



Edwin Lee
Mayor

SAN FRANCISCO MENTAL HEALTH BOARD

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Adopted Minutes

Mental Health Board

Wednesday, November 14, 2012

Department of Public Health, 101 Grove Street, Room 300

San Francisco, CA

BOARD MEMBERS PRESENT: M. Lara Siazon Argüelles, Chair; Ellis Joseph, MBA, Vice Chair; David Elliott Lewis, Ph D, Secretary; Kara Chien, JD; Lynn Fuller, JD; Wendy James; Alyssa Landy, MA; Virginia S. Lewis, LCSW, MA; Lena Miller, MSW; Terence Patterson, EdD, ABPP; Alphonse Vinh, MS; Errol Wishom; and 76 members of the public.

BOARD MEMBERS ON LEAVE: Sgt. Kelly Dunn.

BOARD MEMBERS ABSENT: Noah King III.

OTHERS PRESENT: Helynna Brooke (MHB Executive Director); Loy M. Proffitt (Administrative Manager); Jo Robinson, Director of Community Behavioral Health Services (CBHS); George Bachy-Rita, M.D; Bruce Allison; Eduardo Vega, Mental Health Association (MHA-SF) Executive Director; Charles Pitts; Margot D, National Alliance on Mental Illness (NAMI) East Bay; LaVaughn King, Mental Health Services Act (MHSA); Carla Jacobs, board member of Treatment Advocacy Center; Terri Byrne, MHA-SF; Dale Milfay, Treatment Advocacy Center; Annis Pereyra, Advocate Contra Costa County; Karen Cohen, Advocate Contra Costa County; Sharon Madison, NAMI – Contra Costa; Teresa Pasquin, Mental Illness F.A.C.T.S. Advocacy; A.L. Dewitt; Mathew Steen, Conard House; Jim Stillwell, CBHS; Gifford Boyd-Smith, M.D., NAMI-SF; Carmen Simon; Deetje Boler, Grey Panthers; Carol Harvey, Media; Valerie Amber, UCSF; Delphine Brody, California Network of Mental Health Clients; Maylen Valois; Mesha Monge-Irizarry, Marijuana Offenses Oversight Committee (MOOC), Co-Chair; Joseph Robinson, CA Association of Social Rehabilitation Agencies; Arley Lindberg, Francine Larson SF MH Clients Rights; Rosario Cervantes, Excelsior District 11; Martin T. Fox, Attorney at Law; Hans DeWitt, Candy DeWitt; Patricia Fontana-Narell and members of the public.

CALL TO ORDER

Ms. Argüelles called the meeting of the Mental Health Board to order at 6:45 PM.

She congratulated board members Sgt. Kelly Dunn, and Lynn Fuller, and former board member LaVaughn King for being honored by the Board of Supervisors on October 30th, 2012 for their contributions to San Francisco with their work and advocacy in mental health.

ROLL CALL

Ms. Brooke called the roll.

AGENDA CHANGES

No changes on the agenda.

ITEM 1.0 DIRECTOR'S REPORT

Ms. Argüelles stated that Jo Robinson, Director of CBHS, will give the report.

1.1 Discussion regarding Community Behavioral Health Services Department Report, a report on the activities and operations of Community Behavioral Health Services, including budget, planning, policy, and programs and services.

Ms. Robinson briefly highlighted the Educationally Related Mental Health Services (ERMHS) that are provided by CBHS to the San Francisco Unified School District and the Medi-Cal Mental Health Plan.

She pointed out that the Client Satisfaction survey showed an overall high score for CBHS's mental health and substance abuse programs and services.

Please see the attached November 2012 Director's report.

Monthly Director's Report

1. National Institute of Drug Abuse (NIDA)

NIDA has released a new publication explaining what scientists know about addiction. The document is one that is easy to understand and well worth reading. Here is a link to the publication: <http://www.drugabuse.gov/publications/science-addiction>

2. Child Abuse Intervention Program

The California Penal Code specifies that terms of probation for individuals who have inflicted bodily harm or perpetrated cruel or inhuman corporal punishment on a child must include successful completion of no less than 52 weeks of a child abuse treatment counseling program. The Department of Public Health has been recently certified by the San Francisco Adult Probation Department to provide a comprehensive year-long treatment program for eligible and suitable offenders convicted of Section 273(a) of the California Penal Code (Child Abuse/Endangerment) and/or Section 273(d) Penal Code (Child Abuse via Trauma Inducing Cruel Corporal Punishment)

and placed on probation. Beginning in September, the Adult Probation Department began referring probationers to the program.

The Child Abuse Intervention Program (CAIP) is a collaborative effort involving various community stakeholders and City Departments, including the District Attorney, the Mayor's Office, the San Francisco Domestic Violence Consortium, the San Francisco Child Abuse Prevention Center, Police Department, the Department of Public Health, and the San Francisco Adult Probation Department. It will provide a range of interventions through treatment and evidence-based practices and proven mechanisms to address the causes of child abuse and to prevent relapse. These interventions include Cognitive Behavior Therapy, Triple P Parenting Practices, and Thinking for a Change. The goal of treatment is to change attitudes and behaviors that lead to the maltreatment of children.

The program will consolidate services and offer a comprehensive curriculum that conforms to the California Penal Code. San Francisco will be just the third of fifty eight counties in California to implement such an extensive program.

Special thanks to Janice Avery of CBHS for all of her important work in establishing and implementing this important intervention, which will promote wellness and recovery to individuals and families affected by child abuse in San Francisco. For further information please contact Janice at (415) 292-2562 or Craig Murdock at (415) 503-4732.

3. State Bill Tracking, 2012 Final

Jim Soos, Assistant Director of Policy and Planning for DPH, has provided us with the attached summary of 2012's California Bill Summary for any State legislation regarding health care. This is the final outcome for all of the 2012 State legislation. Only bills with a chapter number in the status column were signed into law. These will go into effect on January 1, 2013. (See attachment 1).

4. First Annual Appreciation Luncheon hosted by City College of San Francisco's Drug and Alcohol Studies Community Advisory Board

On September 12, 2012, City College of San Francisco's Drug and Alcohol Studies Community Advisory Board hosted the first annual Appreciation Luncheon for community partners, students, and alumni. The program, which trains CBHS program staff in preparation for state certification through the California Association of Drug & Alcohol Educators (CAADE), honored Jo Robinson, Director of CBHS, for her many years of service on the board until her appointment as Director of CBHS. Also honored were Drug & Alcohol Studies graduate Walter Rich, and board member Lucy Arellano. More than 165 people attended the event, which was emceed by Dr. Sal Núñez, Director of the Community Mental Health Program at City College. Brand new scholarship awards for the spring semester were announced in honor of beloved community caregivers Susan Poff and Robert Kamin. These awards will help deserving students reach their educational goals. A wonderful time was enjoyed by all, with a delicious Mexican buffet, live music, and ample social time. See you again next year!

5. My Avatar Implementation

The Information Technology (IT) Department performed a significant upgrade to the Avatar Electronic Health Record (EHR) used by all Community Behavioral Health Service providers over the first weekend in October. To prepare for the upgrade, in the preceding month over 2,700 active end-users received training in our classroom at 1380 Howard Street or used the “My Avatar Self-Training Guide” created to supplement our training efforts. On October 8, the improved EHR was released to end-users. Initially, we experienced intermittent down time as a few system issues were discovered. Those issues have been resolved.

Key features of the upgrade include a more convenient and user-friendly interface as well as improved system performance when running reports. Critical caseload and client specific information such as diagnosis, medication use, and concurrent treatment at other programs is immediately available at login using sophisticated Home and Chart Views. To date, feedback from program staff has been universally positive. The IT Department is grateful to program-based certified trainers and advanced users, in addition to all program staff who use the Avatar system for your participation and patience in helping us make this implementation a success.

6. RAMS Hire-Ability Graduation

On October 26, 2012, the IT Department, in conjunction with RAMS Hire-Ability Vocational Training program, celebrated the graduation of eight customer service technicians. Marcellina Ogbu provided opening remarks expressing CBHS support for vocational services in general, and the RAMS Hire-Ability program and its graduates in particular. This is the second graduating class, with 17 total graduates. At least 50% of the graduates are either employed or in a continuation training/placement program, demonstrating an impressive success ratio.

The RAMS Hire-Ability project with CBHS began in Spring 2011 to provide customer service skills and real world work experience to consumers. The nine month program begins with intensive off-site training on customer service skills, Avatar EHR functions, and workplace guidelines and expectations. Then, the technicians relocate to Avatar HelpDesk Central at 1380 Howard Street to commence real world customer support. The technicians are the first voice you hear when you call the Avatar HelpDesk. They also respond to voicemail and e-mail messages. RAMS technicians are able to resolve many issues themselves, or with the aid of their on-site RAMS Coordinator. More complicated Avatar issues are referred to IS Business Analysts for resolution. Throughout the program, participants are offered vocational services to assist with resumes, applications, and interviewing techniques in preparation for applying the newly acquired job skills to another customer service or IT-related position.

This partnership has proved to be a win-win situation for CBHS, RAMS Hire-Ability, and most of all for the newly graduated customer service technicians. Congratulations graduates!

7. 2nd Annual MHSa Awards Ceremony

The 2nd Annual MHSa Awards Ceremony took place on Friday, October, 19, 2012. The event was a great success. This special event is diligently planned months ahead of time by a committee primarily made up of consumers. Additionally, the entertainment provided during the event is also by consumers.

In total, 119 individuals were acknowledged for their achievements in recovery and wellness. The following awards and medals were given to consumers:

51 Bronze medals

40 Silver medals

26 Gold medals

2 Outstanding Consumers of the Year

Additionally, 2 teams of the year were acknowledged for their services and commitment to recovery.

Thank you for your support and we hope to you can help us for next year's MHSA Awards Ceremony by either: asking staff/peer staff/clients to participate in the planning committee for this event, or by nominating clients.

8. Ensuring Access and Effectiveness: Rates of Client Improvement

In the last two Director's Reports we have discussed the findings from our use of the Child and Adolescent Needs and Strengths (CANS) tool in the Child, Youth and Family (CYF) System of Care. We first presented information on the rates at which we address Behavioral Health Needs, Risk Behaviors, and Functioning Needs. We found that, as a system, we are most effective at addressing externalizing problems, such as Anger Control, and most likely to have an impact on children's functioning at home. We are less likely to effectively address internalizing problems, such as Depression, and less likely to have an impact on behavior in out-of-home environments, such as school. In the second piece we presented information on children and youth's Strengths. We found that, of the Strengths most likely to need developing, we were most effective at increasing a child's relationship permanence. We were least effective at developing Talents / Interests and improving School Supports.

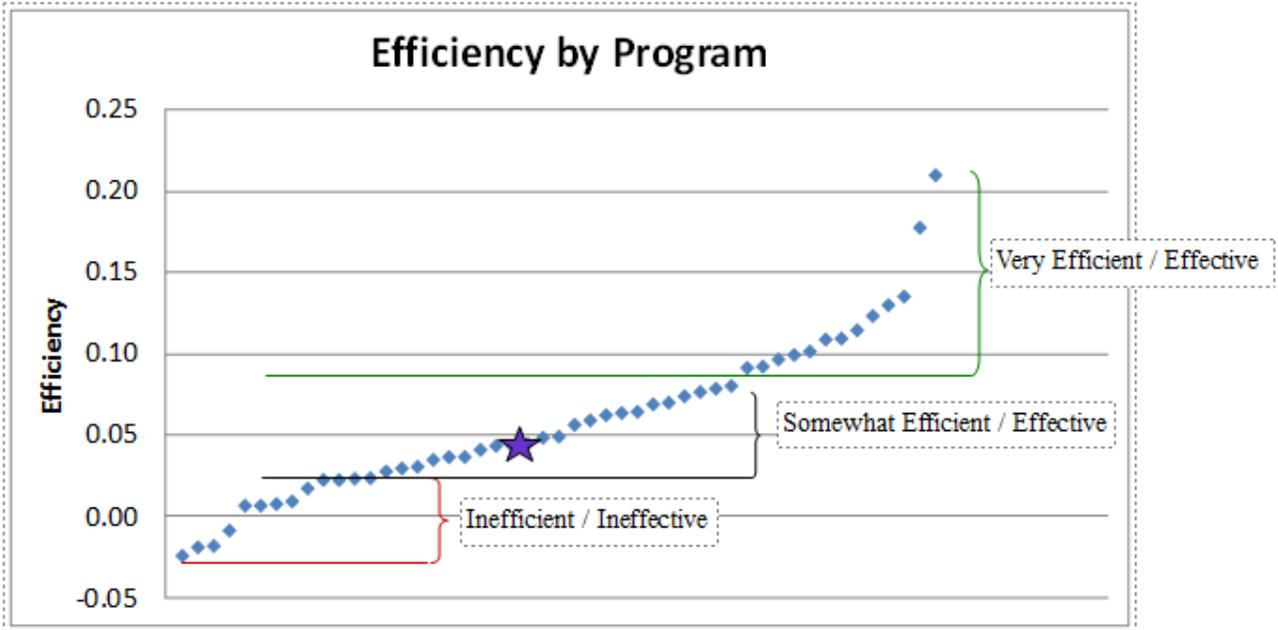
This month, we step back and look at how we're doing overall. Specifically, we look at how quickly we are able to reduce children and youths' Behavioral health Needs and Risk Behaviors, and improve their functioning. This is important for at least two reasons. The first is an ethical imperative: we need to minimize the suffering experienced by our children and youth. The second is a resource imperative: we need to make sure that all people have timely access to treatment when they need it. Given that our system has limited resources, providing care which is both efficient and effective is one of our highest priorities.

Other systems have demonstrated that providing more effective treatments leads to more efficient care. People who experience effective treatment may both leave care more quickly and be less likely to re-enter care. However, if treatment is not working, people may either leave and re-enter care, or may stay in care for long periods of time hoping that treatment will eventually be effective.

What we present below is a graph showing how quickly people are getting better at CYF programs. The measure of 'getting better' is the CANS. We take the measure of how much people are getting better and then divide it by how many months they have been in treatment. This gives us the amount of change clients experience per month in care. Clients in programs in this analysis had an average of 10 months of treatment. Each diamond in the graph represents all of the clients in a program.

Higher rates of efficiency indicate that children and youth are getting better, faster. Lower rates of efficiency indicate that it is taking longer for children to experience improvement in their symptoms, behaviors, or functioning. Negative rates of efficiency indicate that children and youth in the program are, on average, getting worse over time, not better. The start represents the system average.

Figure 1. Rates of Client Improvement by Program



These results indicate that the largest group of our programs provides effective relief at a moderately efficient pace. About a quarter of programs provide very efficient and effective care. Another quarter of programs provide care which is inefficient or ineffective. These results demonstrate the importance of looking across programs to understand how to make our system more efficient and more effective.

9. Children, Youth and Families

CYF leadership continues to work on developing and reinforcing the infrastructure to meet the challenges and opportunities related to important changes in the way we do business. I will list some of the major initiatives below.

Katie A.: Katie A. is the lawsuit that was successfully litigated and has created an entitlement for mental health services for at risk or dependent foster care youth at risk of placement disruption, residential or admission to a psychiatric hospital. CYF has formed an internal workgroup to begin to sort through and assess our current system, and discuss our readiness to develop practices that are aligned with Katie A. Concurrently, CYF and HSA are working towards developing an interagency work group to align our vision, review our practices and develop recommendations for mental health service delivery. The state has issued the documentation manual, which will include two new services including in home behavioral services and intensive case management. We are still waiting for the practice manual and the final implementation instructions from the court.

ERMHS: Educationally Related Mental Health Services: CYF is in its second year in transitioning what were Community Behavioral Health driven school based services (3632) to ERMHS, which are school district driven. We have been meeting regularly with the school district to better understand their objectives for the mental health service and to renew our current MOU. This process has involved assessing our internal practices and realigning our resources to better align with the SFUSD's objectives of insuring that services are primarily delivered in the school setting and are focused on addressing needs stated in the Individual Educational Plan (IEP).

Training:

- The planning for the Trauma Training Initiative has continued this month. An outline of a proposal was submitted to leadership for review and we are beginning to look at funding for the initiative. In the next few weeks, two more meetings will occur with peers, family members and people with lived trauma experience to discuss the current plan and get feedback and ideas. The hope is to begin developing a training curriculum by January 2013.
- At the request of the Juvenile Court Judges, CBHS developed and delivered training on substance abuse in teens. Emily Gerber developed the training and the Judges were very pleased with the outcome.
- As part of the CYF initiative to align our practices with our partner agencies, leadership is being trained in key initiatives. In the next month we will be trained in HSA's safety practices and the SFUSD's Restorative Practice.

10. Medi-Cal Mental Health Plan Contract with DHCS in Final Draft Review

The Fiscal Year 2012/13 Medi-Cal Mental Health Plan (MHP) contract that has been negotiated between the state and counties is in final draft review at DHCS. California Mental Health Director's Association (CMHDA) anticipates release of the final contract to counties in early November, with a due date of January for counties to approve the contract to avoid interruptions in federal payments to counties. CMHDA is appreciative of the assistance provided by Jennifer Henning of the County Counsels Association, who convened a representative group of county counsels to work on issues related to the Health Insurance Portability and Accountability Act (HIPAA) in the contract. Additionally, a CMHDA MHP Contract Workgroup held its final call with DHCS to review the financial provisions of the contract, and amendments were proposed and submitted to DHCS for consideration as a result. The current contract draft, which will likely cover a three year timeframe, addresses a number of critical issues, but we anticipate that additional amendments will be necessary this fiscal year to address Katie A. implementation, the county "right of first refusal" issue (depending on the outcome of the election and Proposition 30), the Healthy Families Program transition, and timely federal payments to counties.

11. "Sequestration": What Does it Mean for Behavioral Health?

"Sequestration" is a term you may have heard during last month's Presidential debates. As it turns out, "sequestration" is a federal budget term that simply means automatic budget cuts. They are similar to the "trigger cuts" sometimes used to balance California's state budget. This week, the California Senate Office of Research issued a report entitled, "*Sequestration: What Is It? And How*

Could It Impact California?” The SOR reports that “In August 2011, Congress passed the Budget Control Act of 2011. Unless Congress elects to reverse the act, it will impose automatic spending cuts—known as sequestration—on many federal programs starting in January 2013. The automatic cuts are intended to ensure a \$1.2 trillion deficit reduction through 2021, and in general are divided equally between defense and non-defense spending.” Some programs are exempt from the automatic cuts, including Medicaid, Social Security, the Children’s Health Insurance Program (Healthy Families in California), TANF (CalWORKs), food stamps (CalFresh), and veterans’ benefits and health care. However, a number of federal programs of importance to persons with behavioral health needs are *not exempt* from the automatic cuts. A webinar held by the National Association of Counties (NACo) estimated some of the potential non-exempt sequestration cuts, including an \$11 billion reduction to Medicare (through Parts A and B provider payments). Additional cuts could include the Substance Abuse & Mental Health Services Administration (SAMHSA), Individuals with Disabilities Education Act (IDEA), Substance Abuse Prevention and Treatment (SAPT) Block Grant, and Section 8 housing vouchers. NACo also wrote a letter in early October to Congressional leadership, urging Congress and the Administration to work in a bipartisan fashion, consider a “balanced approach,” and noting concern that “implementing across the board sequestration reductions is an irresponsible way to reduce the nation’s deficit.”

So, will these federal budget cuts happen? The SOR report states that “President Barack Obama has stated his opposition to the automatic cuts and publicly asked Congress to suspend the cuts in favor of another deficit-cutting alternative, such as his proposed fiscal year 2013 budget. In addition, many Congressional members have expressed serious reservations about allowing sequestration to go forward. However, the only way to stop the automatic cuts is through legislative action, and Congress is in recess until after the November 6 election. In the meantime, the Office of Management and Budget has instructed federal agencies to continue normal spending and operations until further notice.” Want to learn a little more? Check out this easy-to-read SOR report. Want to learn a lot more? The 294-page federal Office of Management and Budget report is posted on this White House web page. (*CMHDA Contact: Kirsten Barlow*)

12. Client Satisfaction Survey - Overall Satisfaction Rates Were Very High

CBHS collected satisfaction surveys from clients during the period 5/14/2012 - 5/25/2012 for Mental Health programs and from 6/25/2012 to 6/30/2012 for Substance Abuse programs. Mental health clients were surveyed using the State-mandated measures, the MHSIP (Mental Health Statistics Improvement Program) for Adults and the YSS (Youth Services Survey) and YSS-F (Youth Services Survey-Family) for Child, Youth, and Family clients. Substance Abuse clients were surveyed using the much shorter (11-item) scale that CBHS QM staff developed and used during the previous fiscal year.

Overall satisfaction rates were very high.

Results from the Mental Health program clients indicated extremely high levels of satisfaction. We received 2,512 valid responses from clients of Adult/Older Adult programs, of which 2,291 had an average score that indicated they were satisfied with services (91.2% satisfaction rate). We received 1,225 valid responses from clients of Child, Youth, and Family programs, and 1,139 had a score that indicated satisfaction with services (92.9% satisfaction rate).

We received 1,934 surveys from clients of Substance Abuse programs. Of those, 1,661 had an average score that indicated satisfaction with services (85.9% satisfaction rate).

The item level responses are included in the attachments. Individual program level reports are being created, and we hope to disseminate those over the next month. (See Attachments 2, 3, 4).

13. Opportunity for Substance Abuse Treatment providers to pilot test the ASI-MV

The Addiction Severity Index (ASI) is the most frequently used assessment tool by Substance Abuse providers in San Francisco. The ASI was developed by Dr. Thomas McLellan who was more recently the Director of the White House Office of National Drug Control policy early in the Obama administration.

Different versions of the ASI have been developed and used by San Francisco providers. The Avatar system currently provides access to an electronic version of the ASI for substance abuse clients. The ASI-DENS and the ASI-MV (Multi-media version) were both pilot tested in San Francisco several years ago through a Practice Improvement Collaborative grant to the Health Department by SAMHSA.

Recently, Netsmart reached an agreement with the makers of the ASI-MV (Inflexxion) to have the ASI-MV version available through Avatar. To help decide if SFDPH should provide access to the ASI-MV through Avatar, CBHS will be conducting a pilot study with interested providers. The tool is available in English and Spanish, and can be self-administered by clients using a computer. The ASI-MV provides standardized data and narrative reports that can be customized for treatment planning, placement, referral and outcomes.

See the link for further information:
<http://www.inflexxion.com/ASI-MVConnect/>

An information session will be held in the CBHS IT training room on the first floor of 1380 Howard on Wednesday, November 14th from 3-5.

Program Directors and Admission supervisors are encouraged to attend.

Please RSVP to Kathleen Minioza 415-255-3556.

Inflexxion also offers a comprehensive standardized substance abuse assessment tool for teens ages 13-18 called the CHAT.

For any substance abuse treatment providers interested in learning about the CHAT, we will hold a general informational meeting on the CHAT Wednesday November 14th from 12-1:30 in the 1380 Howard 4th floor conference room. Some general information is available through the website link below:

<http://www.inflexxion.com/CHAT/>

14. Postponed Implementation of Engagement Specialist Team

The implementation of the Engagement Specialist Team is being postponed until further notice in order to get some components in place that have taken longer than anticipated. The MAP Van will continue to operate as always until we notify you of the new implementation date.

In the near future, members of the San Francisco Homeless Outreach Team (SFHOT) and Mobile Assistance Patrol (MAP) will merge to provide targeted street outreach with the goal of more effectively engaging and placing into care San Francisco's most vulnerable street population – the men and women who are high users of multiple systems (HUMS).

For questions, please contact Maria X Martinez at 415-554-2877 or at maria.x.martinez@sfdph.org

15. Meeting of CBHS MH Contractors to Prepare for Triennial State Audit of Charts

A joint meeting of CYF and Adult/Older Adult CBHS mental health contractor providers will be held on Wednesday, November 14, from 9AM to 11AM, at 101 Grove, Room 300, to discuss preparations for next year's State Medi-Cal Audit of FY 12-13 mental health billings and client charts. San Francisco CBHS is due in FY 13-14 for its triennial Medi-Cal Chart Compliance Audit, to be conducted by the CA Department of Health Care Services, covering a selected quarter of these current FY 12-13 billings. In the next few months, civil –service MH outpatient programs will be auditing their clinicians' charts, and based on the results of the audits, will give feedback to each clinician about the compliance of their documentation practices. Contractors are also being asked to do the same, and at the November 14 meeting, CBHS central administration will be sharing the tools for conducting chart audits for quality and compliance.

16. Danger for Some HIV Patients who Skip Medications When They Drink Alcohol

About half of HIV patients skip taking their medication while they are drinking alcohol, a new study finds. The researchers say not taking the medication could endanger patients' health. The study followed about 200 people with HIV who took antiretroviral medications and drank alcohol, Reuters reports. Patients may forget to take their medication while they are under the influence of alcohol, the researchers note. They add that there is a widespread, incorrect belief that mixing HIV drugs and alcohol can be toxic. "The harms caused by missing their medications far outweigh the harms caused by mixing the two, if the person doesn't have liver disease," said researcher Seth Kalichman of the University of Connecticut. "People living with HIV who deliberately stop their medications when they are drinking are at risk for treatment failure," the researchers wrote in the Journal of General Internal Medicine. Stopping HIV treatment may lead to a surge in the virus, as well as drug resistance, Kalichman said.

Past issues of the CBHS Monthly Director's Report are available at:

<http://www.sfdph.org/dph/comupg/oservices/mentalHlth/CBHS/CBHSdirRpts.asp>

To receive this Monthly Report via e-mail, please e-mail reanna.albert@sfdph.org

1.2 Public Comment

No public comment.

ITEM 2.0 MENTAL HEALTH SERVICE ACT UPDATES AND PUBLIC HEARINGS

The passage of Proposition 63 (now known as the Mental Health Services Act or MHSA) in November 2004, provides increased annual funding to support county mental health programs. The Act addresses a broad continuum of prevention, early intervention and service needs and the necessary infrastructure, technology and training elements that will effectively support this system. This Act imposes a 1% income tax on personal income in excess of \$1 million. One of the requirements of the Act is that the county must provide annual updates as well as hearings for changes in the way the county implements the funding.

2.1 Mental Health Services Act Updates

Ms. Robinson announced that the MHSA annual report is currently in the final stages of completion, and she expected the report to be ready by the end of December 2012.

2.2 Public comment

No public comment.

ITEM 3.0 PRESENTATION: ASSISTED OUTPATIENT TREATMENT (AOT), AKA LAURA'S LAW, AND A BRIEF INTRODUCTION TO THE LPS REFORM TASK FORCE II REPORT, CARLA JACOBS, TREATMENT ADVOCACY CENTER AND SALLY ZINMAN, EXECUTIVE DIRECTOR, CALIFORNIA ASSOCIATION OF MENTAL HEALTH PEER RUN ORGANIZATIONS.

3.1 Presentation: Assisted Outpatient Treatment (AOT), aka Laura's Law, and a brief introduction to the LPS Reform Task Force II Report, Carla Jacobs, Treatment Advocacy Center and Sally Zinman, Executive Director, California Association of Mental Health Peer Run Organizations.

The presenters highlighted their perspectives on Laura's Law. Please see their documents and links at the end of the minutes.

Ms. Carla Jacobs is a founding board member of the Treatment Advocacy Center (TAC) and has served two terms on the board of the National Alliance for the Mentally Ill (NAMI). As coordinator of the California Treatment Advocacy Coalition, she guided the successful grassroots campaign for passage of Assembly Bill 1421, known as "Laura's Law." She is currently the executive director of Plan of California, an organization that provides treatment planning and services for individuals with severe mental illnesses.

Ms. Jacobs said that most people recognize mental illness, but that some people have anosognosia, a biological predisposed inability to recognize that they are mentally ill. She defined anosognosia as the inability of the brain to provide self-awareness or self-recognize feedback to a person who suffers a debilitating psychiatric disorder.

In general, people with anosognosia are prone to involuntary homelessness, to revolving hospitalizations, and to wandering aimlessly around the streets hungry and without hope. More often than not these people cycle through hospitals and are released without after-care assistance to meet their human needs. They, at best, wind up in jails and prisons not because they are criminals but because there is simply no place for them in our society, and, at worse, they get victimized.

People with anosognosia do not deserve to be de-humanized, stigmatized and discriminated against because of their condition. Supportive services need to change on sociological and institutional levels because people with anosognosia could be someone's grandparent, parent, sibling, child or a good friend.

She offered a brief history of Laura's Law or Assembly Bill 1421 (AB1421). In 2002, California implemented Laura's Law to provide Assisted Outpatient Treatment (AOT) when people decompensate gravely as a result of their mental illness. Laura's Law became effective on January 1, 2003 under Governor Gray Davis to ensure that everyone has the right to live in a world free of psychotic delusion. The law stipulated that each county had to approve implementation before it would be used in that county. In May 2008, Nevada County in California approved AOT.

She described how the process works in Nevada County. Initially, family members or psychologists request AOT. The case is then reviewed by the director of behavioral health for the county to investigate whether there is credence. If approved, the client is referred to a program for services. For example Turning Point provides mental health linkage services in Nevada County for people served by AOT.

Turning Point Community Programs provide psychiatric services, support and advocacy for people working to overcome the effects of mental illness in Sacramento, Stanislaus, Merced, Yolo, Placer and Nevada Counties. AB1421 is designed to help people with severe mental illnesses who are too sick to help themselves. The law permits court-ordered, intensive outpatient treatment for people with severe mental illnesses who refuse medication because of their anosognosia. Laura's Law is a safety net to catch decompensating people. Using involuntary medication intervention through procedural justice and court-ordered medication, Laura's Law provides these people with intensive and continual services so they can safely survive in communities and re-engage in voluntary services.

If a person is decompensating with severe mental illness, the behavioral health director can petition the court for a consideration. The court can assign a lawyer from the public defender's office to ascertain the severity of the mental illness. If there is a refusal of compliance, then the case can go before an administrative judge for therapeutic jurisprudence and re-negotiation for medication compliance and or re-engagement in services. A few people really benefit from Laura's Law pre-psychiatric hospitalization or before being 5150'd.

She emphasized that the main difference between a full-service partnership and an AOT are therapeutic jurisprudence, self-referral and a greater self-esteem. She believes that AOT clients/patients experience less stigma and coercion than non-AOT individuals.

Dr. David Lewis prefaced that during the 1980's history of psychiatry, psychiatric treatments were nothing more than abuse of an individual's liberty and coercion, and he wanted to know about safe guards to prevent abuse.

Ms. Jacobs stated that a safe guard should include an oversight of the treatment team, and the team's composition should include more people making judgments.

Dr. Patterson inquired about the cost of implementation of Laura' Law.

Ms. Jacobs explained that an average cost is a range of \$20,000 -- \$22,000 per year. This is cost-effective because clients/patients receive out-patient care in the community rather than in hospitals or jails at a much higher cost. In conclusion, she clarified that Laura's Law is not a program per se, but a court order for existing services within the community.

Ms. Sally Zinman has been a pioneer in the mental health patient rights movement for almost thirty years. She was a founding member of the California Network of Mental Health Clients, a statewide patient's rights organization working to develop and expand self-help groups throughout the state, to confront stigmatizing attitudes about mental health clients, to provide a strong voice of, by, and for mental health clients, and to promote and instill the rights of clients. She is currently the Executive Director of the California Association of Mental Health Peer Run Organizations.

Ms. Zinman stated that she opposes Laura's Law. She does not believe that there is a biological pre-disposition that a person is unaware of his/her mental illness. The essence of her argument is that self recovery from mental illness is already happening effectively through voluntary treatment resources.

She argued that not having enough voluntary services is insufficient reasonable evidence to enforce involuntary treatment on a person with mental illness. Involuntary medication is not the solution. She offered the MHSA (Mental Health Services Act) full service partnerships which have shown great results. She believes in behavioral health educational programs and problem-solving skills that have been shown to increase self-control and diminish the severity of mental illness without court-ordered treatment. California's full service partnerships are becoming a model for the nation.

She further argued that AB1421 is really outpatient commitment and coercion, and the forced treatment can create non-compliance. Civil rights are essential to recovery. She believes that self-control and self-determination are indicators of wellness and recovery.

She highlighted the following myths. The first is the myth that mentally ill patients are violent when in fact they are no more likely to be violent than the general population. A second myth is that mentally ill people are less competent or capable than people without mental illness, but mentally ill persons have the same capabilities as other people. A third myth is that psychiatric medications always work and are safe all the time. Medications do not always work and they can cause uncomfortable to severe side effects such as loss of libido, tics, extreme and sudden weight gain and more. These myths just perpetuate and cause further stigmatization and discrimination of people with mental illness.

Ms. Zinman wondered rhetorically that if court-ordered medication is supposed to make people with mental illness feel good then why do many of these people feel so horrible from the side effects. Would not the side effects then constitute re-traumatizing or punishing people with mental illness for having the illness? Therefore, would not the pain and suffering from the horrible side effects be tantamount to cruel and unusual punishment to people with mental illness?

Ms. Virginia Lewis who is an LCSW mentioned that court ordered psychiatric treatment seems to be necessary and helpful to some of her patients.

Ms. Arguelles expressed that her own daughter has no cognizant of her psychosis and has refused to take medications. As a result, her daughter ended up in the criminal justice system.

Ms. Zinman clarified that the side effects of the medications affect how a person with psychosis feels, and that there may be ways to talk to her daughter.

Dr. Patterson mentioned that there are numerous reasons why some people do not take their medications. He said that for example, being unorganized can cause people to not know they need to take medication at the moment.

Ms. Fuller argued that incidents of violence in the population of mentally ill people are a valid concern that people have.

Ms. Zinman mentioned that New York inappropriately used the Kendra's law as a discharge tool, and she cautioned about creating laws for a very few cases.

3.2 Public comment

Eduardo Vega is the Executive Director of the Mental Health Association of San Francisco. He said that involuntary treatment is not what San Francisco wants, and San Francisco has already responded to treatment needs. He stated further that the MHSA is against abusive coercion.

Fancher Larson, San Francisco Client's Rights, said that SF needs consumers working with providers to develop good peer programs.

Jeremy Miller, Idriss Stelley Foundation, is a crisis counselor who spoke about his attempted suicide when he was compelled to court-ordered treatment.

Teresa Pasquin is a mental health commissioner for Contra Costa County. She spoke about her daughter who was arrested and incarcerated in a Napa facility with a civil commitment due to lack of insight into her illness. The Napa facility cost \$200,000 compared to \$25,000 for out-patient treatments.

Dauphine Brody, CA Network of Clients, is a mental health client of San Francisco. She said minorities are controlled and oppressed, and African Americans are subjected to forced medication treatment. The cost is unjustifiable and forced treatment perpetuates further distrust, divisiveness and trauma. The implementation of Laura's Law in San Francisco was defeated three times already.

Gifford Boyd Smith, MD, NAMI-SF said that there is a population who have fallen through the cracks. There is a need to be creative about figuring out how to support those people who are falling through the cracks, and Laura's Law provides a safety net.

Maylen VA Lois, Coalition for Advice and Accountability, pointed out that she came to the meeting as a family member. She expressed that involuntary commitment is not an appropriate response to people becoming homeless due to their mental illness. Homelessness is solved by providing homes.

Sharon Madison teaches Contra Costa NAMI's Family-To-Family program and expressed that she believes that there is a group of people with mental illness who need treatment that is not voluntary.

Martin Fox is an Attorney at Law and mentioned that there are already more than 7,000 suicides by military veterans, and he has never prosecuted one soldier with mental illness. He believed that the system has no alternative to forced treatments. Now, about 30,000 returning veterans have PTSD.

George Bach-y-Rita, M.D has been a psychiatrist for over 20 years and said that anosognosia is a neurological disease not a psychiatric one.

Dale Milfay Snarr, TAC, advocated for Laura's law. She committed her son 22 times for being violent. Her son has had 165 hospitalizations. Since 2010, her son had racked up 250 days costing \$1,000 per day. When her son attempted matricide, he ended up in jail. As a mother, she could not allow her son to be homeless and expressed much frustration because she believes that voluntary programs cherry-pick good clients to treat.

Mesha Irizarry, MOOC, stated that her son had four 5150's and feels threatened by Laura's Law.

Brain Aplard is a visitor to San Francisco and believes it is wrong to have forced treatment.

Harry Pariser believes there is insufficient evidence to conclude that Laura's Law would work, and wondered why people aren't looking at the issue of drugs in prison.

Candy Dewitt whose son was accused of murder and is now at Napa State Hospital, said she could not get help for him in the mental health system for his schizophrenia and extreme paranoia.

Khalera A. believes that care and compassion is the key to wellness and recovery and said that peer mentorship programs work. There is a 71% reduction of hospitalization with peer support.

Dilara Yarbrough, Coalition on Homelessness, has worked with homeless people with mental illness and believes voluntary services work.

Michael Gause, MHA-SF, said that his darkest moments with psychoses were alleviated by a peer support system and he is opposed to Laura's Law.

Colleen Rivecca said her fiancée committed suicide and she felt a lot of sympathy for people in the room. She asked people to stop the \$785 million reduction in the State of California and \$32 million cut in San Francisco for mental health programs and services. She felt people should be working together to restore cuts.

Richard Krzyzanowski, California Client Action Workgroup, said that a red flag should go up when someone wants them to do something for their own good. He said mental illness is the only disability that a person could lose his/her civil rights with.

Marc Kowalski said that for people with schizoaffective disorder, 5150's are used as punitive because when people go for help on their own to the hospital they are turned away.

Mickey Shipley is a consumer advocate and he thanked the board for holding the hearing and said that he manages very well without medications.

Charles Pitts believed that government should not have this kind of control over its citizens because drugs have too many side effects.

ITEM 4.0 ACTION ITEMS

For discussion and action

Ms. Argüelles said the items listed below will be voted on by the board so we request public comment prior to voting. The first item is approval of the minutes from the last board meeting and the second item is a resolution about the use of Tasers. Commander Ali, who oversees the Crisis Intervention Team for the SF Police Department is here to respond to questions the board or members of the public may have. She said she understands that people have strong feelings about this subject but requested that comments be kept to the subject of the resolution and not rude or inappropriate remarks about police officers.

4.1. Public comment

Joyce Umamoto urged the board to support the Taser resolution because she has fears and concerns about their safety on human beings.

Carmen Simmons, Idriss Stelley Foundation, mentioned that mental health workers have received de-escalation trainings, and the use of Tasers is nothing more than excessive use of force by law enforcement because several people have died from Tasers.

Public member testified that he was held and kned to the ground in an incident with police.

Misha Irizarry, Idriss Stelley Foundation, felt that some people with seizures would be electrocuted and zapped to death by Tasers.

Martin Fox added that in another case there was police brutality in the beating, but the public mental health advocates did not respond.

Deetje Bowler, Gray Panthers, read her prepared statement saying that she feels citizens deserve all the protection they need from being electrocuted by Tasers.

Colleen Rivecca, Homeless Youth Alliance, felt that allowing CIT trained officers, who are trained to de-escalate tense encounters, to carry Tasers is dangerous.

Delphine Brody, CA Network of Mental Health Clients, supported the resolution. She said it would be a cost saving to use the money to train more officers on CIT rather than spending about \$1,000 per Taser.

Harry Pariser urged the board to pass the resolution to oppose the use of Tasers in San Francisco.

Brian Upland has considered moving to SF and thought that police need less weapons.

Maylen Valois, Coalition for Justice and Accountability, is surprised by the amount of violence against people with mental illness. She believes the diffusions and de-escalation are best. She feels that it is the job of the mental health professionals, who often have de-escalation trainings, not the police to deal with people with mental illness.

Jeremy Miller, Idriss Stelley Foundation, extended his thanks to Dr. David E. Lewis, who authored the resolution, and the board for introducing the resolution to the public.

Chris thanked and appreciated the board for introducing the resolution. He felt the risk of death is too high a price to pay for Tasers.

Phil Mastrocola, No Taser Task Force, believed that it is important to reduce Taser fatalities.

Eduardo Vega applauded the board for the resolution. He said that NAMI and MHA-SF have actively worked with SFPD on the development of CIT to deter the use of Tasers. He proposed a mental-health-peer-specialist-ride-along-joint-response program to handle people with psychosis.

Carol Harvey agreed that SFPD should not be forced to provide social services because it is the job for mental health professionals who often are trained in psychological first aid. All people deserve to be treated with dignity and respect. The use of Tasers just dehumanizes people.

Public member cited that he witnessed a person who died from being electrocuted eight times with a Taser. He does not believe the SFPD need be armed with any more weapons.

Commander Mikhail Ali is from the SFPD with 20 years of experience in the police department and spoke on behalf of the SFPD about Police Crisis Intervention Training (PCIT), which he has been in charge of since September of 2011. SFPD now has a Crisis Intervention Team (CIT). These are officers who have been trained in crisis intervention who will be called in situations involving a person with mental illness, and it is only CIT officers for which the department is seeking approval for the use of Tasers.

He pointed out that PCIT began under San Francisco Police Chief Fred Lau. Police officers are trained to engage with people, and they follow do no-harm protocols that dictate the need to take whatever time is needed to de-escalate a tense situation. For example, last July police responded to a person in crisis, for whom they were given no history of mental illness, who sliced a co-worker's arm. Police responded and fatally shot the person when this individual charged the officers with a knife. If officers had used Tasers instead, he might have lived.

His department is actively recruiting military veterans into its department. So far there are 983 officers in the SFPD trained in PCIT from 2001 to the summer of 2010 by the Mental Health Board. The board also trained many San Francisco Sheriffs.

Budget cuts to the SFPD necessitated the need to bring the training in-house. Under the new CIT model, another 116 officers have been trained. Officers try to engage without using force, but every situation is not always controllable by talking. Assaults against mental health workers are almost as high as assaults against police officers. He believed that officers should be allowed to use any necessary tools to de-escalate situations.

Ms. Virginia Lewis asked if a Taser looked like a gun.

Commander Mikhail Ali said they tried to modify the shape of Tasers and are looking at one that is yellow. They will also require officers to carry a Taser on the opposite side of the officer's body from the side the gun is carried on.

Ms. Virginia Lewis asked if the modified shape of the Taser provides a non-threatening weapon.

Dr. Patterson asked what oversight would be in place if Tasers are used.

Commander Mikhail Ali said that SFPD has the Office of Citizen Complaints and the Police Commission that reviews any use of force situation, which would include Tasers, immediately.

Ms. James asked about the effects of 50,000 volts capacity on people.

Commander Mikhail Ali said that there are policies against the use of Tasers such as on a pregnant woman, an elderly person, and children. Furthermore he elaborated that officers are required to justify each cycle of usage.

Dr. David E. Lewis mentioned that Taser International has recording video and audio capabilities.

Commander Mikhail Ali said video recording devices are available on cars, and body cameras are available to field officers.

Dr. David E. Lewis expressed that body cameras would help against any misconduct complaints and officers would act better with body cameras, provided the equipment are correctly calibrated, turned on and functioning properly.

4.2. PROPOSED RESOLUTION: Be it resolved that the minutes for the Mental Health Board meeting of October 10, 2012 be approved as submitted.

Unanimously approved.

4.3 PROPOSED RESOLUTION: Be it resolved that the Mental Health Board urges the San Francisco Police Commission and San Francisco Police Department (SFPD) to oppose the adoption of electroshock weapons (Tasers) for their SFPD C.I.T. (Crisis Intervention Team) Officers.

WHEREAS, the proposed change in the SFPD's use of force governing policies to permit the issuance of Tasers to C.I.T. trained officers is contrary to the goals and directives governing C.I.T. in both form and substance; and,

WHEREAS, a California study showed the rate of sudden in-custody deaths increasing 6.4 times and the rate of firearm deaths increasing 2.3 times in the first full year of Taser deployment with no corresponding change in Officer injury or death. (Lee et al, 2009, American Journal of Cardiology); and,

WHEREAS, the risk of Taser injuries and/or death is heightened for the mentally and emotionally ill who, in a crisis may be potentially unable to connect actions to consequences and may resist police even in the face of stepped-up force; and,

WHEREAS, research has found patients taking prescribed antipsychotic medications are already at increased risk of sudden cardiac death if tasered (Straus et al, 2004); and,

WHEREAS, people in states of acute agitation resulting from mental illness have been associated with unexplained deaths in custody. (Robison & Hunt, 2005); and,

WHEREAS, the Memphis Tennessee Police Department C.I.T. curriculum has been used to inform and create the SFPD curriculum since May 2001, and in 2011, Memphis Tennessee PD consulted to SFPD and Memphis still refuses to use Tasers, as they have confidence in their C.I.T. Training for de-escalation without the use of Tasers; and,

WHEREAS, the American Civil Liberties Union has raised concerns about their use as has the British human rights organization Resist Cardiac Arrest; and,

WHEREAS, the disproportionate use of Tasers against minorities has been well documented by the ACLU and also in a performance audit of the city of Houston in 2008 resulting in a Department of Justice Civil Rights Division investigation which sustained the findings; and,

WHEREAS, the cost of Tasers is prohibitive – costing about \$1000 per unit including holster and cartridges plus the cost of equipping each squad car with the necessary defibrillators at triple the cost of a Taser, plus hospital visits for subsequent injuries, and possible litigation costs which have already saddled California tax payers with over \$10 million since 2009; and,

THEREFORE, BE IT RESOLVED that the Mental Health Board of San Francisco urges the San Francisco Police Commission and the SFPD to oppose the adoption of Tasers to SFPD C.I.T trained officers.

Roll Call for vote:

Ayes: Ms. Argüelles; Mr. Joseph; Dr. Lewis; Ms. Chien; Ms. James; Ms. Landy; Ms. Lewis; Ms. Miller; and Mr. Vinh.

Nays: Dr. Patterson; and Mr. Wishom.

Absent from vote: Ms. Fuller.

ITEM 5.0 REPORTS

5.1 Report from the Executive Director of the Mental Health Board.

Ms. Brooke announced that there were several flyers in the board member packets and available to the public about upcoming events of interest.

5.2 Report from the Chair of the Mental Health Board and the Executive Committee.

Ms. Argüelles said that the Executive Committee is preparing for the Retreat which will be on Saturday December 1st from 8:30 to 4:00 PM. There will be no regularly scheduled board meeting in December. It will be at the AgeSong facility on Laguna at Grove Street. Michelle Magee, Vice President of Harder and Company, a consulting firm that works with CBHS is donating her time to facilitate the retreat.

The Executive committee meets Thursday, November 15th at 6:30 at 1380 Howard Street in Room 515. All board members are welcome to attend the meeting as well as members of the public

5.3 Public Comment.

No public comment.

ITEM 6.0 PUBLIC COMMENT

Charles Pitts suggested a presentation on shelter monitoring services.

Martin Fox submitted the *Assisted Outpatient Treatment: Preventive, Recovery-Based Care for the Most Seriously Mentally Ill* article by Gary Tasai, MD to the board.

Eduardo Vega wanted to continue and to finish his earlier comments. He said that the police, sheriffs and the community need to get together to find solutions and to develop alternatives to both AOT and use of Tasers.

Public member suggested the board should look at the bedbug issue in single room occupancy hotels.

ADJOURNMENT

Meeting adjourned at 9:45 PM.

The presenters provided the following Internet links and documents.

Assisted Outpatient Treatment (W&I CODE 5345) (AB 1421) “Laura’s Law” January 6, 2012.

1. <http://www.mynevadacounty.com/nc/hhsa/bh/docs/Laura's%20Law/AOT%20The%20Nevada%20County%20Experience.pdf> (*this is 37 page report in pdf format*)

A 30 minute video explaining the story of implementation and program of Assisted Outpatient Treatment: The Nevada County Experience.

2. <http://www.mynevadacounty.com/nc/hhsa/bh/Pages/Video---Laura's-Law.aspx>



Treatment Advocacy Center Briefing Paper

Anosognosia: A cause of violent behavior in individuals with severe psychiatric disorders

SUMMARY: Anosognosia, unawareness of illness, is the most important reason individuals with severe psychiatric disorders do not take medication for their illness. Multiple studies have demonstrated that the presence of anosognosia increases the incidence of violent behavior, both because it is associated with medication nonadherence and because it appears to directly increase violent behavior.

Anosognosia is a major contributor to aggressive and violent behavior among individuals with severe psychiatric disorders. Because anosognosia is the major cause of medication nonadherence, the association can be assessed either by studying violent behavior and nonadherence or by studying violent behavior and measures of insight.

* * *

Violent behavior and nonadherence

Many studies have been published linking aggressive and violent behavior to medication nonadherence. Following are three examples.

- In the United States (Massachusetts), 133 outpatients with schizophrenia were assessed for violent behavior over six months. During that period, “13 percent of the study group were characteristically violent,” and this was associated with medication nonadherence. “Seventy-one percent of the violent patients had problems with medication compliance, compared with only 17 percent of those without hostile behaviors.”

Bartels SJ, Drake RE, Wallach MA et al. Characteristic hostility in schizophrenic patients. *Schizophrenia Bulletin* 1991;17:163–171.

- In the United States (multi-site study), 1,906 individuals with schizophrenia and related disorders were prospectively followed and assessed for three years. Medication nonadherence was significantly associated with being violent, arrested, and victimized (all significant at a level of $p < 0.001$).

Ascher-Svanum H, Faries DE, Zhu B et al. Medication adherence and long-term functional outcomes in the treatment of schizophrenia in usual care. *Journal of Clinical Psychiatry* 2006;67:453–460.

- In the United States (five sites), 1,011 outpatients with severe psychiatric disorders were assessed for medication adherence and physically assaultive behavior over six months. Those who became physically assaultive were significantly more likely to have treatment nonadherence ($p < 0.001$), to be sicker, to be a substance abuser, and to have a personality disorder.

Elbogen EB, Van Dorn RA, Swanson JW et al. Treatment engagement and violence risk in mental disorders. *British Journal of Psychiatry* 2006;189:354–360.

Violent behavior and poor insight

- In the United States (North Carolina), 331 “severely mentally ill” individuals who had been involuntarily admitted to a psychiatric disorder were assessed for their history of assaultive and violent behavior. The findings indicated “that substance abuse problems, medication noncompliance, and low insight into illness operate together to increase violence risk.”

Swartz MS, Swanson JW, Hiday VA et al. Violence and severe mental illness: the effects of substance abuse and nonadherence to medication. *American Journal of Psychiatry* 1998;155:226–231.

- In Spain, 63 individuals with a diagnosis of schizophrenia or schizoaffective disorder were assessed for violent behavior during their brief hospitalizations. The strongest predictors of violent behavior were insight into symptoms (especially delusions), being sicker, and past history of violence.

Arango C, Calcedo Barba A, González-Salvador T et al. Violence in inpatients with schizophrenia: a prospective study. *Schizophrenia Bulletin* 1999;25:493–503.

- In Sweden, 40 “mentally disordered” individuals with a history of “violent criminality” were discharged from two forensic hospitals and followed for between 3 and 12 years. Twenty-two of them committed additional violent crimes, and 18 did not. Among the strongest predictors of those who committed additional violent crimes were lack of insight and “noncompliance with remediation attempts.”

Strand S, Belfrage H, Fransson G et al. Clinical and risk management factors in risk prediction of mentally disordered offenders—more important than historical data? *Legal and Criminological Psychology* 1999;4:67–76.

- In England, 503 patients in two forensic psychiatric hospitals were assessed for aggressive and violent behavior. Lack of insight strongly correlated with higher levels of such behavior.

Woods P, Reed V, Collins M. The relationship between risk and insight in a high-security forensic setting. *Journal of Psychiatric and Mental Health Nursing* 2003;10:510–517.

- In the United States (Ohio), 115 individuals with schizophrenia who had committed violent acts for which legal charges were incurred were compared to 111 individuals with schizophrenia who had no history of violent acts. The violent individuals had “marked deficits in insight” and were much more symptomatic. Compared to the nonviolent individuals, those who had been violent scored significantly lower ($p < 0.001$) on awareness of mental disorder, awareness of achieved effect of medications, and awareness of social consequences of mental disorders.

Buckley PF, Hrouda DR, Friedman L, et al. Insight and its relationship to violent behavior in patients with schizophrenia. *American Journal of Psychiatry* 2004;161:1712–1714.

- In England, 44 male inpatients in a forensic psychiatric hospital were assessed for violent behavior. It was found that “a previous diagnosis of mental illness, lack of insight, and active signs of mental illness were the most predictive of inpatient violence.”

Grevatt M, Thomas-Peter B, Hughes G. Violence, mental disorder and risk assessment: can structured clinical assessments predict the short-term risk of inpatient violence? *Journal of Forensic Psychiatry and Psychology* 2004;15:278–292.

- In Ireland, 157 individuals with first-episode psychosis were assessed for violent behavior. The strongest predictors of violent behavior in the week following admission was poor insight (odds ratio 2.97) and a past history of violence (odds ratio 3.82).

Foley SR, Kelly BD, Clarke M et al. Incidence and clinical correlates of aggression and violence at presentation in patients with first episode psychosis. *Schizophrenia Research* 2005;72:161–168.

- In the United States (New York), 60 male patients with psychosis who had been charged with a violent crime were assessed. Severity of community violence was strongly associated with poor insight, medication nonadherence, and substance abuse.

Alia-Klein N, O'Rourke TM, Goldstein RZ et al. Insight into illness and adherence to psychotropic medications are separately associated with violence severity in a forensic sample. *Aggressive Behavior* 2007;33:86–96.

- In Germany, the criminal records of 1,662 individuals with schizophrenia who had been discharged from psychiatric hospitals were assessed. According the authors: “Significantly higher rates of criminal conviction and recidivism were found for patients with lack of insight at discharge.”

Soyka M, Graz C, Bottlender R et al. Clinical correlates of later violence and criminal offences in schizophrenia. *Schizophrenia Research* 2007;94:89–98.

- In a four-country study in Canada, Germany, Finland, and Sweden, 216 patients with schizophrenia in forensic hospitals were followed for two years after discharge. Those patients with little or no insight had significantly more aggressive behavior compared to those with good insight. However, as predictors of aggressive behavior, the patients' positive symptom score (e.g., delusions and hallucinations) and their level of psychopathy (sociopathy) were better predictors than was their level of insight.

Lincoln TM, Hodgins S. Is lack of insight associated with physically aggressive behavior among people with schizophrenia living in the community? *Journal of Nervous and Mental Disease* 2008;196:62–66.



Treatment Advocacy Center Backgrounder

Schizophrenia as a brain disease: Studies of individuals who have never been treated (updated March 2011)

There is a lot of misinformation regarding what is wrong with the brain in schizophrenia. Dr. Thomas Szasz once claimed that nothing is wrong and that schizophrenia is merely a “myth.” Dr. Peter Breggin has argued that people with schizophrenia bring the symptoms on themselves because of “cowardice” or “failure of nerve.” Dr. Daniel Fisher said that schizophrenia is merely “severe emotional distress and loss of social role” brought on by “trauma.” Scientologists even claim that the symptoms of schizophrenia are caused by the drugs that are used to treat it.

Szasz TS. *Schizophrenia: The Sacred Symbol of Psychiatry* (Syracuse: Syracuse University Press, 1976).

Breggin PR, *The Psychology of Freedom* (Buffalo: Prometheus Books, 1980).

Condon G, quoting Daniel Fisher on WTIC-TV, Hartford, Connecticut, April 6, 2005.

Such statements indicate a profound ignorance about schizophrenia. Research has now clearly demonstrated that schizophrenia is caused by changes in the brain and that these can be measured by changes in both brain structure and brain function. Over 1,000 such research studies have been published. Schizophrenia is thus a disease of the brain in exactly the same sense that Parkinson’s disease, multiple sclerosis, epilepsy, and Alzheimer’s disease are diseases of the brain.

The same thing can be said about some other severe psychiatric disorders, specifically bipolar disorder (manic-depressive illness), schizoaffective disorder, severe depression, autism, and severe obsessive-compulsive disorder. Research studies indicate that all of these are also diseases of the brain, although far fewer such studies have been done on these disorders than on schizophrenia.

The following sections will briefly review the evidence for schizophrenia as a brain disease.

The only studies included will be studies carried out on individuals with schizophrenia who, at the time of the study, had never received any antipsychotic medication. Such individuals are often referred to by researchers as being neuroleptic-naïve. Thus, these studies prove that the changes in brain structure and function seen in schizophrenia are clearly caused by the disease process, not by the medications used to treat the disease.

Since 1975, there have been at least 120 such studies. They can be divided into research on structural abnormalities, neurological abnormalities, neuropsychological abnormalities, neurophysiological abnormalities, and cerebral metabolic abnormalities.

1. Structural Abnormalities

The modern era in schizophrenia research can be dated to 1976, with the publication of the first research using the newly developed computerized axial tomography (CT) brain scans, which showed that the brains of individuals with schizophrenia have significantly larger fluid-filled spaces (cerebral ventricles) compared to unaffected controls. The CT scan was the first technology allowing for visualization of brain structures in living patients that could be used to statistically distinguish those with schizophrenia from unaffected controls. Following the introduction of CT scans, magnetic resonance imaging (MRI) scans also became widely available for studying brain structures.

Since 1976, a total of 35 studies of brain structure have been done on individuals with schizophrenia who had never been medicated. All 6 studies that measured the size of the brain ventricles found them to be significantly enlarged. For example, Gur et al. reported a 16 percent increase in ventricular volume in 33 never-treated patients compared to 65 unaffected controls. Similarly, McCreadie et al. reported a 20 percent increase in ventricular volume in 42 patients compared to 31 unaffected controls. In addition to ventricular size, abnormalities in brain structure in never-treated individuals with schizophrenia have been reported for the frontal cortex, temporal cortex, hippocampus, amygdala, cingulate, thalamus, cerebellum, corpus callosum, and septum pellucidum. The only brain area that has been extensively studied and for which the results of different studies have been contradictory is the basal ganglia, especially its caudate subdivision.

Johnstone EC, Crow TJ, Frith CD et al., Cerebral ventricular size and cognitive impairment in chronic schizophrenia, *Lancet* 1976;2:924. This research was carried out at Northwick Park Clinical Research Center in London. Although group differences are statistically significant, there is some overlap in ventricular size between individual patients with schizophrenia and unaffected controls, and so ventricular size cannot be used as a diagnostic marker.

Schulz SC et al., Treatment response and ventricular brain enlargement in young schizophrenic patients, *Psychopharmacol Bull* 1983;19:510–512; Degreef G et al. Increased prevalence of the cavum septum pellucidum in magnetic resonance scans and post-mortem brains of schizophrenic patients, *Psychiatry Res: Neuroimaging* 1992;45:1–13; Lieberman J et al., Qualitative assessment of brain morphology in acute and chronic schizophrenia, *Am J Psychiatry* 1992;149:784–794; Chakos MH et al., Increase in caudate nuclei volumes of first-episode schizophrenic patients taking antipsychotic drugs, *Am J Psychiatry* 1994;151:1430–1436; Gur RE et al., Subcortical MRI volumes in neuroleptic-naïve and treated patients with schizophrenia, *Am J Psychiatry* 1998;155:1711–1717; Keshavan MS et al., Decreased caudate volume in neuroleptic-naïve psychotic patients, *Am J Psychiatry* 1998;155:774–778; Shihabuddin L et al., Dorsal striatal size, shape, and metabolic rate in never-medicated and previously medicated schizophrenics performing a verbal learning task, *Arch Gen Psychiatry* 1998;55:235–243; Corson PW et al., Caudate size in first-episode neuroleptic-naïve schizophrenic patients measured using an artificial neural network, *Biol Psychiatry* 1999;46:712–720; Gur RE et al., Reduced gray matter volume in schizophrenia, *Arch Gen Psychiatry* 1999;56:905–911; Gur RE et al., Reduced dorsal and orbital prefrontal gray matter volumes in schizophrenia, *Arch Gen Psychiatry* 2000;57:761–768; Gur RE et al., Temporolimbic volume reductions in schizophrenia, *Arch Gen Psychiatry* 2000;57:57769–57775; Ettinger U et al., Magnetic resonance imaging of the thalamus in first-episode psychosis, *Am J Psychiatry* 2001;158:116–118; Gilbert AR et al., Thalamic volumes in patients with first-episode schizophrenia, *Am J Psychiatry* 2001;158:618–624; Cahn W et al., Brain morphology in antipsychotic-naïve schizophrenia: a study of multiple brain structures, *Br J Psychiatry* 2002;181(suppl 43):S66–72; Cahn W et al., Brain volume changes in first-episode schizophrenia: a 1-Year follow-up study, *Arch Gen Psychiatry* 2002;59:1002–1010; Gunduz H

et al., Basal ganglia volumes in first-episode schizophrenia and healthy comparison subjects, *Biol Psychiatry* 2002;51:801–808; Joyal CC et al., A volumetric MRI study of the entorhinal cortex in first episode neuroleptic-naïve schizophrenia, *Biol Psychiatry* 2002;51:1005–1007; Karlsson P et al., PET study of D 1 dopamine receptor binding in neuroleptic-naïve patients with schizophrenia, *Am J Psychiatry* 2002;159:761–767; Keshavan MS et al., Abnormalities of the corpus Callosum in first episode, treatment naïve schizophrenia, *J Neurol Neurosurg Psychiatry* 2002;72:757–760; Keshavan MS et al., Cavum septi pellucidi in first-episode patients and young relatives at risk for schizophrenia, *CNS Spectrums* 2002;7:155–158; McCreadie RG et al., Structural brain differences between never-treated patients with schizophrenia, with and without dyskinesia, and normal control subjects: a magnetic imaging study, *Arch Gen Psychiatry* 2002;59:332–336; Tauscher-Wisniewski S et al., Caudate volume changes in first episode psychosis parallel the effects of normal aging: a 5-year follow-up study, *Schizophr Res* 2002;58:185–188; Cherascu G et al., Changes in morphology of the thalamus over time in subjects with neuroleptic naïve schizophrenia: effects of neuroleptic treatment (abstract), *Schizophr Res* 2003;60:191; Haznedar MM et al., Cingulate gyrus gray and white matter volumes in drug naïve schizophrenia patients (poster presentation), annual meeting of the American Psychiatric Association (May 2003); Haznedar MM et al., Hippocampus volume and 3-D metabolic mapping in drug-naïve Schizophrenia patients (poster presentation), annual meeting of the American Psychiatric Association (May 2003); Hietala J et al., Regional brain morphology and duration of illness in never-medicated first-episode patients with schizophrenia (letter), *Schizophr Res* 2003;64:79–81; Joyal CC et al., The amygdala and schizophrenia: a volumetric magnetic resonance imaging study in first-episode neuroleptic-naïve patients, *Biol Psychiatry* 2003;54:1302–1304; Kim JJ et al., Morphology of the lateral superior temporal gyrus in neuroleptic naïve patients with schizophrenia: relationship to symptoms, *Schizophr Res* 2003;60:173–181; Lacerda ALT et al., Orbitofrontal cortex in first-episode schizophrenia: an MRI study (abstract), *Biol Psychiatry* 2003;53:116S; Szeszko PR et al., Smaller anterior hippocampal formation volume in antipsychotic-naïve patients with first-episode schizophrenia, *Am J Psychiatry* 2003;160:2190–2197; Venkatasubramanian G et al., Corticocerebellar alterations in never-treated young age at onset schizophrenia (abstract), *Schizophr Res* 2003;60:211; Konasale M et al., Cerebellum morphometry in first-episode psychotic disorders: regional specificity for psychotic symptoms and cognition (abstract), *Biol Psychiatry* 2004;55:169S; Venkatasubramanian G et al., Longitudinal study of MRI gray matter volume in treatment-naïve schizophrenia: evidence for Cognitive dysmetria (abstract), *Schizophr Res* 2004;67:25; Spinks R et al., Globus pallidus volume is related to symptom severity in neuroleptic naïve patients with schizophrenia, *Schizophr Res* 2005;2005:73 :229–233; Narr KL et al., Cortical thinning in cingulate and occipital cortices in first episode schizophrenia, *Biol Psychiatry* 2005;58:32–40.

2. Neurological Abnormalities

Since 1976, at least 33 studies have reported significantly more neurological abnormalities in individuals with schizophrenia who had never been treated with antipsychotic medications compared to unaffected controls. The neurological abnormalities include abnormal spontaneous movements called dyskinesias, parkinsonian signs, neurological soft signs, and cerebellar signs.

Dyskinesias are spontaneous movements, usually involving the tongue, facial muscles, or arms. Eleven studies have demonstrated that such movements occur more often among never-treated individuals with schizophrenia than among unaffected controls. For example, Fenton et al. found that 23 percent of never-treated patients exhibited some form of spontaneous dyskinesia. Eight recent studies have also reported that never-treated patients with schizophrenia have neurological abnormalities resembling those seen in Parkinson's disease, including rigidity, tremor, and slowing of movements. Combining the studies, 91 out of 394 (23 percent) never-treated patients showed parkinsonian signs.

Neurological abnormalities called soft signs have also been extensively investigated in individuals with schizophrenia. Soft signs include such things as being unable to identify the type of coin placed in the hand without looking at it. Since 1992, 14 research groups have assessed the presence of neurological soft signs in never-medicated patients with

schizophrenia. Finally, a recent study compared neurological signs of cerebellar dysfunction in 155 never-treated individuals with schizophrenia to 155 matched unaffected controls. Among the patients, 21 percent had signs of cerebellar dysfunction, such as having an abnormal gait, whereas only 5 percent of the unaffected controls had such abnormalities.

Owens DGC, Spontaneous involuntary disorders of movement, *Arch Gen Psychiatry* 1982;39:452–461; Rogers D, The motor disorders of severe psychiatric illness: a conflict of paradigms, *Br J Psychiatry* 1985;147:221–232; McCreddie RG et al., The Scottish First Episode Schizophrenia Study: I. Patient identification and categorisation, *Br J Psychiatry* 1987;150:331–333; Waddington JL, Youssef HA, The lifetime outcome and involuntary movements of schizophrenia never treated with neuroleptic drugs: four rare cases in Ireland, *Br J Psychiatry* 1990;156:106–108; Fenton W et al., Risk factors for spontaneous dyskinesia in schizophrenia, *Arch Gen Psychiatry* 1994;51:643–650; Chatterjee A et al., Prevalence and clinical correlates of extrapyramidal signs and spontaneous dyskinesia in never-medicated schizophrenic patients, *Am J Psychiatry* 1995;152:1724–1729; Fenn DS et al., Movements in never-medicated schizophrenics: a preliminary study, *Psychopharmacology* 1996;123:206–210; McCreddie RG et al., Abnormal movements in never-medicated Indian patients with schizophrenia, *Br J Psychiatry* 1996;168:221–226; Gervin M et al., Spontaneous abnormal involuntary movements in first-episode schizophrenia and schizophreniform disorder: baseline rate in a group of patients from an Irish catchment area, *Am J Psychiatry* 1998;155:1202–1206; Puri BK et al., Spontaneous dyskinesia in first episode schizophrenia, *J Neurol Neurosurg Psychiatry* 1999;66:76–78; Honer W et al., Are movement disorders a part of the syndrome or consequences of treatment? (abstract), *Schizophr Res* 2002;53:11; Cortese L et al., Relationship of neuromotor disturbances to psychosis symptoms in first-episode neuroleptic-naïve schizophrenia patients, *Schizophr Res* 2005;75:65–75.

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Schröder J et al., Neurological soft signs in schizophrenia, *Schizophr Res* 1992;6:25–30; Rubin P et al., Neurological abnormalities in patients with schizophrenia or schizophreniform disorder at first admission to hospital: correlations with computerized tomography and regional cerebral blood flow findings, *Acta Psychiatr Scand* 1994;90:385–390; Sanders RD et al., Neurological examination abnormalities in neuroleptic-naïve patients with first-break schizophrenia: preliminary results, *Am J Psychiatry* 1994;151:1231–1233; Gupta S et al., Neurological soft signs in neuroleptic-naïve and neuroleptic-treated schizophrenic patients and in normal comparison subjects, *Am J Psychiatry* 1995;152:191–196; Flyct L et al., Neurological signs and psychomotor performance in patients with schizophrenia, their relatives and healthy controls, *Psychiatry Res*. 1999;86:113–129; Browne S et al., Determinants of neurological dysfunction in first episode schizophrenia, *Psychol Med* 2000;30:1433–1441; Krebs M-O et al., Validation and factorial structure of a standardized neurological examination assessing neurological soft signs in schizophrenia, *Schizophr Res* 2000;45:245–260; Krebs M-O et al., Disorganisation syndrome is correlated to sensory neurological soft signs in medicated and neuroleptic naïve schizophrenic patients (abstract), *Schizophr Res* 2002;53:232; Shibre T et al., Neurological soft signs (NSS) in 200 treatment-naïve cases with schizophrenia: a community-based study in a rural setting, *Nord J Psychiatry* 2002;56:425–431; Venkatasubramanian G et al., Neurological soft signs in never-treated schizophrenia, *Acta Psychiatr Scand* 2003;108:144–146; Keshavan MS et al., Diagnostic specificity and neuroanatomical validity of neurological abnormalities in first-episode psychoses, *Am J Psychiatry* 2003;160:1298–1304; Chen EY et al., Motor soft neurological signs in first episode schizophrenia: a two-year longitudinal study (abstract), *Schizophr Res* 2003;60:129; Whitty P

et al., Prospective evaluation of neurological soft signs in first-episode schizophrenia in relation to psychopathology: state *versus* trait phenomena, *Psychol Med* 2003;33:1479–1484; Scheffer RE, Abnormal neurological signs at the onset of psychosis *Schizophr Res* 2004;70:19–26. Studies of neurological soft signs are especially useful in understanding the role of antipsychotic medications in schizophrenia. Studies done on patients with schizophrenia who were on and off medications at the time of testing suggest that the medications either have no effect on the presence of neurological soft signs or decrease such neurological findings. See Manschreck TC et al., Disturbed voluntary motor activity in schizophrenic disorder, *Psychol Med* 1982;12:73–84; Kolakowska T et al., Schizophrenia with good and poor outcome. III: Neurological 'soft' signs, cognitive impairment, and their clinical significance, *Br J Psychiatry* 1985;146:348–357; Goldstein G, Sanders RD, The effects of antipsychotic medication on neurological examination abnormalities in schizophrenia (abstract), *Schizophr Res* 2003;60:4.

Ho B-C, Cerebellar dysfunction in neuroleptic naïve schizophrenia patients: clinical, cognitive, and neuroanatomic correlates of cerebellar neurologic signs, *Biol Psychiatry* 2004;55:1146–1153.

3. Neuropsychological Abnormalities

For almost two centuries, it has been observed that individuals with schizophrenia have deficits in some neuropsychological functions, especially memory, attention, and planning (also called executive function). Since 1994, 10 studies have been carried out on patients who had never received antipsychotic medications, confirming these observations. For example, Brickman et al. compared 29 never-medicated adolescents with schizophrenia to 17 matched unaffected controls and reported that the patient group performed significantly worse than the unaffected controls, especially on memory, attention, and executive functioning. In addition to these 10 studies, 3 other research groups studied individuals with first-episode schizophrenia, some of whom had never been medicated and some of whom had been briefly medicated, and reported that the never-medicated patients had significant neuropsychological deficits.

See Brickman AM et al., Neuropsychological functioning in first-break, never-medicated adolescents with psychosis, *J Nerv Ment* 2004;192:615–622. See also Saykin AJ et al., Neuropsychological deficits in neuroleptic naïve patients with first-episode schizophrenia, *Arch Gen Psychiatry* 1994;51:124–131; McCreadie RG et al., Poor memory, negative symptoms and abnormal movements in never-treated Indian patients with schizophrenia, *Br J Psychiatry* 1997;171:360–363; Lussier I, Stip E, Memory and attention deficits in drug naïve patients with schizophrenia, 2001;48:45–55; Schuepbach D et al., Selective attention in neuroleptic-naïve first-episode schizophrenia: a two-year follow-up (abstract), *Biol Psychiatry* 2002;51:118S; Kerns JG et al., Context-processing deficits and decreased prefrontal cortex activity: specific associations with unmedicated, first-episode Schizophrenia and with disorganization symptoms (abstract), *Schizophr Res* 2003;60:225; Hill SK et al. Impairment of verbal memory and learning in antipsychotic-naïve patients with first-episode schizophrenia, *Schizophr Res* 2004;68:127–136; Good KP et al., The relationship of neuropsychological test performance with the PANSS in antipsychotic naïve, first-episode psychosis patients, *Schizophr Res* 2004;68:11–19; Krieger S, Executive function and cognitive subprocesses in first-episode, drug-naïve schizophrenia: an analysis of N-back performance, *Am J Psychiatry* 2005;162:1206–1208; Snitz BE et al., Lateral and medial hypofrontality in first-episode schizophrenia: functional activity in a medication-naïve state and effects of short-term atypical antipsychotic treatment, *Am J Psychiatry* 2005;162:2322–2329.

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function in schizophrenia, *Schizophr Bull* 1999;25:233–255; Merlo MCG et al., Improvement of cognitive functions in acute first-episode psychosis treated with risperidone (abstract), *Schizophr Res* 2002;53:27.

4. Neurophysiological Abnormalities

Electrical impulses are one method used to communicate between brain cells. As noted previously, electroencephalograms (EEGs) have been used for many years to assess brain function in schizophrenia. Consistent with past studies, two recent studies used EEGs to examine sleep patterns in never-medicated individuals with schizophrenia, and both reported more abnormalities in the patients compared to the unaffected controls.

Another technique commonly used in psychiatric research to measure neurophysiological function is a type of electrical impulse called an evoked potential, elicited by auditory, visual, or sensory input. For example, a startle reflex, measured electrically, may be evoked by a loud sound. Three recent studies of evoked potentials have been carried out on never-medicated individuals with schizophrenia; all three showed significantly more abnormalities in the patients than in unaffected controls. Another measure of neurophysiological brain function is the recently developed transcranial magnetic stimulation (TMS), in which the brain is stimulated using magnets. A study of 21 neuroleptic-naïve individuals with schizophrenia reported them to be significantly different from 21 unaffected controls on some TMS measures. These studies suggest abnormal electrical and magnetic circuits in the brains of individuals with schizophrenia, evidence of neurophysiological dysfunction.

Ganguli R et al., Electroencephalographic sleep in young, never-medicated schizophrenics, *Arch Gen Psychiatry* 1987;44:36–44; Poulin J et al., Sleep architecture and its clinical correlates in first episode and neuroleptic-naïve patients with schizophrenia, *Schizophr Res* 2003;62:147–153.

Mackeprang T et al., Effects of antipsychotics on prepulse inhibition of the startle response in drug-naïve schizophrenic patients, *Biol Psychiatry* 2002;52:863–873; Ludewig K et al., Deficits in prepulse inhibition and habituation in never-medicated, first-episode schizophrenia *Biol Psychiatry* 2003;54:121–128. Another recent study included five patients who had never been medicated and two others who had been off all medication for more than six months. It showed that antipsychotic medication improves neurophysiological function, as measured by the acoustic startle reflex; see Weike AI et al., Effective neuroleptic medication removes prepulse inhibition deficits in schizophrenia patients, *Biol Psychiatry* 2000;47:61–70; Valkonen-Korhonen M, Altered auditory processing in acutely psychotic never-medicated first-episode patients, *Brain Res Cogn Brain Res* 2003;17:747–758.

Eichhammer P et al., Cortical excitability in neuroleptic-naïve first-episode schizophrenic patients, *Schizophr Res* 2004;67:253–259.

5. Cerebral Metabolic Abnormalities

The measurement of cerebral metabolic activity is comparatively new and technically complex. Three ways of doing this are by positron emission tomography (PET), single photon emission computed tomography (SPECT), and functional magnetic resonance imaging (fMRI). Since it is known that antipsychotic medications can affect these tests, it is important to use individuals who have not been treated whenever possible.

Since 1991, 21 studies have examined cerebral metabolic abnormalities in individuals with schizophrenia never treated with antipsychotic medications. Representative of these studies is one by Braus et al., in which 12 never-medicated patients with schizophrenia were compared to 11 unaffected controls by functional MRI. According to the researchers: “In

comparison with control subjects, patients showed reduced activation in the right thalamus, the right prefrontal cortex, and the parietal lobe . . . bilaterally.” Of the 21 studies reported to date, all except one found more cerebral metabolic abnormalities in the individuals with schizophrenia compared to the controls.

Loeber RT et al., Cerebellar blood volume in bipolar patients correlates with medication, *Biol Psychiatry* 2002;51:370–376.

Braus DF et al., Sensory information processing in neuroleptic-naïve first-episode schizophrenic patients: a functional magnetic resonance imaging study, *Arch Gen Psychiatry* 2002;59:696–701. See also Cleghorn M et al., Apomorphine effects on brain metabolism in neuroleptic-naïve schizophrenic patients, *Psychiatry Res: Neuroimaging* 1991;40:135–153; Buchsbaum MS et al., Frontostriatal disorder of cerebral metabolism in never-medicated schizophrenics, *Arch Gen Psychiatry* 1992;49:935–942; Shihabuddin L et al., Dorsal striatal size, shape, and metabolic rate in never-medicated and previously medicated schizophrenics performing a verbal learning task, *Arch Gen Psychiatry* 1998;55:235–243; Laruelle M et al., Increased dopamine transmission in schizophrenia: relationship to illness phases, *Biol Psychiatry* 1999;46:56–72; Barch DM et al., Selective deficits in prefrontal cortex function in medication-naïve patients with schizophrenia, *Arch Gen Psychiatry* 2001;58:280–288; Clark C et al., Regional cerebral glucose metabolism in never-medicated patients with schizophrenia, *Can J Psychiatry* 2001;46:340–345; Brewer WJ et al., Functional neuroimaging follow-up of stroop performance in neuroleptic-naïve first-episode psychosis (abstract), *Schizophr Res* 2002;53(suppl):109; Karlsson P et al., PET study of d 1 dopamine receptor binding in neuroleptic-naïve patients with schizophrenia, *Am J Psychiatry* 2002;159:761–767; Tauscher J et al., Brain serotonin 5-HT 1A receptor binding in schizophrenia measured by positron emission tomography and (11C)WAY-100635, *Arch Gen Psychiatry* 2002;59:514–520; Carter CS et al., Prospective longitudinal fmri study of prefrontal cortex based context processing in never medicated first-episode schizophrenia (abstract), *Schizophr Res* 2003;60:214; Théberge Jean et al., Glutamate and glutamine measured with 4.0 T Proton MRS in never-treated patients with schizophrenia and healthy volunteers, *Am J Psychiatry* 2002;159:1944–1946; Tuppurainen H et al., Extrastriatal dopamine D 2/3 receptor density and distribution in drug-naïve schizophrenic patients, *Mol Psychiatry* 2003;8:453–455; Stanley JA et al., Age and comorbidity effects in first-episode never-medicated schizophrenia subjects: an in vivo 1H spectroscopy study (abstract), *Biol Psychiatry* 2003;53:178S; Jayakumar PN et al., Membrane phospholipid abnormalities of basal ganglia in never-treated schizophrenia: a 31P magnetic resonance spectroscopy study, *Biol Psychiatry* 2003;54:491–494; Fannon D et al., Selective deficit of hippocampal N-acetylaspartate in antipsychotic-naïve patients with schizophrenia, *Biol Psychiatry* 2003;54:587–598; Hsiao M-C et al., Dopamine transporter change in drug-naïve schizophrenia: an imaging study with 99mTc-TRODAT-1, *Schizophr Res* 2003;65:39–46; Gangadhar BN et al., Basal ganglia high-energy phosphate metabolism in neuroleptic-naïve patients with schizophrenia: a 31-phosphorus magnetic resonance spectroscopic study, *Am J Psychiatry* 2004;161:1304–1306; Lehrer DS et al., Thalamic and prefrontal fdg uptake in never medicated patients with schizophrenia *Am J Psychiatry* 2005;162:931–938; Talvik M et al., Decreased thalamic D 2/D 3 receptor binding in drug-naïve patients with schizophrenia: a PET study with [11C]FLB 457, *Int J Neuropsychopharmacol* 2003;6:361–370; Fagerlund B et al., global and stable deficits of verbal memory in drug-naïve, first-episode schizophrenia: lack of efficacy of antipsychotics (abstract), *Nord J Psychiatry* 2005;59:410.

It should also be emphasized that none of the cerebral abnormalities cited above are specific to schizophrenia. All of them can be found in some other brain diseases and occasionally in normal individuals, although they occur statistically more frequently in individuals with schizophrenia. Thus, the brain abnormalities found in schizophrenia are similar to the tremor seen in many patients with Parkinson’s disease. Tremor may also be found in other brain diseases; it occurs in some normal individuals [benign intention tremor], but it occurs statistically much more frequently in Parkinson’s disease.



Treatment Advocacy Center Backgrounder

The Anatomical Basis of Anosognosia (Lack of Awareness of Illness) (updated September 2012)

SUMMARY: Anosognosia, or lack of awareness of illness, is a common symptom of schizophrenia and bipolar disorder with psychotic features. It is one of the most common reasons why individuals with these disorders often refuse to take medication.

To date, 18 studies have been done looking at the relationship between anosognosia and the anatomical structure of the brain; 15 of the studies reported statistically significant correlations and three studies did not. The three negative studies focused on global brain measures, such as total brain or total ventricular volume. The 15 positive studies included many that focused on more specific brain structures. Two of the positive studies were of individuals with first-episode psychosis and included individuals who had never been treated with antipsychotic medications, thus ruling out medications as a cause of the observed brain changes.

Regarding localization, it is now clear that anosognosia is not caused by damage to one specific area. Rather a person's awareness of illness involves a brain network that includes the prefrontal cortex, cingulate, superior and inferior parietal areas, and temporal cortex and the connections between these areas. Damage to any combination of these areas can produce anosognosia, but damage to the prefrontal and parietal areas together make anosognosia especially likely.

Anosognosia, or lack of awareness of illness, thus has an anatomical basis and is caused by damage to the brain by the disease process. It thus should not be confused with denial, a psychological mechanism we all use.

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INTRODUCTION: Anosognosia has been described by neurologists for over a century. Classically, it occurs in a patient who has had a stroke in the right parietal lobe of the brain, producing left hemiplegia. *The individual so affected may deny that anything is wrong despite being paralyzed on the left side.* This is not simple denial, a subconscious psychological

mechanism we all use occasionally. This is anatomical damage to the part of the brain we use to think about ourselves. Thus denial is psychological, whereas anosognosia is anatomical.

Anosognosia is very difficult to imagine or understand. Oliver Sacks, in *The Man Who Mistook His Wife for a Hat* (p.5), explained anosognosia as follows:

It is not only difficult, it is impossible for patients with certain right-hemisphere syndromes to know their own problems – a peculiar and specific ‘anosognosia,’ as Babinski called it. And it is singularly difficult, for even the most sensitive observer, to picture the inner state, the ‘situation’ of such patients, for this is almost unimaginably remote from anything he himself has ever known.

The anatomical basis of anosognosia in stroke patients has been well described. According to a summary of the studies, anosognosia “seems to be equally frequent when the damage is continued to frontal, parietal or temporal cortical structures...[but] is highest when the lesions involve parietal *and* frontal structures in combination” (Pia L, et al. The anatomy of anosognosia for hemiplegia: A meta-analysis. *Cortex*. 2004;40:367-377).

ANOSOGNOSIA IN SCHIZOPHRENIA

Attention to the problem of anosognosia in schizophrenia is relatively new, dating to the work of Drs. Xavier Amador and Anthony David in the 1990s. Clinicians had long been aware that some patients were unaware of their symptoms and illness, but the similarity of this condition to the anosognosia seen in some stroke patients had not been widely noted. Indeed, being unaware of one’s illness has been known to be a cardinal symptom of psychosis. As early as 1604, playwright Thomas Dekker had a character in his play, “The Honest Whore,” proclaim: “That proves you mad because you know it not.”

In the last decade, there has been an outpouring of studies of anosognosia in individuals with psychosis in general and with schizophrenia in particular. Some studies have examined the relationship between anosognosia and various brain functions (for a review see Shad MU, et al. Insight and frontal cortical function in schizophrenia: A review. *Schizophrenia Research* 2006;86:54-70). Other studies have examined the relationship between anosognosia and brain anatomy in individuals with schizophrenia. This paper will summarize these studies.

There have been at least 18 such studies, beginning with the most recently published.

- **Awareness of illness is associated with the function of midline brain structures.**

In Finland, 21 patients with schizophrenia and 17 normal controls underwent both structural magnetic resonance imaging (MRI) and functional MRI, during which time they were asked to answer specific questions about insight, e.g., “If someone said I had a mental illness they would be right.” Insight was associated with activation of brain midline structure, specifically posterior cingulate, medial prefrontal cortex, and frontal pole, brain areas known to be associated with

self-awareness. The authors acknowledged that “the present findings...cover only a portion of the neuronal circuitries involved in the processing of insight.”

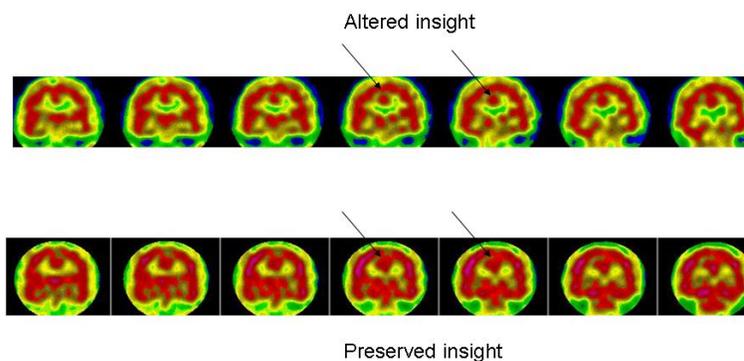
Raj TT, Riekkki TJ, Hari R. Association of poor insight in schizophrenia with structure and function of cortical midline structures and frontopolar cortex. *Schizophr Res.* 2012 Aug;139(1-3):27-32. Epub 2012 Jun 2.

- **Anosognosia is associated with impaired cerebral blood flow in the superior parietal area (precuneus).**

In France, 31 patients with paranoid schizophrenia and 18 normal controls were assessed for cerebral blood flow by single photon emission computed tomography. Twenty-one patients had good awareness of their illness; 10 did not. Those with poor awareness of their illness showed poor cerebral blood flow to their precuneus bilaterally ($p < 0.001$). There were no differences in the frontal lobes. The precuneus is part of the superior parietal lobe and known to be involved in self-consciousness, including awareness of one’s own emotional state.

Faget-Agius C, Boyer L, Padovani R, Richieri R, Mundler O, Lançon C, Guedj E. Schizophrenia with preserved insight is associated with increased perfusion of the precuneus. *J Psychiatry Neurosci.* 2012 Apr 3;37(3):110125. doi: 10.1503/cjs.110125. [Epub ahead of print]

These pictures show differences in blood flow to the superior parietal area (precuneus) in individuals with schizophrenia with preserved awareness of illness (left) and impaired awareness of illness or anosognosia (right).



Pictures courtesy of Dr. Eric Guedj and colleagues, Hospital de la Timone, Marseille, France.

- **Anosognosia is associated with widespread impairments in white matter.**

At New York University, 36 individuals with schizophrenia and schizoaffective disorder underwent diffusion tensor imaging (DTI), which assesses brain white matter integrity. Those with poorer awareness of their illness were significantly more likely to have impaired white matter function in the frontal lobe (e.g., left middle and right superior frontal gyri); temporal lobe (e.g., bilateral parahippocampal gyri); cingulate; thalamus; and basal ganglia (caudate and lentiform nucleus).

Antonius D, Prudent V, Rehani Y, D'Angelo D, Ardekani BA, Malaspina D, Hoptman MJ. White matter integrity and lack of insight in schizophrenia and schizoaffective disorder. *Schizophr Res*. 2011 May;128(1-3):76-82. Epub 2011 Mar 22.

- **Anosognosia is associated with decreased cortical thickness.**

In Montreal, 79 individuals with first-episode psychosis were assessed clinically and by magnetic resonance imaging (MRI). Poorer awareness of illness was significantly associated with having a thinner brain cortical layer in the left middle frontal gyrus, left inferior frontal gyrus, left inferior temporal gyrus, left and right precentral gyrus, and right occipital gyrus. Impaired awareness of need for treatment was significantly associated with a thinner brain cortical layer in the left middle and medial frontal gyri; parietal precuneus and supramarginal gyrus; temporal parahippocampus and superior, middle and inferior gyri; and middle occipital gyrus. The authors concluded that “insight involves a network of brain structures, and not only the frontal lobes as previously suggested.”

Buchy L, Ad-Dab'bagh Y, Malla A, Lepage C, Bodnar M, Joober R, Sergerie K, Evans A, Lepage M. Cortical thickness is associated with poor insight in first-episode psychosis. *J Psychiatr Res*. 2011 Jun;45(6):781-7. Epub 2010 Nov 19.

- **Anosognosia is associated with impairments in midline brain structures (posterior cingulate and precuneus).**

In England, 82 individuals with first episode psychosis and 91 normal controls were assessed on neuropsychological tests and by magnetic resonance imaging (MRI). Twenty of the individuals with first-episode psychosis “had no capacity to identify psychotic symptoms as pathological.” Compared with the other 62 individuals, those 20 had “significantly reduced global gray matter volume,” most marked in the left posterior cingulate cortex, the right precuneus, and the cuneus.

Morgan KD, Dazzan P, Morgan C, Lappin J, Hutchinson G, Suckling J, Fearon P, Jones PB, Leff J, Murray RM, David AS. Insight, grey matter and cognitive function in first-onset psychosis. *Br J Psychiatry*. 2010 Aug;197(2):141-8.

- **Anosognosia is associated with impairments of temporal and parietal areas.**

In England, 52 individuals with schizophrenia or schizoaffective disorder and 30 normal controls were assessed for awareness of symptoms and underwent magnetic resonance imaging (MRI).

Those with poorer awareness of their symptoms had decreased gray matter volume in their left superior, left middle, and right inferior temporal gyri, as well as the right inferior parietal lobule and right supramarginal gyrus (all $p < 0.001$).

Cooke MA, Fannon D, Kuipers E, Peters E, Williams SC, Kumari V. Neurological basis of poor insight in psychosis: a voxel-based MRI study. *Schizophr Res.* 2008 Aug;103(1-3):40-51. Epub 2008 Jun 9.

- **Anosognosia is associated with decreased gray matter volume of the prefrontal cortex.**

In England, 28 outpatients with stable schizophrenia were assessed for insight and underwent magnetic resonance imaging (MRI). Lower levels of insight were moderately associated with decreased volume of the prefrontal gray matter, especially the inferior frontal gyrus.

Sapara A, Cooke M, Fannon D, Francis A, Buchanan RW, Anilkumar AP, Barkataki I, Aasen I, Kuipers E, Kumari V. Prefrontal cortex and insight in schizophrenia: a volumetric MRI study. *Schizophr Res.* 2007 Jan;89(1-3):22-34. Epub 2006 Nov 13.

- **No association is found between anosognosia and regional brain volumes.**

In Italy, 50 patients with schizophrenia and 30 normal controls were assessed for awareness of illness and by magnetic resonance imaging (MRI). No relationship was found between awareness of illness and the gray and white matter volumes in the frontal or temporal cortex.

Bassitt DP, Neto MR, de Castro CC, Busatto GF. Insight and regional brain volumes in schizophrenia. *Eur Arch Psychiatry Clin Neurosci.* 2007 Feb;257(1):58-62.

- **Anosognosia is associated with decreased activation of the left medial prefrontal cortex.**

In England, 14 individuals with schizophrenia were subjected to functional magnetic resonance imaging (fMRI) both during an acute schizophrenia episode and again after they had been stabilized. During their fMRI, they were asked to do tasks that measured social functioning and awareness of illness. Their left medial prefrontal cortex showed improved activation when they were stabilized, and this correlated with improvement in insight scores ($r = 0.81$, $p < 0.001$).

Lee KH, Brown WH, Egleston PN, Green RD, Farrow TF, Hunter MD, Parks RW, Wilkinson ID, Spence SA, Woodruff PW. A functional magnetic resonance imaging study of social cognition in schizophrenia during an acute episode and after recovery. *Am J Psychiatry.* 2006 Nov;163(11):1926-33.

- **Anosognosia is associated with decreased volume of right dorsolateral prefrontal cortex and right orbitofrontal cortex.**

At the University of Texas Southwestern, 14 patients with schizophrenia and 21 normal controls were assessed for awareness of illness and symptoms and by magnetic resonance imaging

(MRI). Patients with poorer awareness of their illness and symptoms also had significantly smaller right dorsolateral prefrontal cortex ($r = -0.72$, $p = 0.04$).

Shad MU, Muddasani S, Keshavan MS. Prefrontal subregions and dimensions of insight in first-episode schizophrenia--a pilot study. *Psychiatry Res.* 2006 Jan 30;146(1):35-42. Epub 2005 Dec 19.

- **Anosognosia is associated with reduced gray matter in the cingulate and inferior temporal regions**

In South Korea, 35 patients with paranoid schizophrenia and 35 matched normal controls underwent clinical testing and magnetic resonance imaging (MRI). Those with greater “lack of judgment and insight” had reduced gray matter in their right anterior cingulate, left posterior cingulate, and inferior temporal region on both sides.

Ha TH, Youn T, Ha KS, Rho KS, Lee JM, Kim IY, Kim SI, Kwon JS. Gray matter abnormalities in paranoid schizophrenia and their clinical correlations. *Psychiatry Res.* 2004 Dec 30;132(3):251-60.

- **Anosognosia is associated with decreased volume of the right dorsolateral prefrontal cortex.**

At the University of Pittsburgh, 35 individuals with first episode schizophrenia, who had never been treated with any antipsychotic drugs, were assessed clinically, neuropsychologically, and by magnetic resonance imaging (MRI) of the frontal lobes and hippocampus. Eighteen patients had poor awareness of their illness, and 17 had good awareness of their illness. Those with poor awareness had decreased volumes of their right dorsolateral prefrontal cortex (DLPFC) ($r = -0.61$, $p = 0.008$). Unawareness of illness was not associated with hippocampal volume nor with duration of illness or other clinical symptoms.

Shad MU, Muddasani S, Prasad K, Sweeney JA, Keshavan MS. Insight and prefrontal cortex in first-episode Schizophrenia. *Neuroimage.* 2004 Jul;22(3):1315-20.

- **Anosognosia is not correlated with global brain measures.**

In England, 78 men with schizophrenia and 36 normal controls were assessed for awareness of illness and underwent magnetic resonance imaging (MRI). There were “no significant correlations between total insight score and grey, white, CSF, and total brain volume.” The authors concluded that such research was not likely to be useful for such “global brain measures” and that “future investigations should pay attention to more specific cortical regions.”

Rossell SL, Coakes J, Shapleske J, Woodruff PW, David AS. Insight: its relationship with cognitive function, brain volume and symptoms in schizophrenia. *Psychol Med.* 2003 Jan;33(1):111-9.

- **Anosognosia is associated with specific subregions of the frontal lobes.**

At Dartmouth Medical School, 15 individuals with schizophrenia and schizoaffective disorder were assessed for awareness of illness and frontal brain structures by magnetic resonance imaging (MRI). Those with less awareness of their illness had significantly smaller bilateral middle frontal gyrus volume ($r = -0.92$ and -0.72 , $p < 0.01$). There was also a trend for these individuals to have a smaller right gyrus rectus and left anterior cingulate gyrus. The authors concluded that “the strong correlations between bilateral middle frontal gyri and unawareness suggest involvement of dorsolateral prefrontal cortex,” an area that has been associated with schizophrenia in many neuropsychological and neuropathological studies.

Flashman LA, McAllister TW, Johnson SC, Rick JH, Green RL, Saykin AJ. Specific frontal lobe subregions correlated with unawareness of illness in schizophrenia: a preliminary study. *J Neuropsychiatry Clin Neurosci*. 2001 Spring;13(2):255-7.

- **Anosognosia is associated with atrophy of the frontal lobes.**

In Norway, 21 individuals with schizophrenia and 21 matched normal controls were assessed by computerized tomography (CT) scans. Seven of the 21 individuals with schizophrenia had mild or moderate atrophy of their frontal lobes, and this atrophy correlated with having poorer awareness of their illness ($r = -0.52$, $p < 0.05$). Poorer awareness of illness also correlated with poorer executive function, a frontal lobe-associated trait, but not with other neuropsychological measures. The authors concluded that “unawareness of illness in schizophrenia may be related to frontal lobe deficit.”

Larøi F, Fannemel M, Rønneberg U, Flekkøy K, Opjordsmoen S, Dullerud R, Haakonsen M. Unawareness of illness in chronic schizophrenia and its relationship to structural brain measures and neuropsychological tests. *Psychiatry Res*. 2000 Nov 20;100(1):49-58.

- **Anosognosia is associated with having a smaller brain size.**

At Dartmouth Medical School, 18 individuals with schizophrenia with a poor awareness of their illness were compared on magnetic resonance imaging (MRI) with 12 individuals with schizophrenia with a good awareness of their illness and 13 healthy controls. There were no differences between the schizophrenia groups on education, symptoms, or severity of illness. However, those with poor awareness of their illness had significantly smaller brains and decreased intracranial volumes, findings consistent with having had a greater loss of brain tissue (atrophy) associated with their schizophrenia.

Flashman LA, McAllister TW, Andreasen NC, Saykin AJ. Smaller brain size associated with unawareness of illness in patients with schizophrenia. *Am J Psychiatry*. 2000 Jul;157(7):1167-9.

- **Anosognosia does not correlate with total ventricular volume.**

In England, 128 individuals with recent-onset psychosis were assessed for awareness of illness and underwent a computerized tomography (CT) scan. No correlation was found between awareness of illness and total ventricular volume.

David A, van Os J, Jones P, Harvey I, Foerster A, Fahy T. Insight and psychotic illness. Cross-sectional and longitudinal associations. *Br J Psychiatry*. 1995 Nov;167(5):621-8.

- **Anosognosia correlates with enlarged brain ventricles.**

In Japan, 22 patients with chronic schizophrenia were assessed for awareness of illness and underwent magnetic resonance imaging (MRI). Those patients with impaired awareness of illness had significant ventricular enlargement ($p < 0.05$).

Takal A, Uematsu M, Ueki H, Sone K, Kalya H. Insight and its related factors in chronic schizophrenic patients: a preliminary study. *Eur J Psychiat.* 1992;6:159-170.