Doug Smith, M.D., DFAPA
Medical Director/CCO,
Summit County ADM Board
Associate Professor and Director of Public and
Community Psychiatry, NEOMED

Change Direction:
The BODY
“If the human brain were so simple that we could understand it, we would be so simple that we couldn’t.”

Emerson Pugh
In the Beginning...

- First hospital in about 400 BC in Mihintale, Sri Lanka.
- First Psychiatric Hospital in Jerusalem in 490 AD.
- Bethlem Royal Hospital in England began to provide psychiatric care in 1357.
History of American MH

• 1840s - 1870s Dorothea Dix
  – championed the cause of humane treatment for the homeless and mentally ill in U.S.

• 1934 ABPN began certifying Psychiatrists
  – teaching moved from asylums to psychiatric hospitals associated with medical schools
What is mental illness?

DSM IV and 5 definition of mental disorder

...a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and is associated with present distress (i.e., a painful symptom) or disability (i.e., impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability or an important loss of freedom..."
What is Addiction?

• Behavioral pattern
  – Compulsive use of the drug
  – Overwhelming involvement with drug procurement and use
  – Behaviors continue despite physical, emotional or societal damage
Physical treatments in psychiatry

• Surgery: dental extraction, colectomy, hysterectomy
• Hydrotherapy
• Malarial treatment for syphilis
• Insulin coma therapy
• Chemical and electrical shock therapy
• Leucotomy
Mental Illness

• 1999- Surgeon General David Satcher released *Mental Health: A Report of the Surgeon General*
  – Mental Health is fundamental to health
  • Mind and body are inseparable
1st Ever Surgeon General’s Report on Addiction

• 11/16
• Facing Addiction in America
• Dr. Vivek Murthy
• http://addiction.surgeongeneral.gov/
What is SAMHSA?

- Substance Abuse and Mental Health Services Administration
- Part of Center for Medicaid and Medicare Services (CMS)
- Primarily tasked with “increasing the quality and availability of substance abuse prevention, alcohol and drug addiction treatment, and mental health services”
SAMI

• Substance Use co-occurring with Mental Illness
  – highly prevalent
    • up to 75% of all patients in state hospitals
  – highly prevalent in jails/prisons
    • about 60% of defendants used substances at offense
  – treated in parallel (wrong)
    • older model of treating one and then the other
  – Collaborative, in parallel (Right) involves cooperation from staff with varying viewpoints
    • medical and recovery models (biopsychosocial)
HOW THE BRAIN WORKS...

- A = presynaptic neuron
- B = synapse
- C = postsynaptic neuron

1. neurotransmitter (NT) in vesicle
2. NT being released/taken back up
3. receptor for NT = effects!!!
Brain Perceptual Systems

- 1. Vision
- 2. Hearing
- 3. Touch
- 4. Smell
- 5. Taste
- 6. Linear Acceleration
- 7. Angular Acceleration
- 8. Gravity (Proprioception) ← perceptual construct
- 10. Hormonal Feedback
- 11. Pleasure ← perceptual construct
**Integumentary System**
- Encloses internal body structures
- Site of many sensory receptors

**Skeletal System**
- Supports the body
- Enables movement (with muscular system)

**Muscular System**
- Enables movement (with skeletal system)
- Helps maintain body temperature

**Nervous System**
- Detects and processes sensory information
- Activates bodily responses

**Endocrine System**
- Secretes hormones
- Regulates bodily processes

**Cardiovascular System**
- Delivers oxygen and nutrients to tissues
- Equalizes temperature in the body

**Brain**

**Spinal cord**

**Peripheral nerves**

**Cartilage**

**Bones**

**Joints**

**Skeletal muscles**

**Tendons**

**Pituitary gland**

**Thyroid gland**

**Pancreas**

**Adrenal glands**

**Testes**

**Ovaries**

**Heart**

**Blood vessels**
Depression Changes Brain Metabolism and Blood Flow: Frontal Cortex

Healthy

Chronic Depression


This material provided by the Best Practices in Schizophrenia Treatment (BeST) Center, Department of Psychiatry, Northeast Ohio Medical University.

330.325.6695 • www.neomed.edu/bestcenter • bestcenter@neomed.edu
Opiate Receptors

http://thewellnessdirector.com/drinking-releases-brain-endorphins/
Activation of the reward pathway by addictive drugs

- Cocaine
- Heroin
- Nicotine
- Alcohol
- Heroin
The Midbrain (aka Limbic Brain) is the SURVIVAL brain. It handles:

- EAT!!
- KILL!!
- SEX!!!
in addiction, the drug hijacks the survival hierarchy and is so close to actual survival that it is indistinguishable from actual survival

- NEW!!! #1 drug!!!
- #2 Eat
- #3 Kill
- #4 Sex
Opiate Withdrawal

Abdominal pain cramps

Goosebumps (cutis anserina)

Muscle cramps

"Kicking the habit"

I'm quitting cold turkey!

Vomit

Urine

Diarrhea

Mydriasis

Sweating (diaphoresis)

Tachycardia

http://lifeinthefastlane.com/opiate-withdrawal/
**STRESS**: a major player in mental illness, addiction & relapse

CHRONIC, SEVERE STRESS = ↑ CRF

And ↑ CRF = ↓ DAD2 receptors

And ↓ DAD2 receptors = Anhedonia

**Anhedonia**: Pleasure “deafness”

(***the patient is no longer able to derive normal pleasure from those things that have been pleasurable in the past**)


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Stress Vulnerability
Mind-Body Care

• **Integration**: mental health care in a primary care setting

• **Reverse Integration**: primary care in a mental health setting
Three levels

1. **Coordination** – different sites with enhanced communication

2. **Co-location** – both services on site, but systems of care for each service are separated with varying degrees of engagement

3. **Full integration** – EMR, scheduling, treatment plans and staff are shared, team meetings formally include all providers
For more information, go to the Opiate Task Force Online at:

www.summitcountyaddictionhelp.org

or call the ADM Board at 330.762.3500