Supporting Statement A for:

Genetic Testing Registry

OMB Control Number 0925-0651 Expiration Date 07/31/2018

June 5, 2018

Check off which applies:

- New
- Revision
- Reinstatement with Change
- Reinstatement without Change
- ■ **Extension**
- Emergency
- Existing

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A. Justification

The National Institutes of Health (NIH) created the Genetic Testing Registry (GTR), a public database that health care providers, researchers, and others can search for information submitted voluntarily by genetic test providers. The GTR aims to enhance access to information about the availability and scientific basis of genetic tests, including newer types of tests such as pharmacogenomic tests.

The GTR project is overseen by the NIH Office of the Director. The National Center for Biotechnology Information (NCBI), part of the National Library of Medicine at NIH, is responsible for developing and maintaining the Registry, which became publicly available February 29, 2012 (OMB No. 0925-0651; expires July 31, 2018).

NCBI is considered a suitable developer of the GTR because of its experience in building databases of genetic and medical information and its ability to integrate the information with other data, greatly enhancing the GTR's utility for medical professionals and researchers. The GTR is also integrated with other relevant NIH databases to assist these user groups. NIH is, therefore, a natural home for the GTR because of its role in advancing public health through science and its strong expertise in developing databases.

A.1 Circumstances Making the Collection of Information Necessary

The collection of information activities of the GTR set forth herein are conducted under the authorities granted in Section 465 of the Public Health Service Act, 42 U.S.C. 286; and Section 301 of the Public Health Service Act, 42 U.S.C. 241.

Scientific advances—particularly in the last decade—have expanded our understanding of the genomic and genetic factors involved in health and disease. This increased knowledge has been accompanied by a rapid rise in the number and complexity of genetic tests. Laboratory tests for more than 10,000 genetic conditions are now available, but there had been no comprehensive public resource that provides detailed information about the scientific basis of these tests until the development of the GTR. Calls for greater transparency of genetic testing through a registry have come from a number of quarters, including the Secretary's Advisory Committee on Genetics, Health, and Society, which advised the Secretary of Health and Human Services from 2003 to 2011, and the Genetic Alliance, a health advocacy organization.

To address the information gap about genetic tests, NIH developed the GTR, a publicly accessible online resource that provides a centralized location for test developers to submit information voluntarily about genetic tests, including newer types of tests such as pharmacogenomic tests. Enhancing access to detailed test information is important to enable informed decision-making by health care providers and to facilitate research. The GTR may also be of value to other groups such as clinical laboratory professionals, payers, policymakers, and regulators.

A.2 Purpose and Use of the Information Collection

The purpose of the GTR is to provide detailed information about the availability and scientific basis of genetic tests in a centralized resource as well as to facilitate data sharing for research and new scientific discoveries. Participation in GTR is voluntary, but if a laboratory chooses to participate, it must complete a certain set of data fields (called the "minimal fields"). Information

is submitted electronically at the website https://submit.ncbi.nlm.nih.gov/subs/gtr. For details of the information collection, see the attachment that accompanies this Supporting Statement.

The GTR provides information about clinical and research tests for heritable variants, including biochemical and pharmacogenomic tests, tests for somatic variants, and tests for chromosomal aberrations and copy number variants as well as information about the laboratory offering the test, such as contact information and credentials of the laboratory (e.g., certification and licensure). Test information includes the purpose of the test and its limitations, whether it is a clinical or research test, the test methodology and analytes that are measured, performance characteristics such as analytic validity and clinical validity, information on clinical utility, and whether manufactured tests have been cleared or approved by the Food and Drug Administration.

The GTR is of value to clinicians by providing information about the availability, accuracy, validity, and usefulness of genetic tests. Furthermore, the GTR highlights evidence gaps where additional research is needed to understand the clinical validity and utility of genetic tests. The inclusion of clinical validity and utility data in the GTR is of value to public and private payers. In addition, the GTR may facilitate collaborations such as laboratory participation in quality assurance exchanges. Also, given that the adequacy of genetic testing oversight has been an issue for more than two decades, the GTR's ability to enhance the transparency of this field is of value to public policy makers.

A.3 Use of Improved Information Technology and Burden Reduction

The GTR utilizes the latest software and Internet technologies for registration and search functions and provides a range of tools to simplify and speed the process of registering tests. The GTR data entry system has been designed to minimize burden to registrants with a submission user interface augmented by extensive use of pull-down menus and scrolling menus to populate fields, "find as you type" (or "type ahead") functionality, and text fields for those components where submitters might want to cut-and-paste information from their websites and other sources. Where possible, fields are automatically populated for the submitter; for instance, once a submitter fills out the condition for which a test is used, several related fields (e.g., disease identifiers, synonyms, acronyms and disease types) are autopopulated. In addition, a copy function is available to expedite data entry for tests that differ from already submitted tests by just a few data fields (e.g., test order code, test name). Submitters have the opportunity to modify any field that is copied from another test. The copy function is particularly helpful for entering tests based on similar platforms or conditions.

The GTR also supports mechanisms for the bulk submission of data, which significantly reduces the burden for laboratories that want to provide information on multiple genetic tests. The GTR supports submission as an XML file or uploading information through two choices of spreadsheet formats. The first format includes the minimal fields and a small number of recommended fields. The second format incorporates all available data fields. All bulk submission mechanisms support review of the uploaded data through the submission user interface.

The GTR employs a Standard Operating Procedure (SOP) for Resolution of Complaints about Information Submitted to the Genetic Testing Registry. The SOP has been tested on one case, thus far. The GTR enables users to submit complaints, such as breaches of the GTR Code of Conduct,[1] through the "Contact GTR" link on the GTR homepage.[2] This link brings the

[1] Code of Conduct for submitters to the Genetic Testing Registry: http://www.ncbi.nlm.nih.gov/gtr/docs/code/.
[2] Genetic Testing Registry homepage: http://www.ncbi.nlm.nih.gov/gtr/.

user to a feedback form,[3] which includes options to "report information that appears to be inaccurate or misleading" and to submit "other comments or questions on the content of the registry."

A.4 Efforts to Identify Duplication and Use of Similar Information

The GTR is unique because it includes a broad range of tests for inherited and somatic mutations, and test providers are able to submit detailed information about these tests. Two existing resources provide limited information for a subset of genetic tests:

One of the existing genetic test resources is the Association for Molecular Pathology test directory (http://www.amp.org/TestDirectory.cfm), which provides information about tests for infectious disease, solid tumors, and hematopathology. Its information is also limited and includes test methodology and laboratory location.

The second resource is Concert Genetics (https://app.concertgenetics.com/#/). It is a commercially funded resource that provides basic test and laboratory information largely gathered from the internet, along with information about price and turn-around time, and the option to order tests through the website.

Some GTR data elements are required by the Centers for Medicare & Medicaid Services (CMS) for Clinical Laboratory Improvement Amendments (CLIA) certification and by the Food and Drug Administration (FDA) for the premarket review of manufactured test kits. NIH consults with these agencies on an ongoing basis to minimize reporting burden.

A.5 Impact on Small Businesses or Other Small Entities

The GTR is anticipated to have a minor impact on small businesses. The minimal data that must be submitted to register a clinically available genetic test is similar to existing requirements for CLIA certification, certification by the College of American Pathologists, or other types of certification or licensure. Thus much of the information to be submitted to the GTR will have already been compiled by the submitter, significantly reducing the additional burden of this information collection. Technological tools such as bulk data uploads and copy functions (further explained in Section A.12) will also reduce the burden.

The GTR has 31 minimal data fields (which must be completed to register a clinical test in GTR) and 89 optional fields (available for completion at the submitter's discretion). Nineteen of the minimal fields, which consist of contact information for the submitting laboratory and associated staff, are submitted only once. For research tests, the minimal dataset for registration is smaller than for clinically available tests with 12 minimal fields and 36 optional fields.

A.6 Consequences of Collecting the Information Less Frequently

Submitters will provide information on a non-repeating, continual basis, which means they will register a test once and can add new tests on a continual basis. NCBI requests that submitters review their test information at least once every 12 months and update the information as needed or remove the test from GTR if it is no longer offered. Less frequent updating could result in misinformation about genetic tests that compromises the GTR's utility as a resource to enable

[3] NCBI Feedback for the Genetic Testing Registry: http://www.ncbi.nlm.nih.gov/projects/gtr_feedback/feedback.cgi.

informed decision-making by health care providers. NCBI removes out-of-date test information from the GTR if submitters fail to review it annually.

A.7 Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

This collection fully complies with 5 CFR 1320.5.

A.8 Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency

The proposed information collection was previously published in the *Federal Register* (FR) on April 2, 2018, (83 FR 14018) and allowed 60 days for public comment. No comments were received.

The GTR also benefits from coordination with HHS agencies. NIH has met with FDA and CMS to evaluate how the agencies' related activities could be harmonized to minimize reporting burden and maximize GTR utility for data submitters, users, and agency mission.

A.9 Explanation of Any Payment or Gift to Respondents

No gifts or payments are to be offered in regard to this information collection.

A.10 Assurance of Confidentiality Provided to Respondents

No personally identifiable information is sent to the GTR, other than submitter-provided contact information for designated points-of-contact. Respondents can choose whether their contact information is made accessible to the public or not.

A.11 Justification for Sensitive Questions

No questions of a sensitive nature are included in this data collection.

A.12 Estimates of Annualized Burden Hours and Costs

Although participation in the GTR is voluntary, in order to participate, the submitter must provide information for a certain subset of data fields, identified as the "minimal fields." The GTR includes 31 minimal fields and 89 optional fields. Table 12-1 provides estimated burden hours to submit information for the minimal fields and optional fields.

NIH used current GTR registration data to estimate the annual number of respondents. As of October 2, 2017, 377 laboratories have submitted 53,785 tests. The average annualized number of tests submitted per laboratory is 25.[4]

Based on simulated trials of entering test information in the GTR, NIH projected that it would take submitters an average of 0.5 hours (30/60 minutes) to provide test information for the minimal fields. Nineteen of the 31 minimal fields request laboratory data and contact information, which the submitter completes only once. These data autopopulate new test records, leaving 12 minimal fields that require completion. NIH estimated that it would take submitters 2.5 hours to provide information for all 89 optional fields. Of the 502 registered laboratories, 377

[4] Average annualized number of tests = [53,785 tests/377 labs]/5.6 years = 25

completed 1 or more optional fields, and on average, 6 optional fields were completed per test. The estimated average time to complete 6 optional fields is 0.2 hr (10/60 minutes).[5]

The estimated hour burdens reflect the average time for submitters who are familiar with their tests and know where to find test information. It is assumed that test submitters will have already gathered much of the information requested for these data fields as part of laboratory certification and licensure. Submitters will likely become more efficient in data entry as they gain experience with the GTR. In addition, the GTR provides some time-saving features. For example, a copy (clone) function is available to expedite entry for tests that differ by just a few data fields (e.g., test order code, test name), which is especially helpful for entering tests based on a similar platform. Submitters are able to modify any of the copied data.

The GTR also has mechanisms for the bulk submission of data, which significantly reduces the burden for laboratories that want to provide information on multiple genetic tests. The GTR supports bulk submission as an XML file or uploading subsets of information from spreadsheets. The expectation is that large laboratories will have their tests already stored electronically and will have the computational support to use bulk submission to the GTR. In practice, the observed proportion of tests submitted using bulk submission is 83 percent. NIH estimated that bulk submission reduces burden by 40 percent. Therefore, completion of minimal fields by bulk submission is estimated to take 0.3 hours (18/60 minutes) instead of 0.5 hours (30/60 minutes), and completion of 6 optional fields by bulk is estimated to take 0.1 hours (6/60 minutes) rather than 0.2 hours (10/60 minutes). Taking into consideration the proportion of tests submitted individually versus bulk submission, the total annual hour burden to complete minimal and an average of 6 optional fields is 4,198 hours.

Table 12-1 Estimates of Hour Burden

Type of Respondent	Type of Form	Estimated Annual Number of Respondents	Number of Responses per Respondent	Average Time per Response (in hours)	Total Annual Burden Hours
Laboratory Personnel Using Bulk Submission	Minimal Fields	313	25	18/60	2,348
	Optional Fields	313	25	6/60	783
Laboratory Personnel Not Using Bulk Submission	Minimal Fields	64	25	30/60	800
	Optional Fields	64	25	10/60	267
Total		377	18,850		4,198

To estimate the annualized cost to respondents, NIH used the mean hourly wage of a genetic counselor from the National Society of Genetic Counselors 2016 Professional Status Survey: Salary & Benefits.[6] Table 12-2 provides the estimated annualized cost for respondents. Based on a mean hourly wage of $43.00, the total estimated cost for all respondents is $180,887. Laboratories can reduce cost by using time-saving features such as the copy function and bulk upload feature.

[5] Estimated average time to complete 6 optional fields: (2.5/89) = (x/6) =0.17 hr. or 10 minutes

[6] National Society of Genetic Counselors. 2016 Professional Status Survey: Salary & Benefits. See http://nsgc.org/p/cm/ld/fid=68.

Table 12-2 Annualized Cost to Respondents

Type of Respondent	Type of Form	Number of Respondents	Frequency of Response	Hourly Wage Rate	Respondent Cost
Laboratory Personnel Using Bulk Submission	Minimal Fields	314	25	$43.00	$101,265
	Optional Fields	314	25	$43.00	$33,755
Laboratory Personnel Not Using Bulk Submission	Minimal Fields	64	25	$43.00	$34,400
	Optional Fields	64	25	$43.00	$11,467
Total					$180,887

A.13 Estimates of Other Total Annual Cost Burden to Respondents and Record Keepers

There is no capital costs associated with this collection.

A.14 Annualized Cost to the Federal Government

The estimated annualized cost to the Federal Government is $2.565 million comprised of personnel and information technology (IT) costs associated with operation. This cost is based on 13 staff (contractor and federal) hardware and software, and maintenance/support.

Table 14-1 Annualized Cost to the Federal Government

Cost Descriptions	Grade/Step	Salary	% of Effort	Fringe (if applicable)	Total Cost to Gov't
NIH Project Director [1]	Title 42, Band V, Tier 2	$200,000	1.0		$200,000
NIH Content Specialist [3]	Title 42, Band II, Tier 1	$125,000	3.0		$375,000
NIH Software Developer [3]	Title 42, Band II, Tier 2	$130,000	3.0		$390,000
Contractor Content Specialist		$163,000	3.0		$489,000
Contractor Software Developer		$187,000	3.0		$561,000

Travel					
Other Cost					
IT Hardware and Software Ongoing Maintenance/Support					$550,000
Total					$2,565,000

A.15 Explanation for Program Changes or Adjustments

NIH is requesting an extension of the information collection approval. There are no program changes; burden estimates were adjusted based on actual GTR registration data over 5.8 years. Total annual burden hours have decreased to 4,178 from 5,536 in 2015. This is largely due to the increase in proportion of test submitted using time-saving bulk submission (from 62% of submissions to 83% of submissions).

A.16 Plans for Tabulation and Publication and Project Time Schedule

Information submitted to the GTR is made available to the public via a website operated and maintained by NIH at http://www.ncbi.nlm.nih.gov/gtr/. The only submitted information that will not be displayed on the website is a small number of fields for back-end database purposes (e.g., "person ID" and "laboratory unique code," which are both used for bulk data uploads) and private information for communication between the submitter and GTR staff (e.g., phone/fax numbers for internal communications). Submitters also have the option not to display credentials of personnel or the exact street address of the laboratory.

NIH publicly launched the GTR on February 29, 2012, following approval of its initial PRA submission (OMB No. 0925-0651). The GTR submission system is automated, and experience has shown that new submissions and updates are added to the public website quickly, generally within a day.

A.17 Reason(s) Display of OMB Expiration Date is Inappropriate

No exemption is requested.

A.18 Exceptions to Certification for Paperwork Reduction Act Submissions

No exceptions are requested.