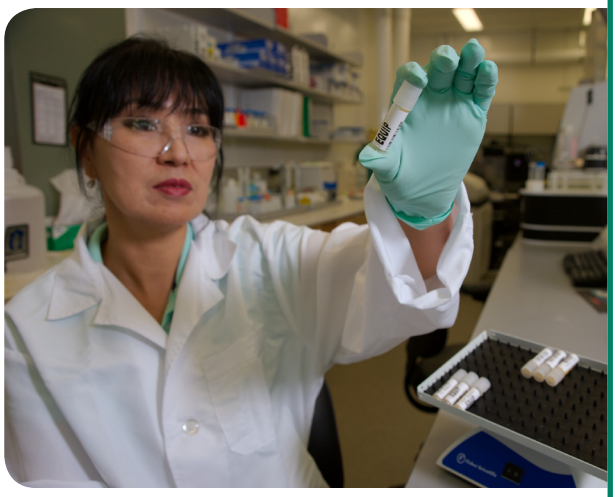
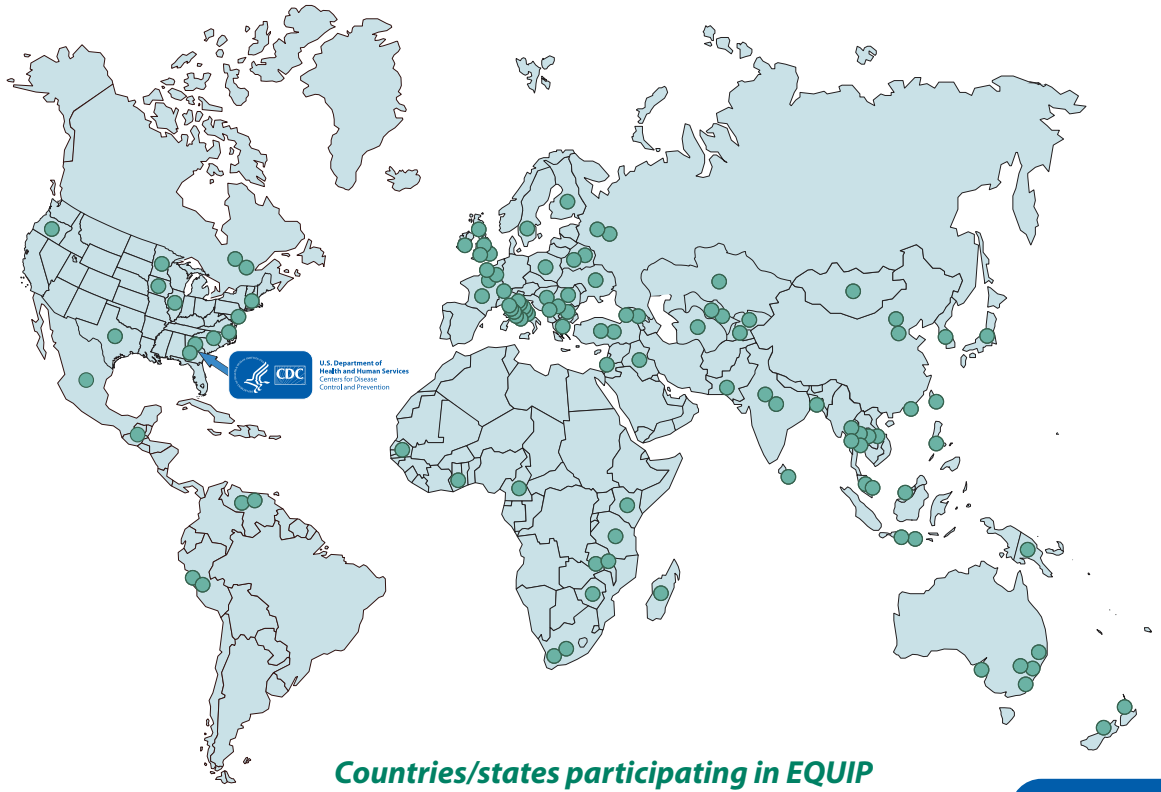
# EQUIP
## Ensuring the Quality of Urinary Iodine Procedures

### March 2012



Iodine is a micronutrient used by the body to make thyroid hormones, which are necessary for normal growth, development, and metabolism throughout a person's lifetime. Most people do not get all of the iodine that they need, and iodine deficiency disorders (IDD) are thought to affect more than a billion people worldwide. Iodine deficiency is the most preventable cause of mental retardation in the world. However, only 70% of the world's edible salt is iodized, and in the United States, only 50-60% of the population uses iodized salt. Because there is no active control of iodine in the food supply (at least not in the United States), monitoring urinary iodine levels is an essential part of measuring a country's thyroid health.

Accurate laboratory tests can detect iodine deficiency. Urinary iodine (UI) analysis is the most common method used, worldwide, for assessing the iodine status of a population. In 2001, the Centers for Disease Control and Prevention (CDC) established the Ensuring the Quality of Iodine Procedures (EQUIP) program to help laboratories worldwide assess the accuracy of their urinary iodine analyses and to provide them with technical support. EQUIP is a standardization program that addresses laboratory quality-assurance issues related to testing for iodine deficiency. CDC's EQUIP program currently assists more than 126 iodine laboratories in more than 60 countries. Iodine is one of many micronutrients for which CDC monitors and conducts research.




***Countries/states participating in EQUIP***

National Center for Environmental Health
Office of Noncommunicable Diseases, Injury and Environmental Health

CS230076-A

## Program Details

CDC provides each laboratory with quality-control materials, analytical guidelines, and technical training and consultation so that these laboratories can accurately measure iodine levels in their national surveys. Three times a year, CDC sends participating laboratories 3-5 urine samples of different concentrations to analyze and then report their results to CDC. Laboratories are also asked to report the limit of detection for their analytical method. CDC sends each laboratory a report of their results, and the laboratories will use the reports to

- Confirm the quality of their analyses.
- Eliminate bias and precision problems in the assay system.
- Increase the confidence of laboratory personnel in performing the analyses.

Data are provided for all participating laboratories; however, to maintain confidentiality, laboratories are not identified by name in the report. The samples that CDC prepares for the laboratories are prepared using Inductively Coupled Plasma–Mass Spectrometry (ICP-MS), although most of the participating laboratories use standard spectrophotometric methods to conduct their analyses.

At the end of each year, laboratories receive a certificate with tabulated progress scores for that year.

## Frequently Asked Questions

***Is enrolling in EQUIP a long process?***

No. When the program receives your application by e-mail or fax, your laboratory will be enrolled immediately.

***How much does it cost to participate in the program?***

There is no charge. Providing quality-assurance materials is a service that CDC provides free of charge. CDC sees this program as its part in the effort to help eliminate IDD around the world.

***The fact sheet mentions a certificate. Does that mean our laboratory receives certification?***

No. The certificate is merely a way for laboratories to verify their participation in the program and to track their progress made over the course of the year. Participation in this program cannot provide or authorize certification or accreditation.

***If you calculate progress scores, does this mean our laboratory can fail?***

No. This is not a pass or fail program. The emphasis of EQUIP is not on passing or failing but on measurable and sustained progress.

***My laboratory was opened recently and still has many improvements to make. Can we still enroll?***

Yes. Any laboratory can enroll. CDC supports good laboratory practice and would like to help laboratories improve the reliability of UI analyses around the world. As such, CDC encourages all laboratories performing UI analysis to enroll.

## How to Enroll

1. Go to http://www.cdc.gov/labstandards/equip_enrollment.html and complete the application form.
2. E-mail the completed form to iodinelab@cdc.gov or fax it to (770) 488-4097. A confirmation e-mail will be sent within 72 hours.
3. Your laboratory will be enrolled immediately upon receipt of your form and will receive a set of samples each February, June, and October.

## Contact Information

Centers for Disease Control and Prevention (CDC)
Ensuring the Quality of Urinary Iodine Procedures
4770 Buford Highway N.E., Mailstop F-18
Atlanta, GA 30341-3724 USA
Fax number: (770) 488-4097
E-mail address: iodinelab@cdc.gov

## Recent Publications

Makhmudov AA, Caldwell KL. The Challenge of Iodine Deficiency Disorder. A Decade of CDC's Ensuring the Quality of Urinary Iodine Procedures Program. CDC. 2011; 1-63.

Makhmudov AA, Caldwell KL. The U.S. CDC's ensuring the quality of urinary iodine procedures (EQUIP) program's 10 years old. IDD Newsletter. November. 2011;4-6.

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Dearth T, Makhmudov AA, Pfeiffer CM, Caldwell KL. Fast and reliable salt iodine measurement: Evaluation of the WYD iodine checker in comparison with iodometric titration. Food Nutr Bull. 2004;25:(2)130-6.

Dearth T, Pfeiffer CM, Caldwell KL. International Resource Laboratories for Iodine (URLI) Network. In: Hetzel B, Delange F, Dunn JT, Ling J, Mannar V, Pandav CS, editors. Towards the global elimination of brain damage due to iodine deficiency. New Dehli: Oxford University Press; 2004. p. 138-44.

Caldwell KL, Maxwell BC, Makhmudov AA, Jones RL, Pino S, Braverman LE, et al. Inductively coupled mass spectrometry (ICP-MS) to measure urinary iodine in NHANES 2000: comparison with previous method. Clin Chem. 2003;49(6):1019-21.

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**The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries, enhances health decisions by providing credible information on critical health issues, and promotes healthy living through strong partnerships with local, national, and international organizations.**