

eMEASURES 2.0

What is the eMeasures system?

eMeasures is a web-based psychiatric research instrument, hosted by the Center for Developmental Epidemiology (CDE) at the Duke University School of Medicine in Durham, North Carolina (USA). Researchers all over the world connect to the server using web-deployed thin-client software on their Windows tablet computers. Interviewers input interview data online or offline and then upload it to the Duke servers whenever an Internet connection is available. CDE staff compiles the datasets and run diagnostic algorithms on the data. We then make the results available to the researchers.

This Software-as-a-Service (SaaS) model has the advantage that software integration and maintenance are simple and automated for the researchers who use our system. They do not have to set up or maintain any data entry systems or worry about storage. The entire core infrastructure is maintained by the staff of the CDE. We worry about security and regulatory compliance (according to U.S. requirements). This means infrastructure cost is spread over many studies, which allows us to scale your cost to the needs of your study.

The back-end systems for eMeasures are hosted on state-of-the-art hardware and software at the newest datacenter on the campus of Duke University. The systems and databases are updated and backed up regularly. eMeasures complies with Duke computer security policies as well as United States and North Carolina data security regulations.

Hardware and Software Requirements for using the eMeasures

To conduct interviews on eMeasures, interviewers need a Windows Tablet PC that supports stylus input. We recommend at least a 12-inch screen and enough processing power and memory that would allow you to watch a YouTube video full screen on the device.

eMeasures has been tested on Windows 7, and you'll need Internet Explorer 7 or later for the on-click deployment of the client. That process will install Microsoft's .Net Framework if it's not yet installed. Of course the device has to be networked (WLAN is fine) and it has to support SSL encryption for secure connections to the eMeasures server.

The eMeasures system is currently comprised of two tools: the eMeasures interview and the eMeasures coding tool. A third tool, the eMeasures report, is not yet developed. A Windows Tablet PC that supports stylus input enables the interviewer to take handwritten descriptions of symptoms during the interview, which is a key aspect of the CDE interview schedules.

eMEASURES 2.0

Available eMeasures Interview Schedules:

Preschool Age Psychiatric Assessment (PAPA): Parent interview schedule originally developed for use with preschoolers up to 6 years old. However, we provide full assurance that it is appropriate to use the PAPA with 8 year old children for the diagnosis of the full range of common psychiatric disorders.

Child and Adolescent Psychiatric Assessment (CAPA): Parent and Child interview schedule designed for use with children 9 to 17 years old. The CAPA is used for the diagnosis of the full range of common psychiatric disorders.

Young Adult Psychiatric Assessment (YAPA): Child interview schedule is designed for use with young adults 18 years or older. There is no “parent interview” schedule for the YAPA. The YAPA is used for the diagnosis of the full range of common psychiatric disorders.

As with the paper versions of the CDE measures, the eMeasures instruments are coded by the interviewer after the interview has been completed. Coding validation algorithms are embedded in the coding tool. This eliminates most “coding” errors by interviewers. Coding validation identifies coding errors and provides a short explanation of the error to the interviewer: for example, “The onset date precedes the date of birth.” Coding validation in conjunction with “gateways” seamlessly guides the interviewer through the interviews thus reducing administration time as opposed to paper versions. Of course, administration time will depend on the amount of psychopathology reported by the interviewee. Coding time is also reduced by as much as half when compared to coding paper interviews.

When interviews have been coded, checked, and approved, the Duke technical and analytic staff will convert the eMeasures data into a SAS database and then run interview data through the DSM-IV/DC: 0-3R/RDC-PA diagnostic algorithms developed by Dr. Egger. **This will not be done for “individual” interviews, but rather at predetermined intervals.** We will generate 2 datasets per year (usually at 6 month intervals). This will produce a dataset with both the raw variables and the diagnostic variables including specific psychiatric symptoms, scale scores, diagnoses, impairment from psychiatric symptoms, life events (if life event modules were used in your study), other risk factors, and demographic information endorsed by the parent about his/her child. This SAS dataset can be converted into a SPSS or STATA dataset using DBMS copy.

If a research group wants to administer the paper version of the PAPA, the eMeasures system can be used (using any PC not necessarily a tablet PC) as the data entry system. However, the stylus function will not be available for non-tablet PC.

eMEASURES 2.0

When funding can be obtained, we will develop an eMeasures report tool. The report function will work as follows: When the eMeasures has been coded and checked back into the eMeasures server, the interview will be automatically analyzed with DSM-IV/DC: 0-3R/RDC-PA diagnostic algorithms. A report will be generated detailing the psychiatric symptoms, scale scores, and diagnoses, impairment from psychiatric symptoms, life events (if life event modules are used in your study), other risk factors, and demographic information endorsed by the parent about his/her child. This will be very useful for (1) clinical settings (2) studies using consensus clinical diagnostic processes and (3) selecting subjects for studies or nested cohorts within an on-going study.

Administration of CDE measures (PAPA, CAPA, and YAPA) requires training: 4 days either at Duke University or with our trainer at your site. Brian Small (brian.small@dm.duke.edu) will provide training. Additional costs associated with using paper schedules, the eMeasures system, and training costs, are outlined in a separate document ([eMeasures 2.0 FAQs and Costs](#)).

The PAPA has been translated into Norwegian, Romanian, German, and French Canadian. Spanish and Korean versions are under development. Researchers interested in developing a translation of the PAPA should contact Dr. Egger or Brian Small.

The PAPA was originally developed for preschoolers aged 2 to 5 years old. However, we provide full assurance that it is appropriate to use the Preschool Age Psychiatric Assessment (PAPA) with 8 year old children for the diagnosis of the full range of common psychiatric disorders. We (and others) have used the PAPA with 8 year old children. We recommend the following interviewing strategy.

1. Interview parents using the PAPA for children up to 8 years old.
2. For children ages 9 and older, interview the parent and child with the Child and Adolescent Psychiatric Assessment (CAPA).

All CDE interview schedules can be modularized to fit the specific needs of your study or clinic, provided deleted modules are not necessary for diagnosis.