

DELIRIUM PREVENTION.. A NON-PHARMACOLOGICAL APPROACH



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Acknowledgement

- Colleagues at University Hospitals Bristol
 - Dr Nicola Taylor Consultant Psychiatrist
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 - PSYCHIATRY LIAISON TEAM
 - Delirium project group
 - Patient experience group
 - CIS team

STEP 2

Confusion Assessment Method for the ICU (CAM-ICU)

DELIRIUM ASSESSMENT

1. Acute Change or Fluctuating Course of Mental Status:

- Is there an acute change from mental status baseline? OR
- Has the patient's mental status fluctuated during the past 24 hours?

NO

CAM-ICU negative
NO DELIRIUM

YES

2. Inattention:

- "Squeeze my hand when I say the letter 'A'."
Read the following sequence of letters: S A V E A H A A R T
ERRORS: No squeeze with 'A' & Squeeze on letter other than 'A'
- If unable to complete Letters → Pictures

0 - 2
Errors

CAM-ICU negative
NO DELIRIUM

> 2 Errors

3. Altered Level of Consciousness

Current RASS level (think back to sedation assessment in Step 1)

RASS other
than zero

CAM-ICU positive
DELIRIUM Present

RASS = zero

4. Disorganized Thinking:

1. Will a stone float on water?
2. Are there fish in the sea?
3. Does one pound weigh more than two?
4. Can you use a hammer to pound a nail?

Command: "Hold up this many fingers" (Hold up 2 fingers)
"Now do the same thing with the other hand" (Do not demonstrate)
OR "Add one more finger" (If patient unable to move both arms)

> 1 Error

0 - 1
Error

CAM-ICU negative
NO DELIRIUM

Aim for small change big
impact..since 2011



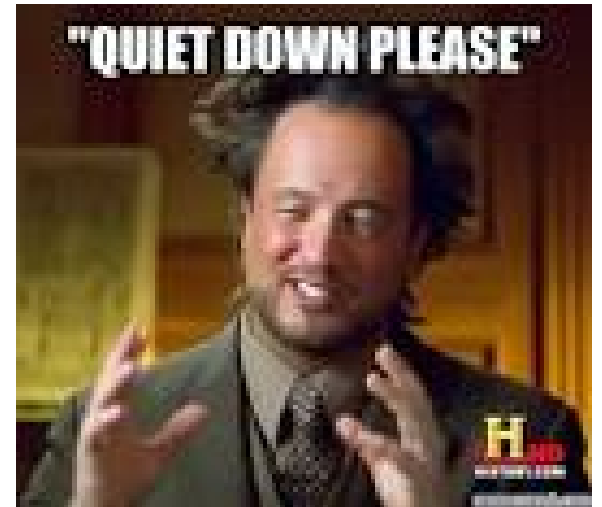
Multimodal & Multi-disciplinary...incremental gains.....



Do the basics very well (NURSING ART)

Noise reduction





THE NOCTURNAL NOISE POLICE

Day Night reorientation



Welcome to the

**Adult Critical
Care Unit**

Shhh!

Please remember
that our patients are
sleeping.



Many thanks

USE OF SAD LIGHTS 10,000 LUX- ONE
FOR EACH BED..ideally



Is your ICU dark/ no windows/ limited windows? (**from this**)



light intensity 3000-4000 lux



light intensity 1500-2000 lux

(To this)



Multi-modal approach



Non- pharmacologically

Environmental changes/ background work

“All About Me”- leaflets and boards

- Pre-op visitation
- LTCI screening on admission- national dementia CEQUIN
- Behavioural intervention (POPPI, CBT etc), psychiatric liaison interventional therapy in ICU
- Psych follow-up post ICU discharge on wards and invitation to attend outpatient’s.
- Visitation periods open 11am-8pm

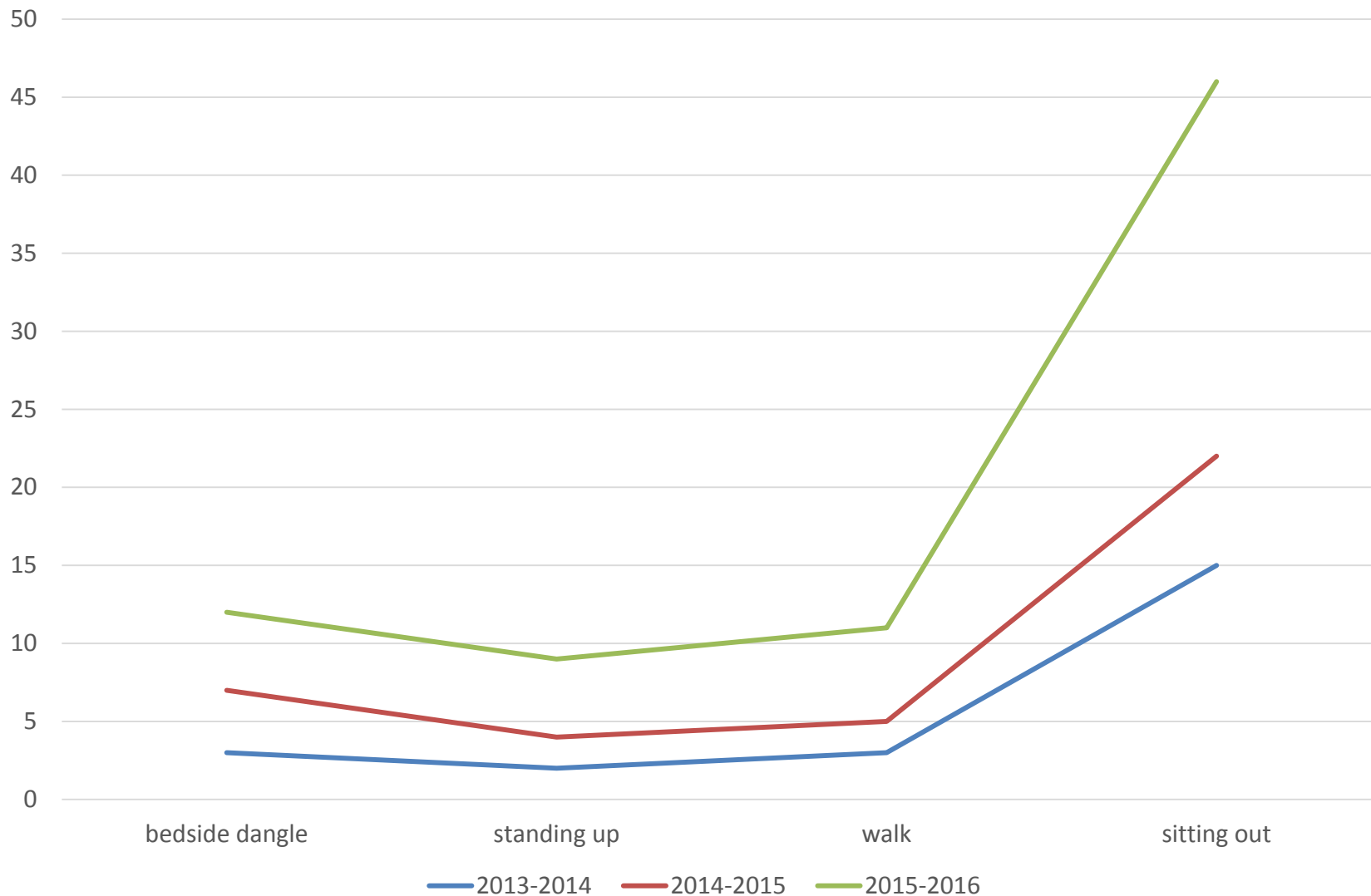
Delirium prevention care bundle:

- SLEEP HYGIENE/ DAY/NIGHT ORIENTATION/ sleep hygiene
- REORIENTATION THERAPY on interventions+ 2hrly+ glasses, dentures, hearing aids, +“this is me”
- MUSIC THERAPY- shield against environmental noise- available in every bed-space =Therapy in it’s own right?
- EARLY MOBILITY- rehab pathway (launched June 2016)
- CAMICU/ RASS/ ABBEY/VAS SCREENING REGULARLY- now protocolised and audited

Early mobilisation



Daytime mobilisation achieved (minutes per day) in our ICU 8am-10pm



Investment in chairs...helping to get the patient out of bed (comfortably)

- Beaver medical Tucson- x9 in use= £12k



- Careflex neuro rehab-
x5 now in use-= £20K

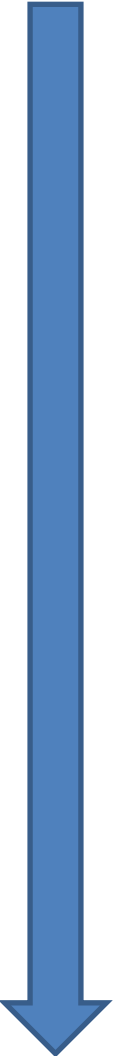


Removal of older “bedside chairs”



Timeline 2011-

- **2011**
 - start using CAMICU (reactive approach)
 - first large scale use of patient diaries- 200+/ year
- **2012**
 - delirium project group,
 - nursing scholarship- investigating MT,
 - CAMICU scoring goes live all patients BD and as indicated,
- **2013**
 - project work on hearing & visual aids, dentures
- **2014**
 - treatment algorithm adopted
 - CAMICU screening permanent addition to our departmental safety brief and ward round checklists
- **Feb 2015** (move to new unit)
 - Long-term cognitive and psychiatric follow-up being investigated for delirium survivors



TIMELINE..CONTINUED



June 2015

- SAD lights and protocol, VISITATION TIMES CHANGED TO 11:30-8PM (DISCRETIONARY OF NURSES/ MEDICAL STAFF)

JUNE 2016

- Psychiatry input onto the unit
- CBT on ICU and follow-up
- DELIRIUM REVIEW- monthly data from CIS
- ISSUE of the month – cyclic nature- 3 cycles per annum
- FOLLOW-UP- universal and all patients

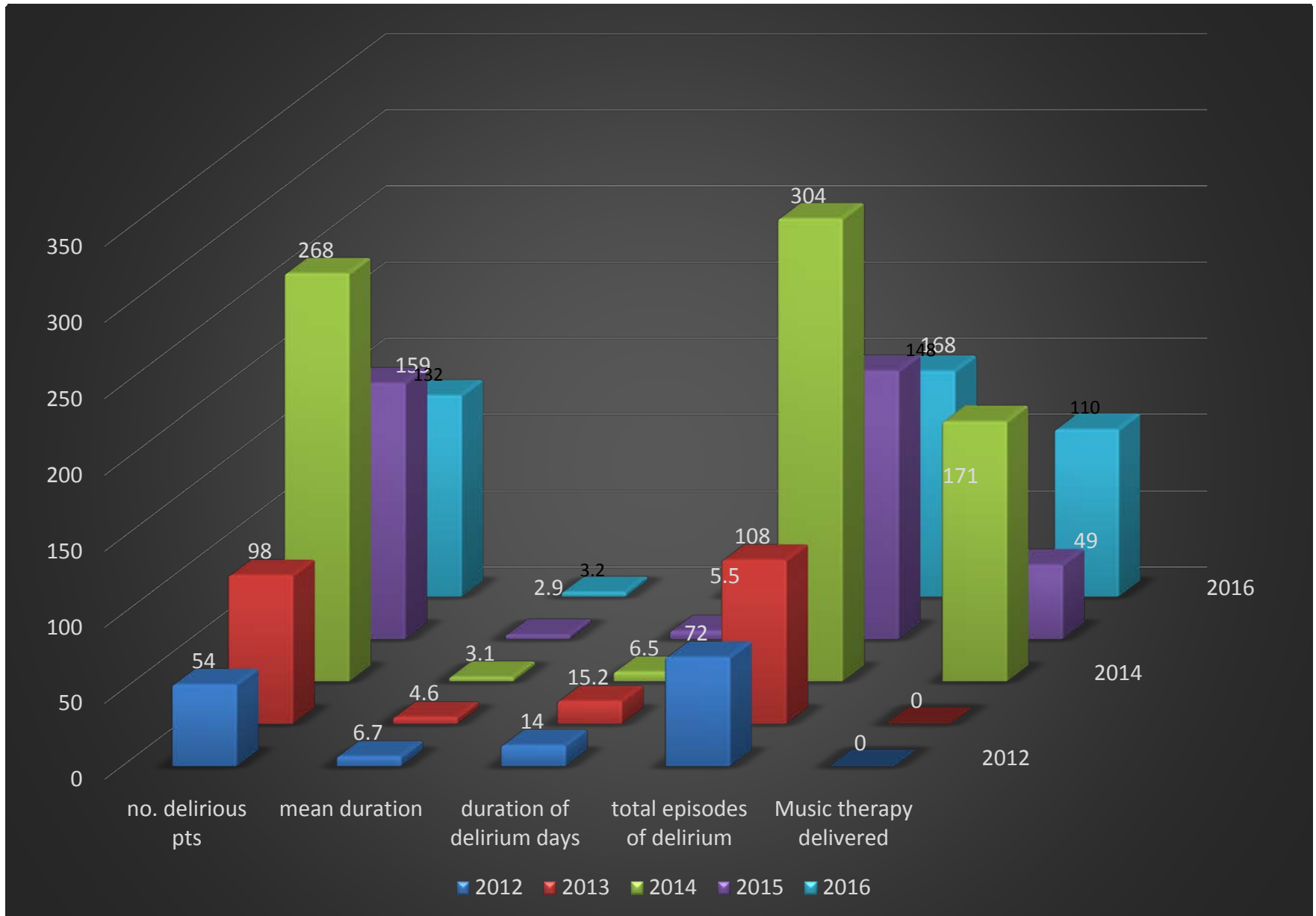
November 2016

CAMICU, RASS, Abbey protocol- “standards for documentation”

May 2017 ongoing...

- Bedside music therapy as a tab on PC's by each bed- pending
- SAD lights for each bed- charitable fund bid submitted
- Sound Ears for each bed- charitable fund bid submitted
- More chairs/ rehab kit/ Merger with CICU coming?
- Diary's for all patients vs just level 3?
- Sleep hygiene bundle, Sleep scoring/ melatonin

Impact of delirium bundle



Our results

- Pre-delirium care bundle <May 2013, CAMICU done infrequently and reactively
- Roll out of care bundle May 2013
- 2014- 268 patients CAMICU+ve
- 2015- 168
- 2016 dataset- 10.9% of all our admissions peak duration circa 4 days
- YTD 2017- much better audit and tracking- 14% peak duration 4.5 days

Highest incidence =Emergency admissions with alcohol dependency as a PMH

2015-2016 data indicates circa 2000 ICU bed days per annum saved through reduction in delirium on our unit alone- helping us to match increased demands on our service. Circa £3million efficiency saving in 2 years- (based on 1 bed day= £1500)



.. maybe we should
try to think
out of
the
box?

Innovation
Department

Pre-operative assessment of patients at risk of delirium

POAC clinic:

- Dementia screening
- Alcohol and smoking assessment
- Smoking cessation
- Pre-operative ICU visitation (Wd clerk, POAC, NIC/DNIC/ B7OTW)
- Alcohol and drug support service
 - Hospital based
 - Community support

At time of discharge do you do this?



Or do you offer this?

What is
the Value
of an
Extended
Warranty?



 HYUNDAI

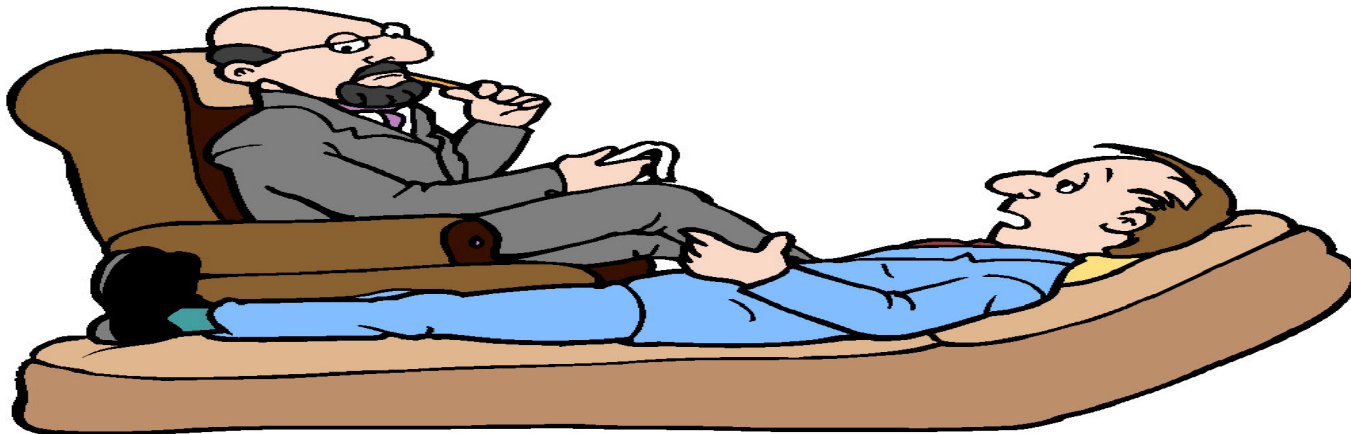


10 YEAR

100,000
MILE USED CAR
NATIONWIDE POWERTRAIN WARRANTY

Psychiatrist only follow-up- BRI experience

- Offered as part of huge follow-up package in Australia
- BRI experience- 48 patients delirium 2+days 2014- referred- 9 seen- all 9 PTSD/ Sleep/Anxiety disorders with elements of LTCI (100% clinical significance)
- 2015- cohort of 36 patients- unit survivors with any episode of delirium- awaiting results- 9 replied to invite- 2 attended- both with significant stress, anxiety, cognition (memory problems) and sexual dysfunction+ unable to return to work
- 2016 data set- universal follow-up for all patients June 2016 onwards- 9 patients PTSD, 3 other PICU syndrome +ve,



The future as we see it in Bristol

- Patient and relative related

- Long term outcomes
- More meaning for outcomes
- Improve healthcare provision for these patients

- Clinical

- Greater compliance with ventilator and sedation bundles
- Multi-disciplinary working
- Regional Delirium HUB” - SWCCN led project
- Follow up and psych interventional bid- BRISTOL-WIDE

- Research

- Pharmacological & non-pharmacological interventions
- Sleep studies research- melatonin levels
- RCA for music therapy selection
- Nursing education study into awake sedation- UK launches in September 2017- 26 ICU's- aim for 3500+ patients- advisory panel member



IMPACT OF EVENT SCALE

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1	Any reminder brought back feelings about it	0	1	2	3	4
2	I had trouble staying asleep	0	1	2	3	4
3	Other things kept making me think about it	0	1	2	3	4
4	I felt irritable and angry	0	1	2	3	4
5	I avoided letting myself get upset when I thought about it or was reminded of it	0	1	2	3	4
6	I thought about it when I didn't mean to	0	1	2	3	4
7	I felt as if it hadn't happened or wasn't real	0	1	2	3	4
8	I stayed away from reminders about it	0	1	2	3	4
9	Pictures about it popped into my mind	0	1	2	3	4
10	I was jumpy and easily startled	0	1	2	3	4
11	I tried not to think about it	0	1	2	3	4
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them	0	1	2	3	4
13	My feelings about it were kind of numb	0	1	2	3	4
14	I found myself acting or feeling as though I was back at that time	0	1	2	3	4
15	I had trouble falling asleep	0	1	2	3	4
16	I had waves of strong feelings about it	0	1	2	3	4
17	I tried to remove it from my memory	0	1	2	3	4
18	I had trouble concentrating	0	1	2	3	4
19	Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	0	1	2	3	4
20	I had dreams about it	0	1	2	3	4
21	I felt watchful or on-guard	0	1	2	3	4
22	I tried not to talk about it	0	1	2	3	4

Eye Movement Desensitisation & Reprocessing (EMDR).

- INVITE TO ATTEND SENT TO PATIENT AND GP
- ADVICE TO GP TO ENCOURAGE REFERRAL BACK INTO PSYCH LIAISON SERVICE IF ANY ISSUES IDENTIFIED OR PATIENT PRESENTS
- OPEN LETTER TO ATTEND

Multimodal & Multi-disciplinary...incremental gains.....



Conclusion

- Understanding risk factors
- Early identification
- Prevention
- Specific management
- The Bristol Royal Infirmary Pathway
- COMPREHENSIVE INTEGRATION WITH PSYCHIATRY TEAM SUPPORTING ICU, POST ICU AND POST HOSPITAL DISCHARGE

MANAGEMENT OF DELIRIOUS PATIENT ON INTENSIVE CARE

5
CAM-ICU positive (delirious)

Refer to
Psychiatry
Liaison
Team

1
REVERSIBLE FACTORS

Physiology: Hypoxia, hypotension, pyrexia, constipation
Pain: Assess pain & optimise analgesia
Pharmacology: Review drug chart- STOP/START CHART

2
MODIFIABLE FACTORS

Patient: BEDspace
1. **Belongings+ Care Bundle** (Hearing aids, glasses, dentures, own clothes)
2. **Environment** (Review surroundings, access to music, radio, TV, reading)
3. **Day routine** (Orientation, EM, white boards/Daily goals, "This is me")
Sleep bundle (BLT, care clusters, evening melatonin)

3
TREATMENT OPTIONS

NICOTINE → Nicotine patch
ALCOHOL → (i) Pabrinex I & II iv for 3/7.
(ii) Chlordiazepoxide 20mg qds po/ng + PRN
(iii) Clonidine infusion, DEXDOR
OPIATES → (i) Methadone po/ng
(ii) Alfentanil infusion
(iii) Clonidine / Dexmedetomidine infusion

4
Withdrawal (significant etoh, smoking or drug history)
Hyperactive delirium (RASS > 0)
Hypoactive delirium (RASS < 0)

1) QUETIAPINE 25mg bd po/ng (increase up to 200mg bd until symptoms controlled)
2) HALOPERIDOL 2-10mg iv over 30 mins to gain control, then give total dose regularly in 4 divided doses over 24 hours (max 18mg/24 hours)
3) Allpha 2 agonist- CLONIDINE or Dexmedetomidine infusion as per protocol

NO SPECIFIC TREATMENT Review reversible & modifiable factors
Consider Methylphenidate 5-10mg morning & midday

