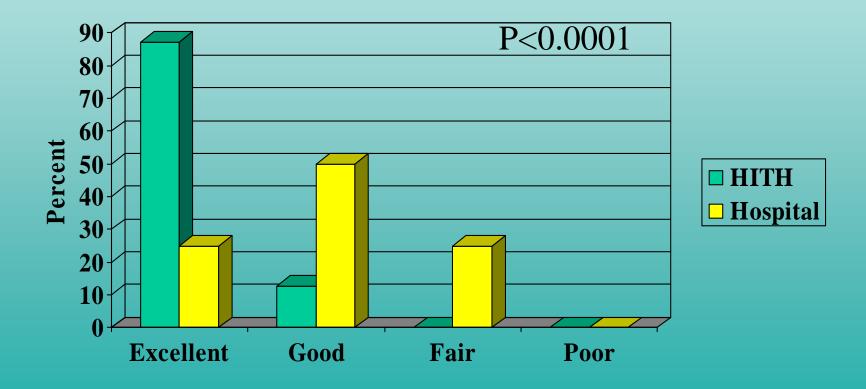
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MJA 1999; 170: 156-160.



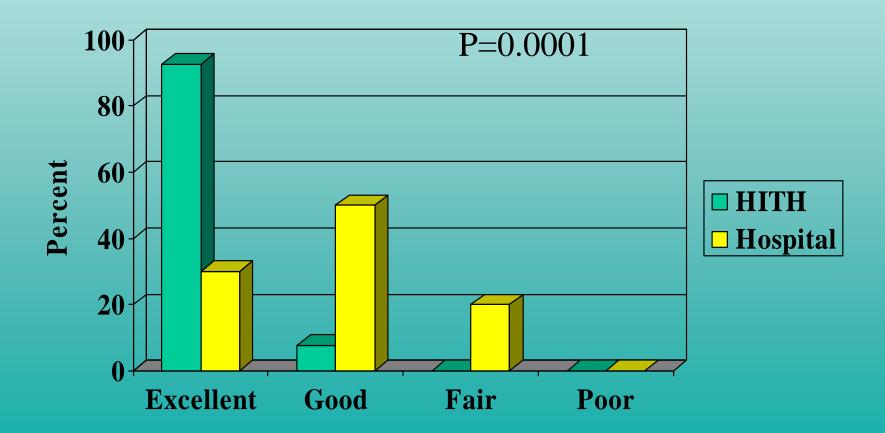
Patient Satisfaction

How would you rate your treatment overall?



Carer Satisfaction

How would you rate the treatment overall?



HITH Costing Board ANZ J Pub HIth 2000; 20: 24-9.

	HITH	Hospital		
Mean	\$1794	\$3614		
95% CI	\$1438- 2150	\$2881- 4347		
	P <0.0001			

HITH Conclusions

- HITH offers selected patients
 - Decreased complications
 - Greater patient satisfaction
 - at lower cost
- The Hospital is not dead
- HITH is a viable, cost-effective option

REACH OUT TRIAL

- <u>R</u>ehabilitation of
- <u>E</u>lderly patients
- <u>A</u>nd
- <u>C</u>are at
- <u>H</u>ome
- <u>O</u>r
- <u>U</u>sual
- <u>T</u>reatment

Age and Ageing 2006; **35:** 53–60 © doi:10.1093/ageing/afi206 Published electronically 20 October 2005

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Does home treatment affect delirium? A randomised controlled trial of rehabilitation of elderly and care at home or usual treatment (The REACH-OUT trial)

Gideon A. Caplan^{1,2}, Janis Coconis¹, Neville Board³, Allyn Sayers¹, Jan Woods¹

¹Post Acute Care Services, Prince of Wales Hospital, Randwick, Sydney, New South Wales 2031, Australia ²School of Public Health and Community Medicine, University of New South Wales, Sydney, New South Wales 2052, Australia ³Department of Health, North Sydney, New South Wales 2060, Australia

Address correspondence to: G. A. Caplan. Tel: (+61) 2 9382 2470. Fax: (+61) 2 9382 2477. Email: g.caplan@unsw.edu.au

Abstract

Background: delirium is a frequent adverse consequence of hospitalisation for older patients, but there has been little research into its prevention. A recent study of Hospital in the Home (admission substitution) noted less delirium in the home-treated group. **Setting:** a tertiary referral teaching hospital in Sydney, Australia.

Methods: we randomised 104 consecutive patients referred for geriatric rehabilitation to be treated in one of two ways, either in Hospital in the Home (early discharge) or in hospital, in a rehabilitation ward. We compared the occurrence of delirium measured by the confusion assessment method. Secondary outcome measures were length of stay, hospital bed days, cost of acute care and rehabilitation, functional independence measure (FIM), Mini-Mental State Examination (MMSE) and geriatric depression score (GDS) assessed on discharge and at 1- and 6-month follow-up and patient satisfaction.

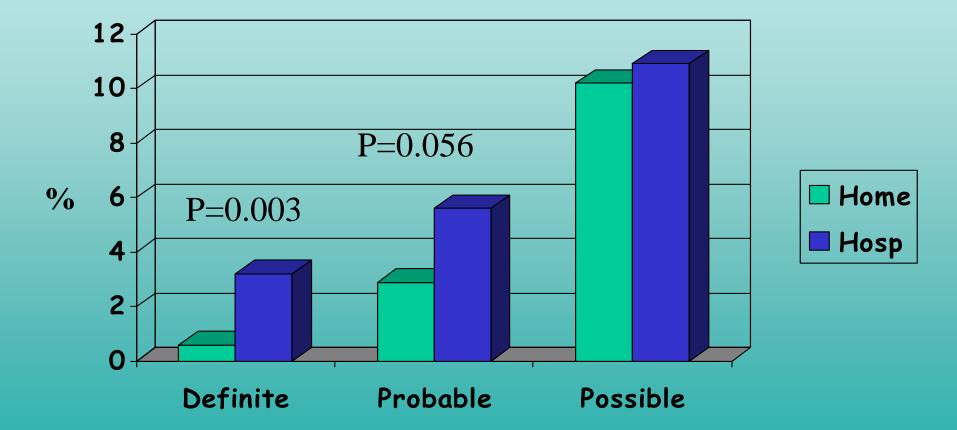
REACH OUT Baseline Characteristics

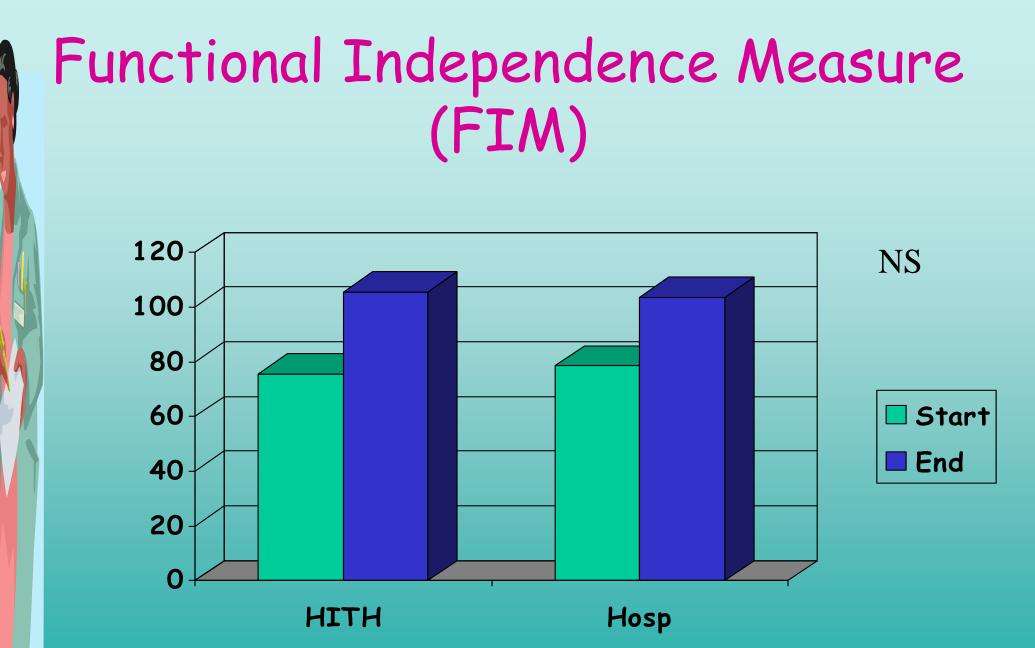
	Home Rehab	Hospital Rehab	P value
Number	70	34	
Age - Mean	83.9	84.0	0.93
Sex (F:M)	43:20	22:11	1.00
IHD n (%)	29 (46.03)	19 (57.58)	0.39
Diabetes n (%)	7 (11.11)	4 (12.12)	1.00
Dementia n (%)	17 (27.0)	7 (21.2)	0.63

Length of stay

	Home	Hospital	P value
Acute LOS	18.7	17.0	0.45
Rehabilitation LOS	16.0	23.1	0.016
Total length of episode of care	34.9	40.1	0.18
Hospital bed days	20.3	40.1	<0.001

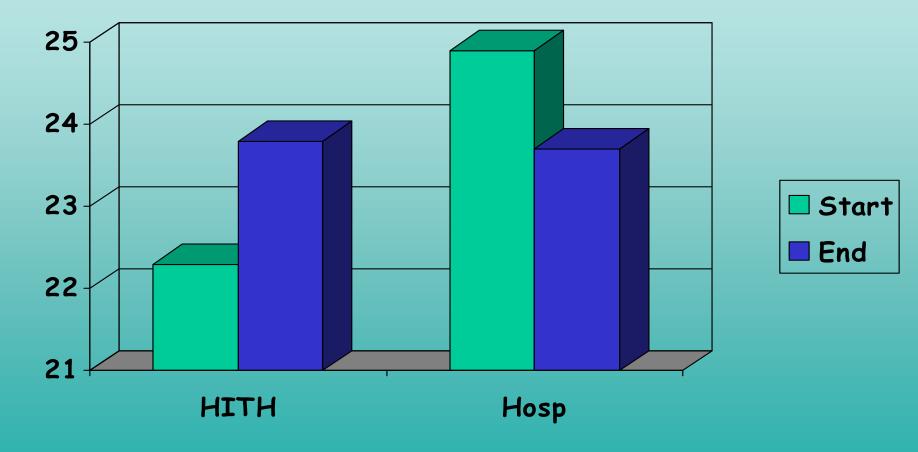
Positive Confusion Assessment Method (CAM) during rehabilitation





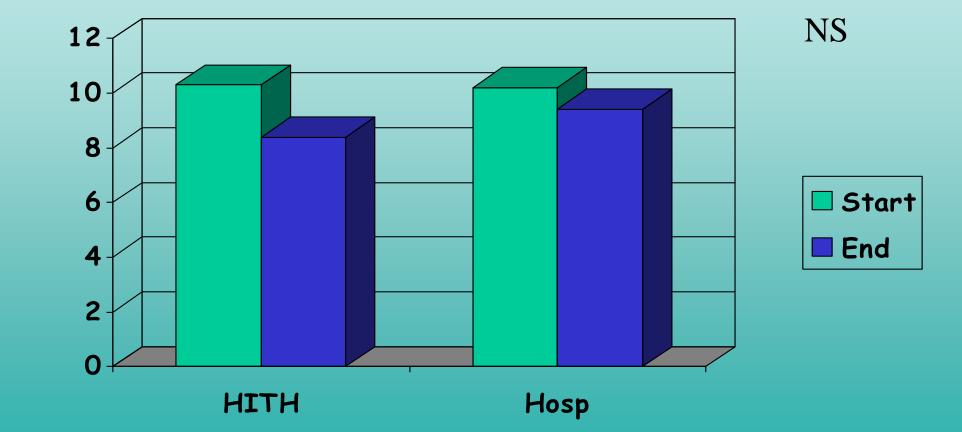


Mini Mental State Examination (MMSE)



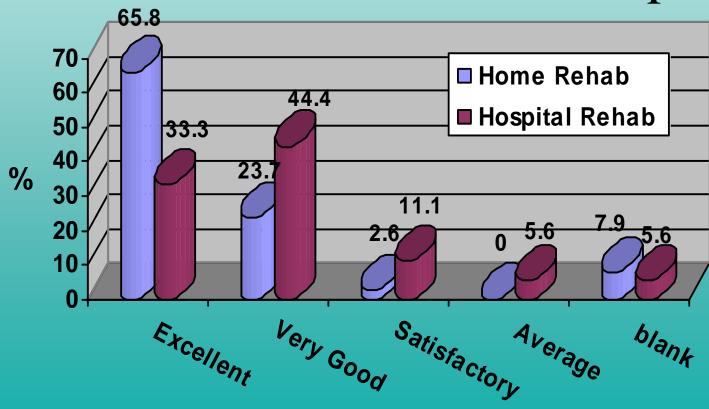
Between groups p=0.085

Geriatric Depression Scale



Patient satisfaction

Patient satisfaction with overall quality of care received from the rehabilitation team P = 0.006



REACH OUT Costing

Cost	Home	Hospital	P value
Acute phase	\$13,292	\$11,003	0.234
Rehabilitation phase	\$ 5,954	\$14,413	< 0.001
Total	\$18,147	\$25,042	0.011

Conclusion

- Alternatives to hospitalisation for older patients, where feasible, offer
 - superior health outcomes,
 - greater patient satisfaction
 - at a lower cost

Does 'Hospital in the Home' treatment prevent delirium?

Gideon Caplan

Prince of Wales Hospital, Randwich NSW 2031, Sydney, Australia and, School of Public Health & Community Medicine, University of New South Wales, Sydney, Australia Tel.: +61 293 822 470; Fax: +61 293 822 477; E-mail: g.caplan@ unsuledu.au

Delirium is a common problem, mostly affecting older patients in hospital, which results in greater mortality, nursing-home placement and cognitive and functional impairment. Delirium can be triggered by a wide range of conditions, treatments and procedures, as well as by certain environments. Some hospital environments have been causally implicated, but until it was possible to compare treatment in-hospital with treatment in other places, the observation remained at the level of an association. However, the development of 'Hospital in the Home' services has allowed clinicians to explore this question scientifically. Recently, a number of studies comparing treatment of acute conditions, both medical and surgical, and rehabilitation in hospital with treatment at home, have found a lower incidence of delirium with home treatment, as well as lower rates of the sequelae of delirium. Since delirium is an indicator of a wide range of subsequent poor outcomes, this information has broad implications for the delivery of hospital-level services to older patients, and means that health services should seek to provide Hospital in the Home services wherever older patients are treated.

Aging Health (2008) 4(1), 69--74

If HITH can prevent delirium, what are the implications?

- What is associated with delirium?
 - Many bad outcomes
 - Death
 - Cognitive and functional decline
 - Nursing home placement

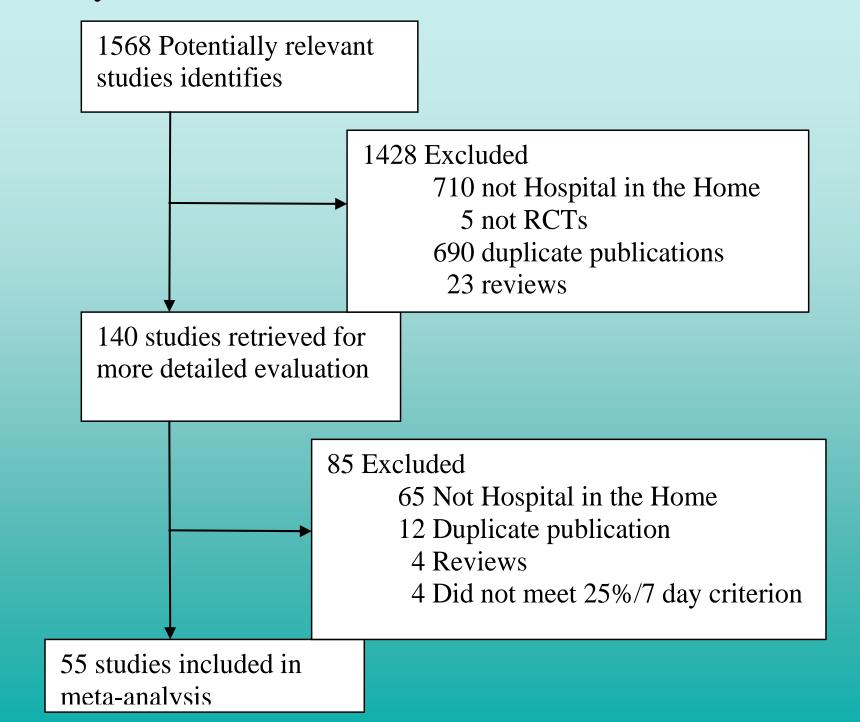
Meta-analysis protocol Caplan GA, Sulaiman N, Mangin D, Aimonino Ricauda N, Wilson A, Barclay L.

- Meta-analysis of RCTs of HITH where the HITH <u>substituted</u> for a sig. time in hospital as defined by >25% LOS of control group, or at least 1 week, and where treatment had a restorative or curative intent, ie not palliative
- Adult patients
- 38 studies with data on mortality
- 17 additional studies

What are the effects of HITH?

- Mortality
- Readmission
- Satisfaction
 - Patient
 - Carer
- Cost
- Total 55 included studies

Study Selection



Mortality

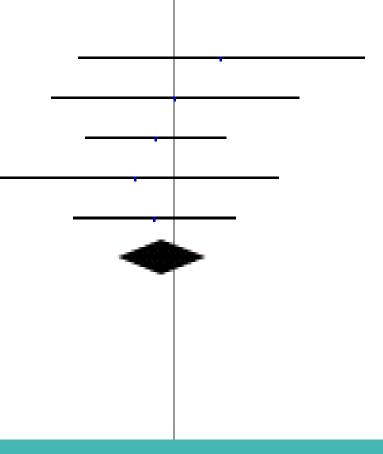
- 38 randomised controlled trials
- 6318 patients
- Subdivided into
 - Medical
 - Rehabilitation
 - Surgical/cancer
 - Psychiatry

			Hoosi	ital		Oddo Datia	Oddo Datio
Official and Order and Street	HITH		Hospit		L	Odds Ratio	Odds Ratio
Study or Subgroup	Events	10(9)	Events	10(9)	weigm	Peto, Fixed, 95% Cl	Peto, Fixed, 95% Cl
3.1.1 Medical							
Caplan 1999	6		7	49	1.9%	0.80 [0.25, 2.57]	
Carratalà 2005	1	102	0	101	0.3%	3.00 [0.12, 74.52]	
Cotton 2000	1	41	2	40	0.4%	0.47 [0.04, 5.46]	
Davies 2000	9	100	4	50	1.7%	1.14 [0.33, 3.89]	
Diaz Lobato 2005	0	20	1	20	0.2%	0.32 [0.01, 8.26]	
Hernandez 2003	5	121	7	101	1.9%	0.58 [0.18, 1.88]	
Hill 1978	17	132	14	132	4.7%	1.25 [0.59, 2.64]	
Koopman 1996	14	202	16	198	4.7%	0.85 [0.40, 1.79]	
Levine 1996	11	247	17	253	4.3%	0.65 [0.30, 1.41]	
Mather 1976	44	226	58	224	13.3%	0.69 [0.44, 1.08]	
Melin 1992	40	150	26	99	7.9%	1.02 [0.57, 1.82]	
Ojoo 2002	1	30	3	30	0.5%	0.31 [0.03, 3.17]	
Ricauda 2008	9	52	12	52	2.8%	0.70 [0.27, 1.83]	
Richards 1998	12	160	6	81	2.5%	1.01 [0.37, 2.81]	
Shepperd 1998	3	15	3	17	0.8%	1.17 [0.20, 6.89]	
Skwarska 2000	4	122	6	62	1.5%	0.32 [0.09, 1.17]	
Tibaldi 2004	24	56	26	53	4.6%	0.78 [0.37, 1.66]	
Wilson 1999	26	101	30	96	6.8%	0.76 [0.41, 1.42]	
Subtotal (95% CI)		1928		1658	61.2%	0.79 [0.64, 0.98]	•
Total events	227		238				
Heterogeneity: Chi ² = 7.	.54, df = 17	(P = 0.	.98); I² = C	J%			
Test for overall effect: Z	•	•	••				
	•	·					



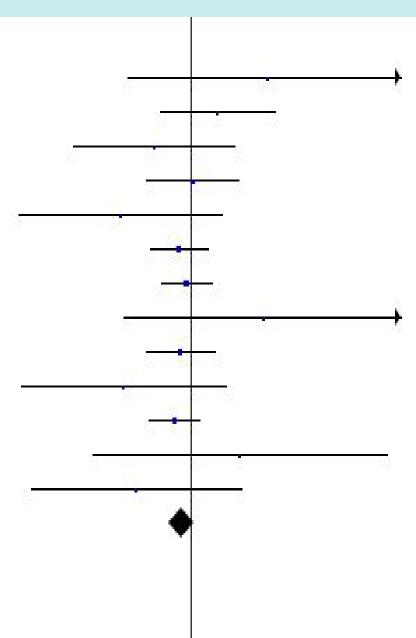
3.1.2 Surgical

Bonnema 1998	1	61	0	59	0.3%	2.95 (0.12, 73.88)		
Bundred 1998	1	49	1	51	0.3%	1.04 (0.06, 17.13)		
Crotty 2002	3	34	4	32	1.1%	0.68 [0.14, 3.29]		
Shepperd 1998	0	37	1	49	0.3%	0.43 (0.02, 10.89)		
Wells 2004	2	54	3	54	0.8%	0.65 (0.10, 4.08)		
Subtotal (95% CI)		235		245	2.7%	0.78 [0.29, 2.10]		
Total events	7		9					
Heterogeneity: Chi² = 0.89, df = 4 (P = 0.93); I² = 0%								
Test for overall effect: Z = 0.49 (P = 0.62)								





1.1.3 Rehabilitation studie)S								
Anderson 2000	2	42	0	44	0.3%	5.49 (0.26, 117.88)			
Askim 2004	8	31	5	31	1.6%	1.81 [0.52, 6.31]			
Bautz-Holter 2002	2	42	4	40	0.8%	0.45 (0.08, 2.61)			
Caplan 2006	15	70	7	34	2.5%	1.05 [0.38, 2.88]			
Donnelly 2004	1	59	4	54	0.5%	0.22 (0.02, 1.99)			
Indredavik 2000	21	160	26	160	6.6%	0.78 [0.42, 1.45]			
Kalra 2000	21	144	47	301	8.2%	0.92 (0.53, 1.61)			
Mayo 2000	2	58	0	56	0.3%	5.00 (0.23, 106.50)			
Ricauda 1998	21	60	24	60	4.7%	0.81 (0.39, 1.69)			
Rodgers 1997	1	46	4	46	0.5%	0.23 [0.03, 2.17]			
Rudd 1997	26	167	34	164	8.1%	0.71 [0.40, 1.24]			
Suwanwela 2002	1	52	0	50	0.2%	2.94 [0.12, 73.93]			
Widén Holmqvist 1998	1	41	3	40	0.5%	0.31 (0.03, 3.10)			
Subtotal (95% CI)		972		1080	34.9%	0.83 [0.63, 1.08]			
Total events	122		158						
Heterogeneity: Chi² = 9.41, df = 12 (P = 0.67); l² = 0%									
Test for overall effect: Z = 1.38 (P = 0.17)									



Test for overall effect: Z = 1.38 (P = 0.17)



	нітн		Hospit	al		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	Peto, Fixed, 95% Cl	Peto, Fixed, 95% Cl
3.1.1 Medical							
Caplan 1999	6	51	7	49	1.9%	0.80 [0.25, 2.57]	
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Cotton 2000	1	41	2	40	0.4%	0.47 [0.04, 5.46]	
Davies 2000	9	100	4	50	1.7%	1.14 [0.33, 3.89]	
Diaz Lobato 2005	0	20	1	20	0.2%	0.32 [0.01, 8.26]	
Hernandez 2003 Hill 1978	5 17	121 132	7 14	101 132	1.9% 4.7%	0.58 [0.18, 1.88]	
Koopman 1996	14	202	14	198	4.7%	1.25 [0.59, 2.64] 0.85 [0.40, 1.79]	
Levine 1996	11	247	17	253	4.3%	0.65 [0.30, 1.41]	_
Mather 1976	44	226	58	224	13.3%	0.69 [0.44, 1.08]	_ _
Melin 1992	40	150	26	99	7.9%	1.02 [0.57, 1.82]	_ _
Ojoo 2002	1	30	3	30	0.5%	0.31 [0.03, 3.17]	
Ricauda 2008	9	52	12	52	2.8%	0.70 [0.27, 1.83]	
Richards 1998	12	160	6	81	2.5%	1.01 [0.37, 2.81]	
Shepperd 1998	3	15	3	17	0.8%	1.17 [0.20, 6.89]	
Skwarska 2000	4	122	6	62	1.5%	0.32 [0.09, 1.17]	
Tibaldi 2004	24	56	26	53	4.6%	0.78 [0.37, 1.66]	
Wilson 1999 Subtotal (05% CD	26	101 1928	30	96 1658	6.8% 61.2%	0.76 [0.41, 1.42]	
Subtotal (95% CI)		1928	220	1038	01.2%	0.79 [0.64, 0.98]	•
Total events Heterogeneity: Chi ² = 7.5	227 4 df = 17 (P - 0	238 239: 1≊ – 0	%			
Test for overall effect: Z =		•	90),1 = 0	70			
	2.15 (1 = (0.00)					
3.1.2 Surgical							
Bonnema 1998	1	61	0	59	0.3%	2.95 [0.12, 73.88]	
Bundred 1998	1	49	1	51	0.3%	1.04 [0.06, 17.13]	
Crotty 2002	3	34	4	32	1.1%	0.68 [0.14, 3.29]	
Shepperd 1998	0	37	1	49	0.3%	0.43 [0.02, 10.89]	
Wells 2004	2	54	3	54	0.8%	0.65 [0.10, 4.08]	
Subtotal (95% CI)	_	235	-	245	2.7%	0.78 [0.29, 2.10]	
Total events	7 0.46 - 1.00		9				
Heterogeneity: Chi ² = 0.8 Test for overall effect: Z =	• •		3); I== 0%	5			
Testion overall effect. Z =	0.49 (F = 1	0.02)					
3.1.3 Rehabilitation							
Anderson 2000	2	42	0	44	0.3%	5.49 [0.26, 117.88]	
Askim 2004	8	31	5	31	1.7%	1.81 [0.52, 6.31]	
Bautz-Holter 2002	2	42	4	40	0.9%	0.45 [0.08, 2.61]	
Caplan 2006	15	70	7	34	2.6%	1.05 [0.38, 2.88]	
Donnelly 2004	1	59	4	54	0.5%	0.22 [0.02, 1.99]	
Indredavik 2000	21	160	26	160	6.8%	0.78 [0.42, 1.45]	
Kalra 2000	21	144	47	301	8.5%	0.92 [0.53, 1.61]	
Mayo 2000 Ricauda 1998	2	58 60	0	56	0.3%	5.00 [0.23, 106.50]	
Rodgers 1997	21 1	46	24 4	60 46	4.8% 0.5%	0.81 [0.39, 1.69] 0.23 [0.03, 2.17]	
Rudd 1997	26	167	34	164	8.3%	0.71 [0.40, 1.24]	_ _
Suwanwela 2002	1	52	0	50	0.3%	2.94 [0.12, 73.93]	
Widén Holmqvist 1998	1	41	3	40	0.5%	0.31 [0.03, 3.10]	
Subtotal (95% Cl)		972		1080	35.9%	0.83 [0.63, 1.08]	◆
Total events	122		158				
Heterogeneity: Chi ² = 9.4			67); I ² = 0	%			
Test for overall effect: Z =	1.38 (P = 0	0.17)					
3.1.4 Psychiatric							
Zwerling 1964	1	100	0	100	0.3%	3.03 [0.12, 75.28]	
Subtotal (95% CI)	1	100	U	100	0.3%	3.03 [0.12, 75.28] 3.03 [0.12, 75.28]	
Total events	1		0		0.010	5100 [0112,1020]	
Heterogeneity: Not applic			5				
Test for overall effect: Z =		0.50)					
Total (95% Cl)		3235		3083	100.0%	0.81 [0.69, 0.95]	◆
Total events	357		405				
Heterogeneity: Chi ² = 18.	•	-		0%			
Test for overall effect: Z =					7.17.0~		Favours experimental Favours control
Test for subgroup differe	nces: Chi*	= 0.71	, ar = 3 (F	-= 0.8	n, in = 0%)	
-							

Overall

- Mortality reduced by 19%; p=0.01
- From 13.14% to 11.04%
- Absolute Risk Reduction 2.10%
- Number needed to treat in HITH to save one life is 48

Comparison

- Treatment of Hypertension in the elderly (Cochrane Review)
 NNT for 5 yrs to prevent one death = 63
- Antiplatelet therapy for acute stroke (Cochrane Review)
 NNT to prevent one death = 77

Readmission

- 34 RCTs 4856 patients
- Measured in number of patients readmitted. (Total number of readmissions is greater)
- An important measure of quality of care and a health outcome



~	HITH		Hospit			Odds Ratio	Odds Ratio
Study or Subgroup 1.1.1 Medical	Events	Total	Events	Total	Weight	Peto, Fixed, 95% Cl	Peto, Fixed, 95% Cl
Caplan 1999	3	51	5	49	1.3%	0.55 [0.12, 2.44]	
Carratalà 2005	7	110	8	114	2.6%	0.90 [0.32, 2.57]	
Corwin 2005	O	98	3	96	0.3%	0.14 [0.01, 2.66]	←
Cotton 2000	12	41	12	40	3.1%	0.97 [0.37, 2.51]	
Davies 2000	37	100	17	50	5.6%	1.14 [0.56, 2.32]	-
Diaz Lobato 2005	1	20	0	20	0.3%	3.15 [0.12, 82.16]	
Hernandez 2003	23	121	26	101	7.0%	0.68 [0.36, 1.28]	
Melin 1992	51	110	32	73	8.0%	1.11 [0.61, 2.01]	
Ojoo 2002	10	30	13	30	2.6%	0.65 [0.23, 1.86]	
Ricauda 2008	17	52	34	52	4.3%	0.26 [0.11, 0.58]	
Richards 2005	1 7	24	0	25	0.3%	3.26 [0.13, 83.90]	
Shepperd 1998 Skwarska 2000	27	15 122	6 21	17 62	1.4% 6.2%	1.60 [0.39, 6.64]	
Wilson 1999	21	101	16	96	5.5%	0.55 [0.28, 1.09] 1.31 [0.64, 2.70]	
Subtotal (95% Cl)	21	995	10	825	48.3%	0.80 [0.63, 1.02]	•
Total events	217		193				•
Heterogeneity: Chi ² = 17.) (P = 0		24%			
Test for overall effect: Z =		-					
	-	-					
1.1.2 Surgical							
Bundred 1998	1	49	3	51	0.5%	0.33 [0.03, 3.32]	
Crotty 2002	7	34	9	32	2.2%	0.66 [0.21, 2.06]	
Horgan 2000	2	50	0	51	0.3%	5.31 [0.25, 113.41]	
Palmer-Hill 2000	1	32	1	28	0.4%	0.87 [0.05, 14.60]	
Ruckley 1978	0	117	3	243	0.3%	0.29 [0.01, 5.71]	
Shepperd 1998 Shepperd 1998	2 3	37 114	1 13	49 124	0.5% 1.7%	2.74 [0.24, 31.46] 0.23 [0.06, 0.83]	
Siggeirsdottir 2005	0	27	13	23	0.3%	0.27 [0.01, 7.02]	
Wells 2004	2	54	2	54	0.7%	1.00 [0.14, 7.37]	
	_		-				
Subtotal (95% Cl)		514		655	6.9%	0.57 [0.30, 1.09]	
Subtotal (95% Cl) Total events	18	514	33	655	6.9%	0.57 [0.30, 1.09]	
					6.9%	0.57 [0.30, 1.09]	
Total events	0, df = 8 (F	P = 0.5			6.9%	0.57 [0.30, 1.09]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z =	0, df = 8 (F	P = 0.5			6.9%	0.57 [0.30, 1.09]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation	i0, df = 8 (F i 1.70 (P =	P = 0.5 0.09)	8); I² = 0%	6			
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000	0, df = 8 (F 1.70 (P = 15	P = 0.5 0.09) 42	8); I ² = 0% 11	6 44	3.3%	1.67 [0.66, 4.22]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004	i0, df = 8 (F 1.70 (P = 15 8	P = 0.5 0.09) 42 31	8); I ² = 0% 11 6	6 44 31	3.3% 2.0%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81]	
Total events Heterogeneity: Chi [≖] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002	0, df = 8 (F 1.70 (P = 15 8 3	P = 0.5 0.09) 42 31 42	8); I ² = 0% 11 6 4	6 44 31 40	3.3% 2.0% 1.2%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31]	
Total events Heterogeneity: Chi [≈] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006	0, df = 8 (F 1.70 (P = 15 8 3 13	P = 0.5 0.09) 42 31 42 70	8); I ² = 0% 11 6 4 8	6 44 31 40 34	3.3% 2.0% 1.2% 2.9%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01]	
Total events Heterogeneity: Chi [≈] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004	0, df = 8 (F 1.70 (P = 15 8 3	P = 0.5 0.09) 42 31 42	8); I ² = 0% 11 6 4	6 44 31 40	3.3% 2.0% 1.2%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42]	
Total events Heterogeneity: Chi [≈] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006	0, df = 8 (F 1.70 (P = 15 8 3 13 6	P = 0.5 0.09) 42 31 42 70 59	8); I [≠] = 0% 11 6 4 8 7	6 44 31 40 34 54	3.3% 2.0% 1.2% 2.9% 2.1%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01]	
Total events Heterogeneity: Chi ^a = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3	P = 0.5 0.09) 42 31 42 70 59 58	8); I ² = 09 11 6 4 8 7 10	6 44 31 40 34 54 56	3.3% 2.0% 1.2% 2.9% 2.1% 1.6%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97]	
Total events Heterogeneity: Chi [≢] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998	0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5	2 = 0.5 0.09) 42 31 42 70 59 58 46 167 41	8); I ² = 09 11 6 4 8 7 10 5	6 44 31 40 34 56 46 164 40	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66]	
Total events Heterogeneity: Chi ^a = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI)	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10	P = 0.5 0.09) 42 31 42 70 59 58 46 167	8); I ² = 09 11 6 4 8 7 10 5 42 10	6 44 31 40 34 54 56 46 164	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 1.6%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70]	
Total events Heterogeneity: Chi ^a = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107	2 = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556	8); I ² = 09 11 6 4 8 7 10 5 42 10 103	6 44 31 40 34 56 46 164 40 509	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66]	
Total events Heterogeneity: Chi ^a = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ^a = 6.3	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F	P = 0.5 0.09) 42 31 42 70 59 58 167 41 556 P = 0.6	8); I ² = 09 11 6 4 8 7 10 5 42 10 103	6 44 31 40 34 56 46 164 40 509	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66]	
Total events Heterogeneity: Chi ^a = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F	P = 0.5 0.09) 42 31 42 70 59 58 167 41 556 P = 0.6	8); I ² = 09 11 6 4 8 7 10 5 42 10 103	6 44 31 40 34 56 46 164 40 509	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66]	
Total events Heterogeneity: Chi [≈] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi [≈] = 6.3 Test for overall effect: Z =	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F	P = 0.5 0.09) 42 31 42 70 59 58 167 41 556 P = 0.6	8); I ² = 09 11 6 4 8 7 10 5 42 10 103	6 44 31 40 34 56 46 164 40 509	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66]	
Total events Heterogeneity: Chi ^a = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ^a = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P =	P = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556 P = 0.6 0.79)	8); I ² = 09 11 6 4 8 7 10 5 42 10 103 1); I ² = 09	6 44 31 40 34 54 56 164 40 509 6	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8% 29.1 %	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ² = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20	P = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556 P = 0.6 0.79) 92	8); I ² = 09 11 6 4 8 7 10 5 42 10 10 103 1); I ² = 09 10	6 44 31 40 34 54 56 164 40 509 6 8	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 11.7% 2.8% 29.1%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ² = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992 Stein 1975	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P =	P = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556 P = 0.6 0.79)	8); I ² = 09 11 6 4 8 7 10 5 42 10 103 1); I ² = 09	6 44 31 40 34 54 56 164 40 509 6	3.3% 2.0% 1.2% 2.9% 1.6% 11.6% 11.7% 2.8% 29.1% 4.2% 0.3%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ² = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0	P = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556 0.79) 92 60	8); I ² = 09 11 6 4 8 7 10 5 42 10 10 10 1); I ² = 09 10 14	6 44 31 40 34 56 164 40 509 6 97 54	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 11.7% 2.8% 29.1%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% Cl) Total events Heterogeneity: Chi ² = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1980	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4	P = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556 P = 0.6 0.79) 92 60 64	8); I ² = 09 11 6 4 8 7 10 5 42 10 10 10 10 10 14 34	6 44 31 40 34 56 46 164 509 6 5 5 4 58	3.3% 2.0% 1.2% 2.9% 1.6% 1.6% 1.6% 2.8% 29.1% 4.2% 0.3% 2.2%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15]	
Total events Heterogeneity: Chi [≈] = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi [≈] = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1980 Zwerling 1964	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4	P = 0.5 0.09) 42 31 42 70 58 46 167 41 556 P = 0.6 0.79) 92 60 64 100	8); I ² = 09 11 6 4 8 7 10 5 42 10 10 10 10 10 14 34	6 44 31 40 34 54 46 164 40 509 6 6 97 58 100	3.3% 2.0% 1.2% 2.1% 1.6% 1.6% 11.7% 2.8% 29.1 % 4.2% 0.3% 2.2% 9.0%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ² = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1980 Zwerling 1964 Subtotal (95% CI) Total events Heterogeneity: Chi ² = 36.	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4 40 64 11, df = 3	P = 0.5 0.09) 42 31 42 70 59 58 46 167 556 P = 0.6 0.79) 92 60 64 100 316 (P < 0.	8); I ² = 09 11 6 4 8 7 10 5 42 10 103 1); I ² = 09 10 14 34 45 103	6 44 31 40 34 54 46 164 40 509 6 7 54 509 54 100 309	3.3% 2.0% 1.2% 2.9% 1.6% 11.7% 2.8% 29.1% 4.2% 0.3% 9.0% 15.7 %	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43]	
Total events Heterogeneity: Chi ² = 6.6 Test for overall effect: Z = 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: Chi ² = 6.3 Test for overall effect: Z = 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1980 Zwerling 1964 Subtotal (95% CI)	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4 40 64 11, df = 3	P = 0.5 0.09) 42 31 42 70 59 58 46 167 556 P = 0.6 0.79) 92 60 64 100 316 (P < 0.	8); I ² = 09 11 6 4 8 7 10 5 42 10 103 1); I ² = 09 10 14 34 45 103	6 44 31 40 34 54 46 164 40 509 6 7 54 509 54 100 309	3.3% 2.0% 1.2% 2.9% 1.6% 11.7% 2.8% 29.1% 4.2% 0.3% 9.0% 15.7 %	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43]	
Total events Heterogeneity: $Chi^a = 6.6$ Test for overall effect: $Z =$ 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Wildén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: $Chi^a = 6.3$ Test for overall effect: $Z =$ 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1975 Stein 1980 Zwerling 1964 Subtotal (95% CI) Total events Heterogeneity: $Chi^a = 36$. Test for overall effect: $Z =$	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4 40 64 11, df = 3	P = 0.5 0.09) 42 31 42 70 58 46 167 41 556 P = 0.6 0.79) 92 60 64 100 316 (P < 0. 0.07)	8); I ² = 09 11 6 4 8 7 10 5 42 10 103 1); I ² = 09 10 14 34 45 103	6 44 31 40 34 56 46 164 40 509 6 7 54 58 100 309 *= 92%	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8% 29.1% 4.2% 0.3% 2.2% 9.0% 15.7 %	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.75 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43] 0.68 [0.44, 1.04]	
Total events Heterogeneity: $Chi^a = 6.6$ Test for overall effect: $Z =$ 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Wildén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: $Chi^a = 6.3$ Test for overall effect: $Z =$ 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1975 Stein 1980 Zwerling 1964 Subtotal (95% CI) Total events Heterogeneity: $Chi^a = 36$. Test for overall effect: $Z =$	i0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4 40 64 11, df = 3 1.80 (P =	P = 0.5 0.09) 42 31 42 70 59 58 46 167 556 P = 0.6 0.79) 92 60 64 100 316 (P < 0.	8); ² = 09 11 6 4 8 7 10 5 42 10 103 1); ² = 09 10 14 34 45 103 00001); ²	6 44 31 40 34 56 46 164 40 509 6 7 54 58 100 309 *= 92%	3.3% 2.0% 1.2% 2.9% 1.6% 11.7% 2.8% 29.1% 4.2% 0.3% 9.0% 15.7 %	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.76 [0.24, 2.42] 0.25 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43]	
Total events Heterogeneity: $Chi^2 = 6.6$ Test for overall effect: $Z =$ 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Widén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: $Chi^2 = 6.3$ Test for overall effect: $Z =$ 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1980 Zwerling 1964 Subtotal (95% CI) Total events Heterogeneity: $Chi^2 = 36$. Test for overall effect: $Z =$ Total (95% CI) Total events	0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4 40 64 11, df = 3 1.80 (P =	P = 0.5 0.09) 42 31 42 70 59 46 167 41 556 P = 0.6 0.79) 92 60 64 100 316 (P < 0. 0.07) 2381	8); ² = 09 11 6 4 8 7 10 5 42 10 103 10; ² = 09 10 14 34 45 103 00001); ² 432	44 31 40 34 54 56 164 40 509 6 509 6 509 5 58 100 309 *= 92% 2298	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8% 29.1% 4.2% 0.3% 2.2% 9.0% 15.7%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.75 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43] 0.68 [0.44, 1.04]	
Total events Heterogeneity: $Chi^2 = 6.6$ Test for overall effect: $Z =$ 1.1.3 Rehabilitation Anderson 2000 Askim 2004 Bautz-Holter 2002 Caplan 2006 Donnelly 2004 Mayo 2000 Rodgers 1997 Rudd 1997 Wildén Holmqvist 1998 Subtotal (95% CI) Total events Heterogeneity: $Chi^2 = 6.3$ Test for overall effect: $Z =$ 1.1.4 Psychiatric Muijen 1992 Stein 1975 Stein 1975 Stein 1980 Zwerling 1964 Subtotal (95% CI) Total events Heterogeneity: $Chi^2 = 36$. Test for overall effect: $Z =$	0, df = 8 (F 1.70 (P = 15 8 3 13 6 3 5 44 10 107 0, df = 8 (F 0.27 (P = 20 0 4 40 64 11, df = 3 1.80 (P = 406 94, df = 35	P = 0.5 0.09) 42 31 42 70 59 58 46 167 41 556 P = 0.6 0.79) 92 60 61 00 316 (P < 0. 0.07) 2381 5(P = 0)	8); ² = 09 11 6 4 8 7 10 5 42 10 103 10; ² = 09 10 14 34 45 103 00001); ² 432	44 31 40 34 54 56 164 40 509 6 509 6 509 5 58 100 309 *= 92% 2298	3.3% 2.0% 1.2% 2.9% 2.1% 1.6% 1.6% 11.7% 2.8% 29.1% 4.2% 0.3% 2.2% 9.0% 15.7%	1.67 [0.66, 4.22] 1.45 [0.44, 4.81] 0.69 [0.14, 3.31] 0.74 [0.27, 2.01] 0.75 [0.07, 0.97] 1.00 [0.27, 3.72] 1.04 [0.64, 1.70] 0.97 [0.35, 2.66] 0.96 [0.70, 1.31] 2.42 [1.06, 5.49] 0.02 [0.00, 0.40] 0.05 [0.02, 0.15] 0.81 [0.46, 1.43] 0.68 [0.44, 1.04]	

Readmission

- Odds ratio 0.80 (95% CI 0.68-0.95)
- Relative Risk Reduction 20%, p = 0.01
- Reduced from 18.80% to 17.05%
- Number needed to treat in HITH to prevent one re-admission is 58

Costing

- 36 RCTs
- In 31 studies HITH was cheaper
- On average, HITH cost 76.2% of inpatient care

Satisfaction

- Patient satisfaction
 - 25 RCTs
 - All in favour of HITH
- Carer Satisfaction
 - 9 RCTs
 - 7 in favour of HITH
 - 1 in favour of in-hospital
 - 1 neutral

Conclusion

- Meta-analysis demonstrates treatment in HITH leads to
- 20% \downarrow in deaths
- 21% \downarrow in patients readmitted
- 24% \downarrow in costs
- General \uparrow in patient satisfaction

HITH in New South Wales

- Variable models exist across the state
 - Department based
 - Hospital model
 - Area Health Service model
 - Inpatient versus outpatient
 - Different patient groups
- Urban + rural
- Good communication between services, eg referrals, State-wide steering committee
- Throwation and research

Hospital In The Home

HITH Society (Australasia)

- Society for clinicians (doctors, nurses and allied health) working in HITH
- Founded 2007
- Annual Conference
- www.hithsociety.org.au

4TH ANNUAL HITH SOCIETY AUSTRALASIA SCIENTIFIC CONFERENCE

Bringing it Home

Sydney, 17-18 Nov 2011

