Performance Audit • Report No. 17-07 October 2017

Georgia Department of Audits and Accounts
Performance Audit Division
Greg S. Griffin, State Auditor
Leslie McGuire, Director

Loan Forgiveness Programs

Ongoing assessment of loan forgiveness programs could enhance effectiveness

Why we did this review

Loan forgiveness programs (i.e., service cancelable loans) was identified as an audit subject by the Performance Audit Division due to the state's increased investment in loan forgiveness programs. The prevalence of state-funded loan forgiveness programs in Georgia has increased in recent years with the creation of new programs and additional funding to existing programs.

About Loan Forgiveness Programs

Loan forgiveness is an incentive typically used to recruit and retain individuals to high-need occupations or geographic areas. Loan forgiveness programs either provide student loans which can be forgiven if a service obligation is met or provide funding toward existing student loan debt.

Georgia funds various loan forgiveness programs targeted to occupations such as medical professionals, National Guard members, large animal veterinarians, engineers, and public service employees. Medical-related programs are administered by the Georgia Board for Physician Workforce, while the Georgia Student Finance Authority administers the other programs in consultation with universities and other entities.

What we found

Loan forgiveness programs are generally used to recruit and retain individuals to specific occupations or geographic locations, though not all of the state's programs were created to address a workforce shortage. We found that not all programs had a clearly stated purpose and that some programs had no entity clearly responsible for assessing program effectiveness or continued need for the program.

The programs that were not created to address a shortage include those requiring service in the Georgia Army National Guard, which does not have a shortage of enlistees or officers. For example, the program at the University of North Georgia is intended to support the school and students interested in military service. National Guard officials stated that the program improves the quality of its soldiers and officers, regardless of the existence of a shortage.

The programs that are intended to address workforce shortages are not always well targeted and their continued need is not routinely assessed. Programs that target geographic areas have not used available statistical data to identify the shortage areas most in need. As a result, some high-need areas are not eligible for awards, while awards are made to areas with less need. For some programs, no state entity is responsible for determining whether a workforce shortage continues to exist, resulting in continued funding of the program.

Loan forgiveness programs have contributed to the recruitment and retention of individuals to targeted occupations and areas. While incentive programs are likely to make some awards to individuals who would have achieved the desired outcome regardless, we found that four state programs reviewed have influenced the behavior of individuals.[1] For example, the University of North Georgia Military Scholarship (GMS) was instrumental in convincing our survey respondents to join the Georgia National Guard, while recipients of GMS and the Georgia Military College State Service Scholarship were more likely to meet their six-year commitment to the National Guard. Over one-third of responding physicians reported that the loan repayment program convinced them to practice in a rural area, and a small portion of the recipients of the Scholarship for Engineering Education responding to our survey indicated that the award significantly influenced their decision to major in engineering and work in Georgia.

Several factors impact the recruitment and retention effects of loan forgiveness programs, including marketing, award amounts, and penalties.

- Limited marketing efforts are more likely to reach those individuals already participating in the desired behavior, instead of convincing additional individuals to enter the occupation or geographic area.

- Higher award amounts are more likely to attract applicants that currently are unwilling or unable to participate. Some programs have award amounts that have been unchanged for many years, likely resulting in a declining incentive for potential applicants.

- Higher penalties encourage better rates of service completion. Programs with low interest rates do not encourage service completion and may be used by applicants as a traditional loan program.

What we recommend

To ensure programs can be accurately assessed, we recommend the General Assembly clarify the legislative intent for all loan forgiveness programs. We also recommend the General Assembly assign responsibility to the responsible entity for periodically assessing whether programs are still needed and the extent to which each program is achieving its intended purpose. Agencies should develop performance measures to determine if the purpose is being achieved.

To enhance the effectiveness of loan forgiveness programs, we recommend program officials consider whether loan forgiveness programs would benefit from improved marketing, program design changes, higher award amounts, and/or higher penalties. We also recommend program officials seek legislative changes when required.

See Appendix A for a detailed listing of recommendations.

Agency Responses: *Agencies were generally in agreement with recommendations related to clarifying the intent of programs and adopting performance measures. Most were also in agreement with recommendations to modify the targeting of awards to specific geographic areas (when applicable) and to evaluate other program design changes that may enhance recruitment and retention efforts. Specific agency responses are included at the end of each finding.*

---

[1] We reviewed the recruiting and retention for the four programs that were funded in each of the last five years. These include the University of North Georgia Military Scholarship, Georgia Military College State Service Scholarship, loan repayment programs for physicians, and the Scholarship for Engineering Education.

Table of Contents

Purpose of the Audit

This report examines loan forgiveness programs currently funded by the state. Specifically, the audit answered the following questions:

- Are Georgia's loan forgiveness programs targeted toward high-need occupations and geographic areas?
- To what extent do Georgia's loan forgiveness programs recruit and retain individuals to specified occupations and geographic areas?

A description of the objectives, scope, and methodology used in this review is included in Appendix B. A draft of the report was provided to applicable agencies and universities for their review, and pertinent responses were incorporated into the report.

Background

Loan Forgiveness Programs Overview

The general purpose of loan forgiveness programs is to recruit and retain individuals in high-need occupations and/or geographic locations. Loan forgiveness programs can be placed into one of two categories: in-school loan programs and on-the-job loan repayment programs.

- **In-school programs** provide students with loans that are forgiven if a service obligation is met (i.e., service cancelable loans). Some in-school programs refer to the awards as scholarships, but they require post-graduation service to avoid repayment.

  In-school loan forgiveness programs have the ability to affect individual behavior early on. They can encourage students to major in a particular field in an attempt to address a workforce shortage. Because the awards are made to students early in their education, the programs can have a relatively high rate of individuals that eventually change their major or choose employment in another location. In-school programs are likely to have higher costs than on-the-job programs because of an increased likelihood of defaults. Defaulted loans require more regular and intensive contact to attempt repayment and collection.

- **On-the-job programs** offer loan repayment toward existing student loan debt if the recipient completes a service obligation.

  On-the-job programs often have a low default rate, as recipients typically must already work in the required field (and location if applicable) to be eligible. These programs can encourage professionals to work in a specific location, but they generally do not increase the number working in a particular field. On-the-job programs require the recipients to acquire their own loans while in school. They have no ability to influence individuals who have no loans.

Georgia currently funds six in-school and two on-the-job programs. The Georgia Student Finance Authority (GSFA)[2] and the Georgia Board for Physician Workforce (GBPW) have administrative responsibility for the programs, but other agencies and schools may market the programs and select awardees. In fiscal years 2016 and 2017, two programs were created and three medical professions were added to an existing program. Only four programs have been active in each of the last five years.

In-School Programs

As shown in **Exhibit 1**, Georgia's six in-school loan forgiveness programs include three for National Guard service members, two for engineers, and one for public service employees. Programs were created over the last 35 years through state law or GSFA regulation drafted in response to an appropriation for the program purpose (see Appendix C). The number of active borrowers ranges from 24 for the Georgia National Guard Service Cancelable Loan (GNGSCL) to 711[3] for the Scholarship for Engineering Education (SEE). Maximum loan amounts also vary considerably from a low of $15,750 for the Scholarship for Engineering Education for Minorities (SEEM) to a high of $75,151 for the University of North Georgia Military Scholarship.

Three of the in-school programs are limited to specific colleges or universities, while the other three can be used for tuition at any eligible institution.

- The Georgia Military Scholarship is limited to the University of North Georgia, and the State Service Scholarship is limited to Georgia Military College.
- SEE is limited to students enrolled at Mercer University. GSFA regulations limit SEE to students enrolled at private universities in an engineering program leading to a baccalaureate degree approved by the Engineering Accreditation Commission (EAC) of the Accrediting Board for Engineering and Technology (ABET). Currently, Mercer University is the only private university with a qualifying engineering program.
- SEEM recipients must be enrolled at a public or private institution in an engineering program leading to a baccalaureate degree approved by the EAC of the ABET. Currently, this includes the Georgia Institute of Technology, Georgia Southern University, Kennesaw State University, the University of Georgia, and Mercer University. SEEM is limited to individuals who meet one of the following definitions of minority: female, Hispanic, American Indian or Alaska Native, Asian American, Black or African American, or Native Hawaiian or other Pacific Islander.
- Recipients of GNGSCL and the Student Access Loan (SAL) may attend any University System of Georgia, Technical College System of Georgia, or eligible private postsecondary institution.

---

[2] The Georgia Student Finance Commission is the umbrella agency for the Georgia Student Finance Commission, Georgia Student Finance Authority (GSFA), and Georgia Higher Education Assistance Corporation. GSFC receives appropriations for programs and provides funding to GSFA to administer loan and grant programs for which GSFA is statutorily authorized to administer. GSFA receives no administrative funding from state appropriations. Staff and leadership are shared between the entities.

[3] Although the Student Access Loan has considerably more borrowers, few utilize service cancelation.

Exhibit 1
Georgia's In-School Programs Vary in Number of Borrowers and Loan Amounts

Program	Created	Active Borrowers[1]	Annual Amount[2]	Max Amount[3]	Service Requirement
Georgia National Guard					
University of North Georgia Military Scholarship (GMS)	1982	311	$18,788	$75,151	Participate in ROTC and Georgia National Guard while in college and serve one year in the Georgia National Guard[4] for each year loan received
Georgia Military College State Service Scholarship (SSS)	1995	174	$19,623	$39,246	
Georgia National Guard Service Cancelable Loan (GNGSCL)	2003[5]	24	$4,350	$21,750	Maintain 2.0 GPA and be in good military standing with the Georgia National Guard during each term loan received
Engineering					
Scholarship for Engineering Education (SEE)	1998	711	$5,250	$17,500	$3,500 forgiven for each year employed as engineer in Georgia[6]
Scholarship for Engineering Education for Minorities (SEEM)	2016	275	$5,250	$15,750	
Public Service Employees					
Student Access Loans (SAL)	2012	13,966[7]	$8,000	$36,000	Work one year in a state or local governmental entity for each year loan received

[1] Active borrowers is as of June 30, 2017, and includes all individuals with a balance, including those in school, deferment, or repayment (service or cash).

[2] The annual award amounts for GMS and SSS vary based on tuition. Amounts listed for GMS and SSS are the FY17 average disbursement multiplied by the number of allowed terms (two for GMS and three for SSS). Annual amounts for the other programs are stipulated in GSFA regulations.

[3] For GMS and SSS, this is the annual amount multiplied by four and two years, respectively. Maximum amounts for the other programs are stipulated in GSFA regulations.

[4] GMS recipients are provided loan forgiveness for service in the Army National Guard only, while SSS recipients' loans are forgiven for service in the Air or Army National Guard.

[5] Program was not funded fiscal years 2010 through 2016.

[6] SEE recipients must receive engineering degree from Mercer to qualify for service cancelation.

[7] As detailed on page 38, a small percentage of SAL borrowers have utilized service cancelation.

Source: Agency documents

Recipients of in-school program awards may repay loans with cash or service. Most programs require service after leaving school, but the Georgia National Guard Service Cancelable Loan's service requirement is completed at the end of the award term. Those who do not complete their service obligation must repay funds with interest (1% for SAL; prime plus 1% for engineering scholarships and GNGSCL; and 8% for the National Guard scholarships). For recipients who do complete their service obligation, the annual amount forgiven varies by program. The National Guard scholarships and SAL forgive one year of loans for each year of service. The engineering scholarships forgive $3,500 per year of service, though recipients can borrow up to $5,250 per year.

On-the-Job Programs

As shown in **Exhibit 2**, Georgia's on-the-job loan forgiveness programs are targeted to medical professionals and large animal veterinarians. Maximum amounts per recipient range from $40,000 for physician assistants and advanced practice registered nurses to $100,000 for physicians and dentists.

Exhibit 2
Georgia's On-the-Job Loan Forgiveness Programs Have Fewer Active Borrowers

Program	Created	Active Borrowers	Annual Amount	Max Amount	Service Requirement
Medical Professionals					
Physicians, Dentists, Physician Assistants, and Advanced Practice Registered Nurses for Rural Areas Assistance Act Program[1]					
Physicians	1989	44	$25,000	$100,000[2]	One year practicing in rural counties with populations below 35,000 or a qualifying state facility[3], and actively treat Medicaid patients
Dentists	2016	8	$25,000	$100,000	
Advanced Practice Registered Nurses (APRN)	2017	10	$10,000	$40,000	
Physicians Assistants (PA)	2017	10	$10,000	$40,000	
Large Animal Veterinarians					
Veterinary Loan Repayment Program	2017	5	$20,000	$80,000	One year practicing in rural counties with populations below 35,000

[1] This is one program in statute, comprised of components for each workforce listed.

[2] The maximum amount is based on a recipient receiving four awards. Physicians working in Health Professional Shortage Areas in approved specialties can receive up to an additional four awards under a jointly funded federal/state program. However, of the 135 recipients between 2006 and 2016, two received $150,000 and 133 received less than $100,000.

[3] Hospitals and facilities operated by the Georgia Department of Public Health, Department of Corrections, Department of Juvenile Justice, or Department of Behavioral Health and Developmental Disabilities.

Source: Agency documents

All on-the-job programs grant annual awards and require that recipients reapply for subsequent awards. The Rural Areas Assistance Program for medical professionals pays awards upon contract signing and requires those who do not to complete the service obligation to repay twice the award amount. According to GBPW officials, however, few defaults have been identified. Veterinarian Loan Repayment Program awards are paid at the end of the service obligation period, there is no penalty for non-compliance; the award is not granted if the service obligation is not met.

In addition to the programs above, there are several loan forgiveness programs that are not funded. For example, O.C.G.A. 20-3-374 authorizes GSFA to make service cancelable educational loans to residents in Georgia enrolled in certain medical programs and other critical shortage fields identified by the agency, if funding is available. The agency previously received appropriations for three in-school loan forgiveness programs for students willing to teach in critical shortage fields. Funding for one of these programs ended in 2007 and the other two in 2010.

Financial Information

As shown in **Exhibit 3**, loan forgiveness program funding increased by 64% between fiscal years 2015 and 2018. Funding for Georgia National Guard programs increased by 75%, primarily due to Georgia National Guard Service Cancelable Loan, while medical-related program funding increased by 62% due to the addition of funding for dentists, advanced practice registered nurses, and physicians assistants.

Exhibit 3
Loan Forgiveness Program Funding Increased by 64%, Fiscal Years 2015-2018

Program	FY 2015	FY 2016	FY 2017	FY 2018	% Change 2015-2018
Georgia National Guard					
University of North Georgia Military Scholarship	$2,240,940	$2,833,976	$3,037,740	$3,037,740	36%
Georgia Military College State Service Scholarship	$1,162,611	$1,203,240	$1,203,240	$1,203,240	3%
Georgia National Guard Service Cancelable Loan	$0	$0	$100,000	$1,700,000[1]	N/A
Total	**$3,403,551**	**$4,037,216**	**$4,340,980**	**$5,940,980**	**75%**
Engineering					
Scholarship for Engineering Education	$924,000	$1,029,000	$1,060,500	$1,060,500	15%
Scholarship for Engineering Education for Minorities (SEEM)	$0	$2,700,000[2]	$0	$0	N/A
Total	**$924,000**	**$3,729,000**	**$1,060,500**	**$1,060,500**	**15%**
Medical					
Rural Areas Assistance Program[3]					
Physicians[4]	$1,130,000	$1,180,000	$1,130,000	$1,130,000	0%
Dentists	$0	$200,000	$200,000	$300,000	N/A
Advanced Practice Registered Nurses and Physician Assistants	$0	$0	$200,000	$400,000	N/A
Total	**$1,130,000**	**$1,380,000**	**$1,530,000**	**$1,830,000**	**62%**
Other					
Student Access Loan (Public Service)[5]	$0	$0	$0	$0	N/A
Veterinary Loan Repayment	$0	$0	$100,000	$100,000	N/A
Grand Total	**$5,457,551**	**$9,146,216**	**$7,031,480**	**$8,931,480**	**64%**

[1] GSFA directed $1.5 million of its funds to the Georgia National Guard Service Cancelable Loan Program in FY18. The General Assembly appropriated $200,000 to the program. According to agency officials, state funds will be expended first. Any GSFA funds not expended on GNGSCL in FY18 will be returned to GSFA. As of October 2017, $295,983 had been expended on 141 GNGSCL loans issued.

[2] GSFA directed $2.7 million of its funds to the new SEEM program in FY16. SEEM will continue until those funds are exhausted. GSFA expended $490,881 and $614,177 in FY16 and FY17, respectively.

[3] While one program, separate funding is provided for physicians, dentists, advanced practice registered nurses, and physician assistants.

[4] Includes funding for a physician scholarship program which is being phased out with the last payments to be made in FY18. All scholarship funds have been reallocated to the physician loan repayment program.

[5] Between $20 and $29 million annually has been appropriated to Student Access Loans since FY12, but a negligible amount has been forgiven though service.

Source: Appropriations Acts and agency documents

A significant portion of the increase is due to one-time or time-limited funding made available through the use of GSFA's excess revenue recognized in prior years. SEEM is limited to $2.7 million (awarded until funding is exhausted), while $1.5 million of the Georgia National Guard Service Cancelable Loan's fiscal year 2018 amount is one-time GSFA funding.

The majority of loan forgiveness funds are for military-related programs. In fiscal year 2018, approximately 67% of funds are allocated for National Guard programs, 20% for medical-related programs, and 12% for engineering-related programs.

Georgia's loan forgiveness programs are primarily financed with state appropriations, though federal and other funds are also utilized. GSFA funds[4] have supplemented state funding for multiple service cancelable loans. The Scholarship for Engineering Education for Minorities has been funded with GSFA funds since its creation in fiscal year 2016. In addition, GSFA funds accounted for 17% ($482,723 of $2.8 million) of the University of North Georgia Military Scholarship in fiscal year 2016 and 88% ($1.5 of $1.7 million) of the Georgia National Guard Service Cancelable Loan in fiscal year 2018. Approximately 5% ($100,000 of $1.83 million) of the Rural Area Assistance Program is funded by a federal grant.

In addition to the amounts shown in **Exhibit 3**, there are administrative costs associated with the programs. GBPW was appropriated approximately $1.2 million for administrative costs in fiscal year 2018, though this covers expenses related to all GBPW programs. GSFC does not receive state appropriations for administrative costs associated with service cancelable loan programs, though state law authorizes GSFA to retain cash payments received from students who do not complete their service obligation, resulting in approximately $300,000[5] annually that is applied to administrative costs.

[4] GSFA funds include excess revenue recognized in prior years.

[5] This includes cash repayment receive for SEE, GMS, and SSS only. Cash repayments for SAL are used to supplement state appropriations for SAL awards.

Findings and Recommendations

Not all loan forgiveness programs were created to address a shortage within an occupation or field. Those that are created to address a shortage are not always well targeted and their need is not routinely assessed.

While loan forgiveness programs are generally used to recruit and retain individuals to fields or occupations, the policy goals are not clear for all of the state's programs. Many are intended to address a shortage of workers, though others appear to have a primary purpose related to supporting a school's mission, students with certain interests, or individuals providing public service. Those programs that are intended to address a shortage are not always adequately targeted for that purpose, and some are not assessed to determine if they are still needed.

Incentivizing individuals to enter specific fields of study or occupations through service cancelation is generally associated with addressing a shortage within those areas; however, it does not appear that each of the state's loan forgiveness programs were created for that purpose. If a program is intended to address a shortage, the purpose must be clear so that an assessment of its success and continued need can be routinely performed. We identified the following purposes for the state's loan forgiveness programs and whether a shortage in the targeted occupation exists.

- **National Guard** – State law (O.C.G.A. 20-3-420) indicates that the University of North Georgia Military Scholarship (GMS) program is partly intended to recognize the nature of the school, while appropriations acts state that the purpose of both the GMS and Georgia Military College State Service Scholarship (SSS) programs is to provide scholarships to outstanding students and strengthen the Georgia National Guard. The Georgia National Guard Service Cancelable Loan (GNGSCL) is intended to be an incentive for joining the National Guard and to retain citizens in the state. There is no clear indication that the programs were created or funded to address a shortage of National Guard soldiers or officers.

  The Georgia Army National Guard routinely meets its annual goals for officer recruitment and authorized strength, while the Air National Guard has missed its authorized strength level in 2016 and 2017. The GMS program is limited to the Army National Guard, while award recipients in the other two programs (SSS and GNGSCL) may join either the Army or Air National Guard.

- **Medical** – State law (O.C.G.A. 31-34-2) clearly indicates that the Rural Areas Assistance Program is intended to increase the number of physicians, dentists, advance practice registered nurses, and physician assistants in rural, underserved areas of the state.

  The state does have a shortage of primary care providers and dentists in certain parts of the state; however, the highest-need rural areas do not always align with GBPW's geographic restriction of eligibility to counties with populations below 35,000. Statistical data to better define eligible, high-need locations is available.

- **Engineering** – GSFA regulations note that the Scholarship for Engineering Education (SEE) and the Scholarship for Engineering Education for Minorities (SEEM) are intended to create and retain engineers for the state. It is not clear if addressing a shortage of engineers was the reason for the creation of the two programs.

  While engineering has been identified as a high-demand occupation, it is not clear based on the number of projected openings and the number of annual graduates that there is actually a statewide shortage. If there is a specific engineering field or region of the state with a shortage, neither program is designed to target that specific need. There is an underrepresentation in engineering of women and many of the minority groups targeted by SEEM.

- **Veterinarian** – While state law does not clearly indicate that addressing a shortage was the reason for the creation of the Veterinary Loan Repayment Program, GDA officials confirm that a shortage of large animal veterinarians was the basis for the 2011 legislation.

  The state does appear to have a shortage of large animal veterinarians in certain regions. State law restricts awards to veterinarians working in counties with populations below 35,000, but agency analyses indicate that many eligible counties do not have a shortage and that some rural, ineligible counties (with more people and large animals) have a greater need.

- **Public Service** – The Student Access Loan has a service cancelation option similar to an option available for certain federal loans. GSFA officials indicate that the option was not created to address a shortage of public sector workers.

  While some agencies may have difficulty recruiting or retaining for particular professions, the option was not designed to address such specific needs.

For those loan forgiveness programs that are intended to address a shortage, there is not always an entity responsible for assessing whether a workforce need exists. O.C.G.A. 49-10-3 requires that GBPW identify underserved areas of the state with unmet needs for physicians and health care professionals, but programs administered by GSFA are less likely to have an entity responsible for assessing their continued need. These programs exist because either the General Assembly or the Governor's Office Planning and Budget has directed funding to them, not due to a workforce need identified by the agency. While O.C.G.A. 20-3-374 gives GSFA authority to establish service cancelable loans in fields that it determines to have a critical personnel shortage, officials indicated that the agency does not receive funding to assess workforce needs for new or existing programs.

RECOMMENDATIONS

1. The General Assembly should ensure that legislative intent is clear for all loan forgiveness programs.

2. For those programs intended to address a shortage, the General Assembly should assign responsibility to an appropriate entity for periodically assessing whether the shortage continues to exist.

The state's loan forgiveness programs have increased the number of individuals within targeted occupations or geographic areas, but opportunities for increased effectiveness exist.

State-funded loan forgiveness programs have contributed to the recruitment and retention of individuals to targeted occupations or areas. However, like many incentive programs, they make awards to individuals who do not achieve the desired outcome and to individuals who would have achieved the desired outcome without program assistance. Each program should better assess their impact and consider available options to enhance their effectiveness.

As discussed in greater detail in the program findings starting on page 13, our analyses of impacts are limited to the four programs that have been funded each of the last five years. This includes three in-school programs (University of North Georgia Military Scholarship, Georgia Military College State Service Scholarship, and Scholarship for Engineering Education) and one on-the-job program (Rural Areas Assistance Program for Physicians).

As shown in **Exhibit 4**, the percentage of recipients achieving the desired outcome ranges from 27% to 44% for in-school programs, compared to 100% of recipients in the on-the-job program. As the percentage of recipients achieving the desired outcome decreases, the cost per successful outcome increases. As expected, the length of time between award and completion of service requirement impacts the likelihood of the desired outcome being met. For the two National Guard programs, most recipients either did not commission (GMS) or did not graduate (SSS). For SEE, most students did not graduate as an engineer or chose to work outside of Georgia. By contrast, all physicians met their commitment, given that they were employed in rural Georgia when applying for the award and only needed to complete a one-year commitment.

Exhibit 4
On-the-Job Loan Forgiveness Program has Highest Success Rate, Fiscal Years 2007 - 2011 Cohorts

	In-School Programs			On-the-Job Program
	GMS	**SSS**	**SEE**	**RAAP**
Recipients	199	194	324	65
Expenditures[1]	$5,931,779	$4,794,069	$2,049,975	$2,610,000
Average per Recipient	$29,808	$24,712	$6,327	$40,154
Desired Outcome	**Commission as National Guard Officer[2]**	**Graduate and Serve in National Guard[3]**	**Work as Engineer in Georgia**	**Practice in Rural Area**
% Achieving	27%	43%	44%	100%
# Achieving	54	82	141	65
Cost per Outcome	**$106,693**	**$58,133**	**$14,539**	**$40,154**

[1] Disbursements less cash repayments and funds received through GSFA's sale of loans to other lender.

[2] Although GMS recipients are allowed to repay loans with service in the Army National Guard without commissioning as an officer, Department of Defense officials indicated the intent of the program is to develop lieutenants (i.e., commissioned officers).

[3] SSS recipients are allowed to repay loans with service even if they do not graduate from GMC. However, Department of Defense officials indicated the intent of the program is to develop better educated soldiers.

Source: Analysis of GSFA and GBPW data

Recruitment and Retention

Loan forgiveness programs can attract individuals to a particular profession or geographic area, but they cannot identify and exclude individuals who would have performed the desired service without an award. As a result, awards may be given to a significant number of individuals who were not actually recruited to the service by the program.

Our analysis found that each program influenced some recipients to achieve the desired outcome.[6]

- Recipients of the University of North Georgia Military Scholarship (GMS) and the Georgia Military College State Service Scholarship (SSS) were more likely to meet their six-year commitment to the Georgia National Guard than non-recipients. In addition, 42% of SSS recipients and 71% of GMS recipients who responded to our survey reported that the award had a significant influence on their decision to join the Georgia National Guard. Finally, of GMS applicants who did not receive the award, fewer than 40% eventually enlisted, compared to 100% of those who received the award. Given that a significant portion of responding GMS recipients joined the National Guard as a result of the award, it is reasonable to assume that a portion of the GMS commissions can be attributed to the scholarship.

- Approximately 37% (11 of 30) of physician loan repayment recipients who responded to our survey stated the program significantly influenced their decision to practice in rural areas. While the number of responses was relatively low, the percentage is similar to that found in a recent analysis of a similar program in Oregon. The Oregon study also found that recipients who already planned to locate in rural areas stayed longer as a result of the award. We found that award recipients were more likely than non-recipients to be treating Medicaid patients in rural Georgia five years after the award.

- The Scholarship for Engineering Education (SEE) had a relatively small recruiting effect on the respondents to our survey. Just 6% and 29% of survey respondents indicated they were significantly influenced by the program to major in engineering and work in Georgia, respectively. Recipients were more likely than non-recipients to work and stay in Georgia.

Opportunities for Increased Effectiveness

Several factors impact the recruiting and retention effects of loan forgiveness programs, including marketing, program design, award amounts, and penalties. We also found that agencies were not assessing whether the programs were meeting the stated intent.

- **Marketing** – Some programs acknowledged that their marketing efforts were limited. This can result in the only individuals knowledgeable of the program being those who are already providing or planning to provide the desired service. For example, GBPW received the exact number of applications to match available funds for dentists, physician assistants, and advanced

[6] See pages 43 and 44 for details on survey methodology and response rate.

practice registered nurses in fiscal year 2017. In multiple years, it has had to re-open the application period for physicians.

- **Location Requirement** – The on-the-job programs require applicants to be employed in the desired geographic area prior to receiving the award. Because individuals must be willing to work in the targeted areas without the incentive, the programs' influence on the recipient's action is limited. Allowing applicants a period of time (e.g., three months) to secure employment or open a practice could open programs to providers who would not otherwise locate in the area.

- **Award Amounts** – Higher award amounts would likely positively impact a program's recruiting effect. The award amount in relation to the recipient's income must be considered. A $10,000 award to an individual in a profession typically paying $80,000 could be more impactful than a $20,000 award to an individual making $250,000.

  In Georgia, the GMS program has the highest in-school award amount and recipients are most likely to complete their service obligation. Approximately 77% of GMS recipients repay their loans with service, compared to 64% and 44% for SSS and SEE recipients, respectively. The higher the award amount, the more that must be repaid if the service requirement is not met. Higher award amounts do not necessarily require additional funding. Fewer, but higher award amounts, may be more impactful than a large number of small awards.

- **Penalties** – In-school programs with harsher penalties are likely to have better rates of service completion. One evaluation of state-funded loan forgiveness programs for physicians found that recipients of awards with very high penalties were 32% more likely to complete their service obligation than those with lower penalties (80.3 to 48.6%).

  Interest rates for Georgia's in-school programs may not be high enough to be a major deterrent to abandoning the service requirement. SEE has an interest rate of prime plus one percent (approximately 5.25% in August 2017) and the National Guard scholarships have a rate of 8%. Both are in line with federal undergraduate student loan interest rates, which ranged from 4.45% to 7% in August 2017. By comparison, a recently eliminated in-school loan forgiveness program for medical students imposed a penalty of twice the award amount for failing to complete service.

- **Performance Measurement** – Not all programs adequately determine whether they are meeting program goals. GBPW measures whether medical professionals complete their one-year commitment but not if the program is impacting the neediest areas of the state. The two National Guard scholarship programs measure the percentage of recipients completing service completion but not whether recipients commission as officers (GMS) or graduate (SSS)—program goals stated by the Georgia National Guard.

  While GBPW has clear responsibility for assessing its programs, no assignment of responsibility has been made for those programs for which

GSFA makes the awards. Depending on the program, appropriate parties to assess the programs' effectiveness may include GSFA staff, the State Veterinary Education Board, various universities and colleges, or the Georgia National Guard.

RECOMMENDATIONS

1. Officials should consider whether their loan forgiveness programs would benefit from improved marketing, program design changes, higher award amounts, and higher penalties. When necessary, program officials may need to seek statutory changes.

2. The General Assembly should clarify the entity responsible for assessing the performance of each loan forgiveness program.

GSFA Response: *GSFA agreed that the "responsible entity could be further clarified in regards to assessing the performance of the programs, but the entity ultimately identified should also be given further clarification of program intent."*

Program Findings

Physicians, Dentists, Physician Assistants, and Advanced Practice Registered Nurses for Rural Areas Assistance Act Programs

While there is a shortage of medical professionals in areas of the state, program criteria does not ensure the neediest rural counties are eligible and prioritized for funding.

Shortages do exist in parts of Georgia for those medical professionals targeted by the Georgia Board for Physician Workforce's (GBPW) loan repayment program. However, these shortages do not always align with GBPW's restriction of awards to counties with populations below 35,000. As a result, providers in some high-need counties are disqualified from the loan repayment program while those in some lower-need counties are eligible.

Shortage of Targeted Occupations Does Exist

Much of rural Georgia has been designated by the U.S. Health Resources and Services Administration (HRSA) as a Health Professional Shortage Area for both primary medical care and dental care. The designation indicates that the area has a shortage of medical professionals. In addition, a 2016 HRSA report found that Georgia's demand for primary care physicians exceeded supply by 760 in 2013 and that the shortage would grow to 1,310 by 2025. Likewise, the report found that in 2013 the demand for Primary Care Nurse Practitioners and Physician Assistants exceeded supply by 130 and 40, respectively. Although the supply of Primary Care Nurse Practitioners and Physician Assistants is expected to exceed demand by 2025, it is unclear if these professionals will be adequately distributed throughout the state. A 2016 HRSA report on dental coverage found that Georgia had a provider shortage of 280 in 2012 that would grow to 386 by 2025.

Program Could Better Target Awards

In determining rural underserved areas for the medical provider loan repayment program, GBPW is directed by state law (O.C.G.A. 31-34-5) to consider relevant statistical data, including the ratio of providers to population, health status, and poverty levels. However, according to GBPW officials, for more than 15 years GBPW's geographic eligibility has been based solely on population. GBPW requires that applicants practice full-time in a county with a population less than 35,000, which resulted in 109 eligible counties in 2017. A county's supply of providers, health outcomes, or poverty levels are not considered. (GBPW does consider the health outcomes of the county when prioritizing applications for award.)

Other organizations use methods that better define underserved areas eligible for loan forgiveness. The health professional loan repayment program operated by the federal government—the National Health Service Corps—requires that applicants be employed in a Health Professional Shortage Area (HPSA). The HPSA designation for a county[7] primarily considers population to provider ratios, the percentage of population below 100% of the federal poverty limit, and travel time to the nearest

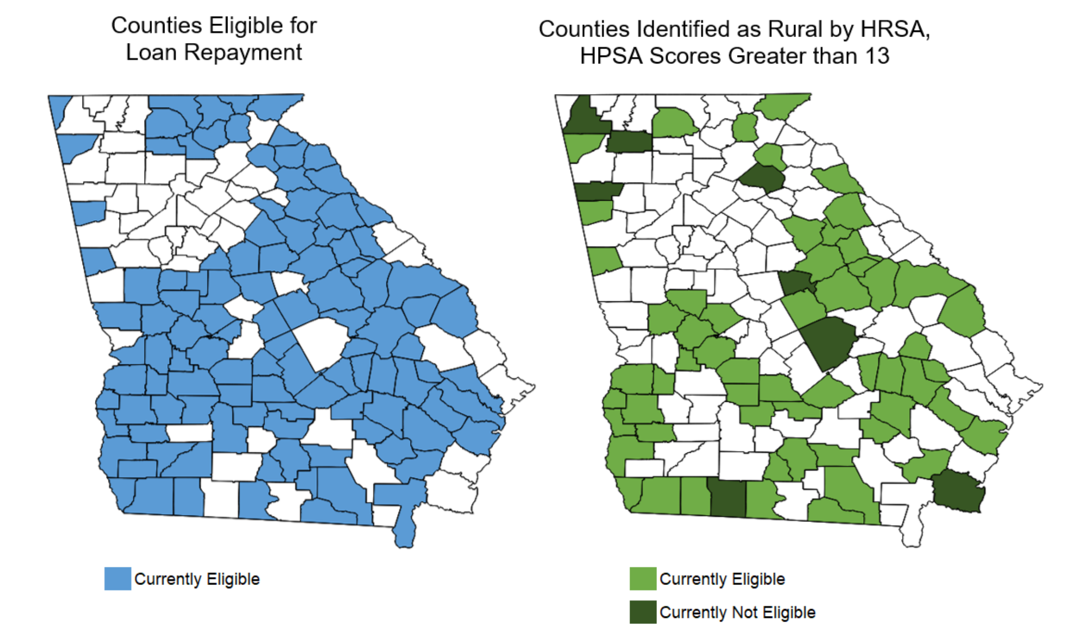
[7] HPSAs can be designated county-wide and for individual facilities (e.g., federally qualified health center, non-profit medical facility), and for primary medical care, dental, or mental health providers.

source of care outside HPSA designation. In addition to the federal government's method of defining underserved areas, our review of loan repayment programs in nine other states found none that rely solely on population to define underserved areas.

Limiting eligibility solely on population does not target funds to the neediest rural counties. Counties designated as a HPSA receive a score that ranges from 0 to 25 for primary care and 0 to 26 for dental care, with higher scores representing higher need. As discussed below, a comparison of rural counties' HPSA scores[8] and the program's eligibility requirement found that needy rural counties are excluded and counties with less relative need are eligible for program awards.

- **Primary Care** – As shown in **Exhibit 5**, 109 counties are currently eligible for awards. Eight other rural counties have HPSA scores above 13 but are not currently eligible due to a population above 35,000. Of the 109 eligible counties, five are not HPSAs and 33 have a HPSA score of 13 or less.[9]

Exhibit 5
Primary Care Eligibility Includes Counties with Low HPSA Scores and Excludes Rural Counties with High HPSA Scores



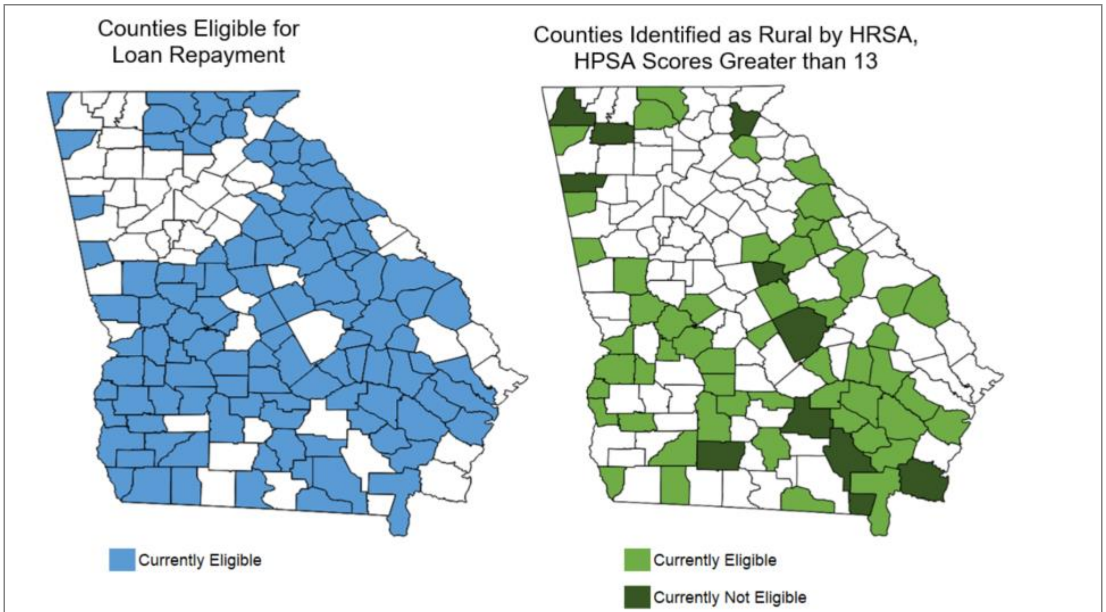
Source: DOAA Analysis of GBPW and federal HPSA data

- **Dental Care** – As shown in **Exhibit 6**, 109 counties are currently eligible for awards. Ten other rural counties have HPSA scores above 13 but are not currently eligible due to their populations. Of the 109 eligible counties, 15 are not HPSAs and 30 have a HPSA score of 13 or less.

[8] For this analysis, we used counties designated as rural by the Federal Office of Rural Health Policy.

[9] The National Health Service Corps gives priority consideration to applicants in HPSAs with scores of 26 to 14, in descending order.

Exhibit 6
Dental Eligibility Includes Counties with Low HPSA Scores and Excludes Rural Counties with High HPSA Scores



Source: DOAA Analysis of GBPW and federal HPSA data

The current eligibility criteria have led to physician loan repayment awards that are not directed to the highest need counties.[10] Between fiscal years 2006 and 2017, Georgia made 281 awards to 144 physicians in 70 counties. One physician was located in one of the eight highest-need counties (HPSA score above 19). Four physicians worked in a county not designated as a HPSA and 53 physicians were in counties with a HPSA score below 14.[11]

RECOMMENDATIONS

1. GBPW should revise the geographic requirement to ensure that program funds are targeted toward the highest-need rural areas.

GBPW Response: *GBPW noted that "the Board is looking at how we award loan repayment to healthcare providers in specific rural counties. The Board is considering other criteria such as a tiered approach (based on county needs), HPSA scores and considerations other than population of a county. After review of this information, the Board may propose changes on how applications are ranked for loan repayment."*

[10] Because dentists, advanced practice registered nurses, and physician assistants were recently added to the Program, we did not conduct a similar analysis for these professions.

[11] It is possible that physicians worked for a facility with a higher HPSA score than that of the county-wide designation.

Georgia's loan repayment program has recruited physicians to rural areas, and these physicians have slightly higher retention rates than non-program physicians. However, opportunities exist for increased effectiveness.

Because dentists, APRNs, and PAs were recently funded, our analysis of recruitment and retention is primarily focused on physicians.

GBPW's loan repayment program has attracted physicians to rural areas of the state and these award recipients were more likely to remain in rural areas than non-recipients. Both of these findings are consistent with published research of similar programs. While the program has had a positive impact, we found that the GBPW could improve the marketing of the program and better assess its effectiveness. Also, GBPW should consider additional changes to the program design that would likely improve its appeal to potential applicants.

Recruitment

Research indicates that loan repayment can be an effective tool for recruiting medical professionals to rural areas. A 2016 Lewin Group evaluation of the National Health Service Corps' (NHSC) Loan Repayment Program in Oregon found that 32% (20 of 64) of NHSC participants were attracted to serve in rural areas only because of the loan repayment incentive. These physicians spent an average of 4.9 years in rural Oregon, including 2.6 years under obligation and 2.3 years after their obligation. Each month these physicians practiced in the region was attributed to the program. Therefore, despite being only one-third of award recipients, Lewin concluded that these 20 physicians generated 99 annual full-time equivalent (FTE) years, none of which would have occurred without the program.

While responses were limited, our survey of award recipients produced similar results.[12] Approximately 37% (11 of 30) of recipients who responded to our survey stated that the program had a significant influence on their decision to practice in rural Georgia. Of those who were not significantly influenced by the program, two that we spoke with had already fulfilled a service obligation for scholarships or the NHSC before they applied for Georgia's physician loan repayment program. Others stated they chose to practice in a rural area because it was the best offer they received, they prefer rural communities, or they desired to be close to family.

It should be noted that the design of Georgia's program may make it a less effective recruiting tool than the NHSC. Because NHSC awards are prioritized based on Health Professional Shortage Area (HPSA) scores, potential NHSC applicants can gauge the likelihood of receiving an award before they accept a position. For example, applicants who accept a position in a HPSA with a score of 24 can be relatively confident that they will be selected for loan repayment. No such transparency in applicant selection exists in Georgia's loan repayment program.

Retention

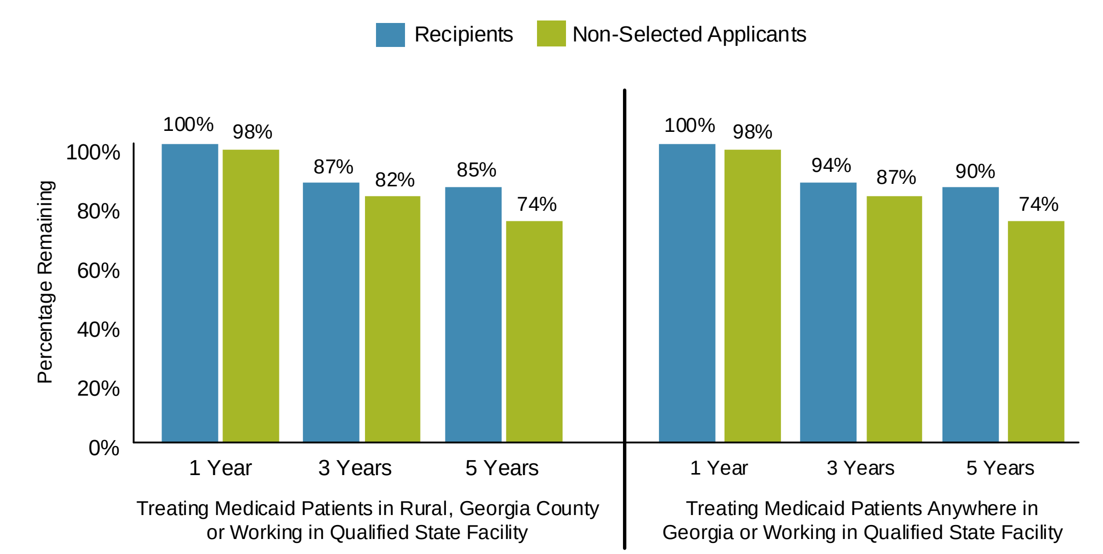
The retention analysis in the Lewin Group's 2016 evaluation, which was limited to the subgroup of recipients (44 of 64) who would have located to rural areas without the incentive, found that program participants practiced in rural areas for an average of nine months longer than non-participants. Therefore, although the incentive did not have a recruiting effect on the subgroup, FTE years were gained as a result of the

[12] See page 43 for details on survey methodology and response rate.

awards. Specifically, Lewin estimated an additional 32 FTE years were gained by these 44 physicians.

Although we were unable to isolate the program recipients who would have practiced in rural Georgia without the incentive, we found slightly higher retention of participants when compared with non-selected applicants. As shown in **Exhibit 7**, award recipients were more likely to remain in a rural county or qualifying state facility.[13] The difference in retention was 2% at year one, 5% at year three, and 11% at year five. Retention of award recipients who leave rural counties but continue to serve Medicaid patients in other Georgia counties was also higher than non-recipients. Recipients' retention rates were 2%, 7%, and 16% higher in years one, three, and five, respectively. This indicates that non-selected applicants are more likely to leave the state or choose not to serve Medicaid patients.

Exhibit 7
Loan Repayment Recipients More Likely to Continue Serving Medicaid Patients in Georgia, Fiscal Years 2008-2015



Source: DOAA analysis of GBPW, Medicaid claims, and state personnel data

Opportunities for Increased Effectiveness

While Georgia's physician loan repayment program has positively impacted recruitment and retention in rural areas, opportunities exist to improve effectiveness. Improved marketing and modifications to program design could improve the program's potential to encourage applications from individuals who would otherwise not locate in rural Georgia. In addition, new performance measures would allow officials to determine if the program is achieving its purpose.

---

[13] Recipients are required to serve Medicaid patients in counties with populations below 35,000 or practice in a qualified state facility. Therefore, these were the parameters by which we measured retention. Qualified state facilities include hospitals and facilities operated by the Georgia Departments of Public Health, Corrections, Juvenile Justice, or Behavioral Health and Developmental Disabilities.

- **Marketing** – Some practitioners may be unaware of the loan forgiveness program. In our survey of recently licensed physicians, 9 of 25 respondents (36%) were unaware of the program. In addition, GBPW re-opened the application window for physicians in fiscal years 2016 and 2017 because it did not initially receive enough qualified applicants to fill all available slots. GBPW also did not receive more applications than slots available for dentists, advanced practice registered nurses, or physician assistants in fiscal year 2017.

  In its review of Oregon's loan repayment program, the Lewin Group recommended administrators increase awareness of incentives. It noted that some providers may be induced to serve in rural areas if they are aware of the incentives available, and that easy access to program information may help attract physicians who would not have gone to rural areas in absence of the program.

- **Program Design** – Our review of loan repayment programs for medical professionals in eight other states identified program design elements that have the potential to increase effectiveness. These include higher award amounts, longer contracts, community matching requirements, and relaxed job requirements as a pre-condition to application.

  - **Higher Award Amounts** – Seven of the programs reviewed have higher maximum award amounts. According to GBPW officials, Georgia's annual award for physicians of $25,000 has not increased in more than 15 years, while medical school costs have increased significantly. Higher award amounts that represent a higher portion of providers' salary could positively impact the recruitment effect of an award.

  - **Longer Contracts** – Seven of the programs require initial contracts of three to four years, whereas Georgia's contracts are for one year only. Longer contracts essentially increase the amount a provider is guaranteed to receive and could have a positive impact on recruitment and retention. It must also be considered that a longer participant commitment could deter other applicants.

  - **Community Match** – Three other states allow or require communities (i.e., hospitals, local governments) to match award amounts. The community match would either allow the state to decrease its individual award amounts (thereby freeing funds for additional awards) or provide applicants with a larger annual loan repayment amount.

  - **Employment Status at Application** – Two other states allow individuals to apply for loan repayment without being employed in a qualified location. To increase the recruitment effect, Lewin recommended that Oregon consider relaxing job requirements as a pre-condition for program application.

    Providing grants to employers to administer loan repayment could achieve a similar effect, as those employers could guarantee awards during the recruitment process. Since fiscal year 2011, GBPW has had authority in state law (O.C.G. A. 31-34-4.1) to use loan repayment funds for grants to hospitals, health care entities, local governments, or civic organizations to enhance recruitment efforts, provided the entities provide matching funds. GBPW has not yet utilized this authority.

- **Performance Measures** – Effective performance measures ensure that efforts are focused on achieving a specific goal. As noted on page 11, GBPW's primary performance measure for its loan repayment program is the extent to which recipients complete their one-year commitment, rather than the extent to which the program is achieving its intended purpose of increasing the number of providers in rural areas. Likewise, the program's statewide performance measures only address the number receiving awards, percentage of qualified applicants approved, and the percentage of recipients still practicing in rural Georgia.

  Incentive programs should be evaluated in terms of the increase in the number of providers in targeted areas as a direct result of the program. Reporting the number of recipients alone can be misleading, since many recipients would have practiced in rural areas without the incentive.

RECOMMENDATIONS

1. GBPW should improve marketing to ensure that all graduating and new medical professionals are aware of available loan forgiveness programs.

2. GBPW should consider design changes such as larger annual award amounts, multi-year awards, and a modification of the requirement that applicants already be employed in the rural area.

3. GBPW should consider providing joint awards with organizations that hire medical professionals. By requiring matching funds from the community, the state would have funds for additional awards or to increase the total award value.

4. GBPW should adopt performance measures that measure the extent to which the program meets its intended purpose of increasing the number of medical professionals in rural areas.

GBPW Response: *Regarding marketing, GBPW noted that "the Board is working on a marketing plan through the Office of Economic Development, professional associations, and medical schools. The Board just released the new GBPW Data Visualization website that will give interested parties detailed information on where there is the greatest need for physicians in the state of Georgia. We also have a social media presence on Twitter and LinkedIn."*

Regarding design changes, GBPW noted that "The Board is currently reviewing other state programs to implement best practices."

GBPW noted it would take the recommendation regarding joint awards with organizations that hire medical professionals under advisement. It also noted that it would use the audit report as a benchmark for tracking and validating program effectiveness.

Veterinarian Loan Repayment Program

While there is a shortage of large animal veterinarians in certain parts of the state, the Veterinarian Loan Repayment Program's statutory criteria does not ensure that the identified shortage areas are eligible for funding.

Although there is a shortage of large animal veterinarians in certain parts of Georgia, these shortage areas do not always align with the statutory restriction to counties with populations below 35,000. State law does not consider other relevant information, such as the number of cattle and swine, in determining counties eligible for awards. As a result, some eligible counties may not be high need and some high-need counties are not eligible.

Shortage of Targeted Occupation Exists

There is a shortage of large animal veterinarians in certain areas of the state. According to the American Veterinarian Medical Association (AVMA), there were 74 counties in Georgia that did not have a veterinary practice devoted to food supply (i.e., large animal) veterinary medicine. The majority of these counties are located adjacent to each other in the southern part of the state, increasing the distance existing veterinarians must travel to support food animal producers.

A federal loan repayment program addressing a shortage of large animal veterinarians has recognized a shortage in Georgia. States are allocated between two and eight nominations for the U.S. Department of Agriculture's (USDA) Veterinary Medicine Loan Repayment Program (VMLRP) based on two factors broadly correlated with demand for food supply veterinary services: (1) livestock and livestock products total sales and (2) land area.[14] Based on these factors, Georgia was allocated seven nominations in fiscal years 2014 through 2016 and six nominations in fiscal year 2017. Only one loan repayment award was granted.

The state law establishing the program does not designate any entity responsible for assessing the continued need for the program. The State Veterinary Education Board and GSFA have responsibilities associated with the award process, but no entity is responsible for periodically assessing whether shortages remain.

Program Could Better Target Awards

O.C.G.A. 20-3-518.4 requires that Veterinarian Loan Repayment Program recipients practice in counties with populations of 35,000 or less. In 2017, this criteria provides eligibility to 69% (109 of 159) of Georgia counties. However, these counties are not always the neediest in terms of large animal veterinarians. According to Georgia Department of Agriculture (GDA) officials, it would be appropriate to consider the number of large animals in particular areas, in addition to population.

For its shortage area nominations to the VMLRP, GDA identified 67 counties as large animal veterinarian shortage areas. In making this determination, officials considered the number of cattle and swine in an area, AVMA veterinarian supply data, as well as

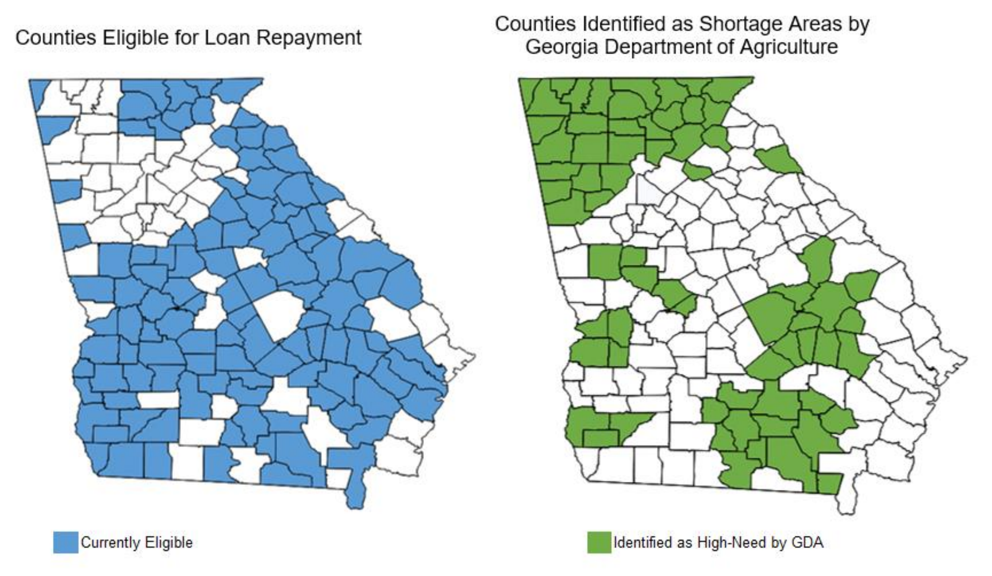
[14] All submitted nominations are evaluated based on the merit of the application and funding available. In fiscal year 2015, 23% (43 of 184) of submitted nominations were approved for funding.

information from veterinarian associations, practicing veterinarians nearing retirement, and cattle and swine producers.

Other organizations also consider the number of large animals and veterinarians in defining underserved areas. Based on a list of veterinarian loan forgiveness programs from the AVMA, we reviewed five states' veterinarian loan repayment programs. In four states, eligible geographic locations are determined by need, including the number of livestock farms and livestock population, the number of veterinarians, and the presence of auction markets, slaughter facilities, or other concentration points.

Limiting eligibility solely on population does not ensure that veterinarians in the neediest rural areas are eligible for funding or that only needy areas are eligible. As shown in **Exhibit 8**, approximately 33% (22 of 67) of counties identified as shortage areas by GDA do not have populations below 35,000, making them ineligible. Conversely, 64 of the 109 counties (59%) eligible for funding were not identified as high need by GDA.

Exhibit 8
Veterinarian Loan Repayment Eligibility Includes Counties Not Identified as Shortage Areas and Excludes Counties Identified as Shortage Areas



Source: DOAA Analysis of Department of Agriculture data

As a result of the criteria, the fiscal year 2017 grant awards included counties with questionable need. GDA granted loan repayment awards to five veterinarians who, combined, practice in 31 eligible counties. Seventeen (55%) of the counties covered by fiscal year 2017 awards were not identified as high need in GDA's fiscal year 2016 or 2017 federal shortage area nominations.[15]

[15] One recipient did not indicate on her application that she practiced in any counties identified as high-need by GDA. Another recipient indicated that he practices only in counties identified as high-need. The other three practiced in multiple counties, including some that were identified as high-need.

RECOMMENDATION

1. The General Assembly should require the Department of Agriculture to periodically determine whether a large animal veterinarian shortage that justifies the program continues to exist.
2. The General Assembly should consider revising state law to allow the State Veterinary Education Board to consider relevant statistical data, including the number of cattle and swine and the number of large animal veterinarians, when determining rural, underserved areas eligible for loan repayment.

GDA Response: *GDA noted "it would welcome the opportunity to provide industry demand assessments for accessibility of food animal veterinarians in Georgia." GDA also stated it "agrees that statistical accounting of livestock populations, coupled with rural community populations, would strengthen medical services for the livestock community."*

The State Veterinary Education Board has not established performance measures to assess the effectiveness of the Veterinarian Loan Repayment Program.

The Veterinarian Loan Repayment Program granted its first awards in fiscal year 2017; therefore, our ability to analyze its effectiveness in recruitment and retention was limited. According to program officials, the program has not yet determined how it will measure its success. Effective performance measures ensure that efforts are focused on achieving a specific goal and are critical to ensuring that programs meet their intended purpose.

In addition, the Veterinarian Loan Repayment Program has similar program design limitations as the loan repayment program for medical professionals (discussed on pages 13 through 19). Specifically, its job requirement as a pre-condition to application and single year awards may limit its recruiting and retention effects.

RECOMMENDATIONS

1. The State Veterinary Education Board should adopt performance measures that measure the extent to which the program meets its intended purpose of increasing the number of large animal veterinarians in rural areas.
2. The State Veterinary Education Board should determine if opportunities identified for the program for medical professionals (see pages 17 through 19) should be considered to maximize the effectiveness of the Veterinarian Loan Repayment Program.

GDA Response: *Regarding performance measures, GDA noted "the State Veterinary Education Board will consider the adoption of specific performance metrics to ensure approved applicants meet the needs of underserved communities." GDA also stated "the State Veterinary Education Board will review provisions of the Georgia physician's loan repayment program to determine if enhancements can be implemented."*

Georgia National Guard Programs

The Georgia National Guard loan forgiveness programs were not created specifically to address a shortage.

Unlike other state-funded loan forgiveness programs, two of the three National Guard programs were not created primarily to address a shortage of National Guard members. While all three programs are expected to assist the National Guard in meeting its need for enlisted soldiers and commissioned officers, the scholarship programs have broader purposes associated with enabling individuals to attend Georgia's military colleges and contributing to higher quality soldiers and officers, regardless of the number needed.

The three programs have the following purposes established in state law, appropriations acts, and Georgia Student Finance Authority regulations.

- **University of North Georgia Military Scholarship (GMS)** – O.C.G.A. 20-3-420 states that the purpose of GMS "is to recognize the status of [UNG] and to enable Georgia's most gifted young people who are interested in pursuing a military career to attend this state's premier senior military college under a full scholarship." National Guard officials indicated this program's purpose is to develop commissioned officers for the Army National Guard.

- **Georgia Military College State Service Scholarship (SSS)** – While the SSS is not codified in state law, appropriation acts indicate that its purpose mirrors that of GMS. Recipients must have at least a 2.5 high school grade point average. National Guard officials stated this program's purpose is to develop "better educated, more competent, and more retainable soldiers" for both the Army and Air National Guard.

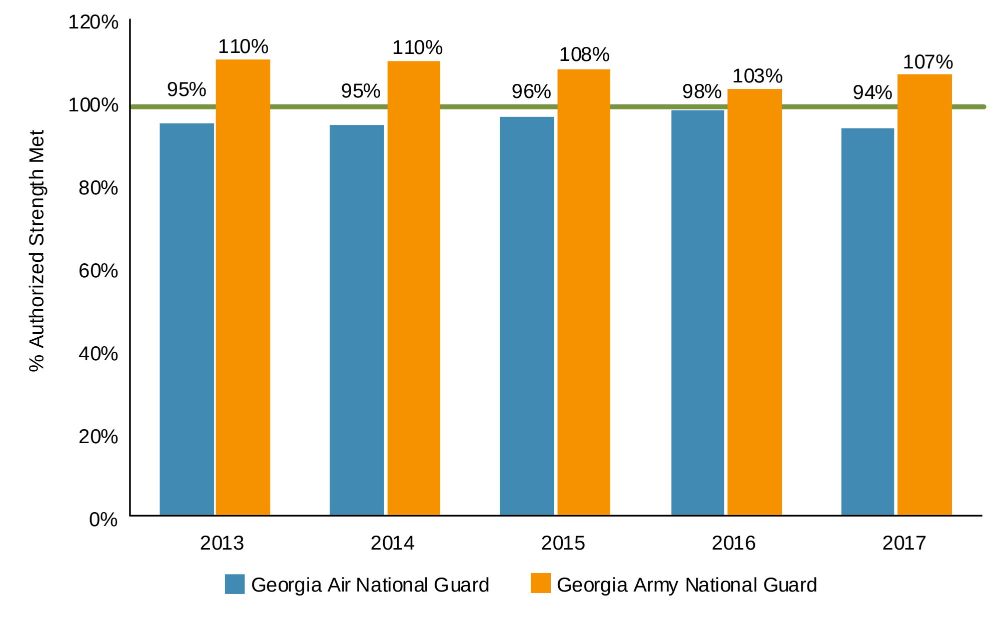
- **Georgia National Guard Service Cancelable Loan** – The Georgia National Guard Service Cancelable Loan does not have a specific purpose in state law or appropriation acts. GSFA regulations state the program "was established as an incentive for qualified young men and women to join the Georgia National Guard and to retain skilled, productive citizens within the state." National Guard officials indicated this program is an important recruiting and retention tool for the Army and Air National Guard.

While the loan forgiveness programs are not primarily designed to address the need, Georgia is obligated to recruit and retain a particular number of soldiers and officers. The National Guard Bureau (NGB) requests a specific number of soldiers and officers from each state to meet the federal need. This is referred to as authorized strength. When states are unable to meet their authorized strength, NGB asks other states to fill the deficit—this new authorized number is referred to as End Strength.

Georgia's Army National Guard has met authorized strength requirements in recent years, while the Air National Guard has had a shortage. As shown in **Exhibit 9**, Air National Guard met between 94-98% of its authorized strength in fiscal years 2013 through 2017. During the same period, the Army National Guard exceeded its requirements by 3-10%. In fiscal year 2017, the authorized strength for the Army

National Guard was 10,174 and it had 10,845 assigned, while the Air National Guard's authorized strength was 2,895 and it had 2,713 assigned.

Exhibit 9
Shortage Exists in Air National Guard Only, Fiscal Years 2013-2017



Source: DOAA analysis of Georgia Department of Defense data

The vast majority of loan forgiveness program recipients join the Army National Guard. Specifically, 93% (462 of 498) of SSS recipients who enlisted in 2006 through 2016 and 61% (17 of 28) of fiscal year 2017 Georgia National Guard Service Cancelable Loan recipients were members of the Georgia Army National Guard. As previously noted, GMS recipients must satisfy their service obligation in the Army National Guard.

To varying degrees, recipients of Georgia's loan forgiveness program awards are more likely to enlist and remain in the Georgia National Guard. While they may meet the required service obligation, many scholarship recipients do not graduate or commission as officers.

Georgia National Guard (GNG) loan forgiveness programs appear to positively impact the recruiting and retention of GNG members. However, many recipients do not achieve the GNG's stated purpose for the programs, such as graduating from college or commissioning as officers.

Recruitment

The extent to which Georgia's National Guard loan forgiveness programs recruit individuals to join the National Guard varies. Of the three programs, GMS appears to have the strongest recruiting effect. The SSS appears to have a stronger influence on decisions to attend Georgia Military College than decisions to join the National

Guard.[16] Because individuals must be active in the National Guard to apply for the Georgia National Guard Service Cancelable Loan and were not guaranteed the award due to limited funding in fiscal year 2017, its recruiting effect was likely limited.

Because the Georgia National Guard Service Cancelable Loan was not funded between 2010 and 2016, our analysis of recruitment and retention is primarily focused on the GMS and SSS programs.

- **Georgia National Guard Service Cancelable Loan** – In its first year funded since fiscal year 2009, the recruiting effectiveness of the program was limited. A majority of recipients, 93% (26 of 28), joined the National Guard before the program was re-funded. In addition, 78% (102 of 130) of fiscal year 2017 applicants for the loan were denied due to a lack of funds. However, $1.5 million from GSFA funds and an additional $100,000 in state funds were added to the program in fiscal year 2018, which could increase its recruiting effect.

- **Georgia Military College (GMC) State Service Scholarship (SSS)** – While the program convinced some survey respondents to join the Georgia National Guard, it had a stronger influence on their decision to attend GMC. Approximately 42% (14 of 33) of survey respondents indicated they would not have joined the National Guard without the scholarship while 85% (28 of 33) stated they would not have attended GMC without the scholarship.

  As noted previously, the Georgia Army National Guard stated one of the purposes of SSS is to create better educated soldiers. We were unable to compare the education level of SSS recipients to other Guard members. However, approximately 49% (93 of 189) of recipients who received their first SSS award in 2006 and 2010 graduated from GMC. This compares to GMC's reported graduation rate for fall 2012 freshmen of 27%.

- **University of North Georgia Military Scholarship (GMS)** – GMS had a significant influence on our survey respondents' decisions to attend the University of North Georgia (UNG). Sixty-three percent (24 of 38) of recipients who responded to our survey indicated they would not have attended UNG without the scholarship.

  In addition, GMS had a significant effect on individuals' decision to join the Georgia Army National Guard. While all scholarship recipients enlisted in the Georgia Army National Guard, only 39% (70 of 178) of fiscal year 2013 through 2017 non-selected scholarship applicants chose to enlist.[17] Furthermore, 71% (27 of 38) of recipients who responded to our survey indicated that the scholarship significantly influenced their decision to enlist.

  Although the scholarship recruits individuals to the GNG, the majority of recipients do not commission as officers (the program purpose indicated by the Georgia Army National Guard). Approximately 73% (134 of 184) of those who enlisted in fiscal years 2006 through 2010 had not commissioned as of May 2017. While the program has no goal associated with the percentage receiving a commission, it is not reasonable to expect all recipients to meet commission requirements four years later. Awards are typically made to 17-

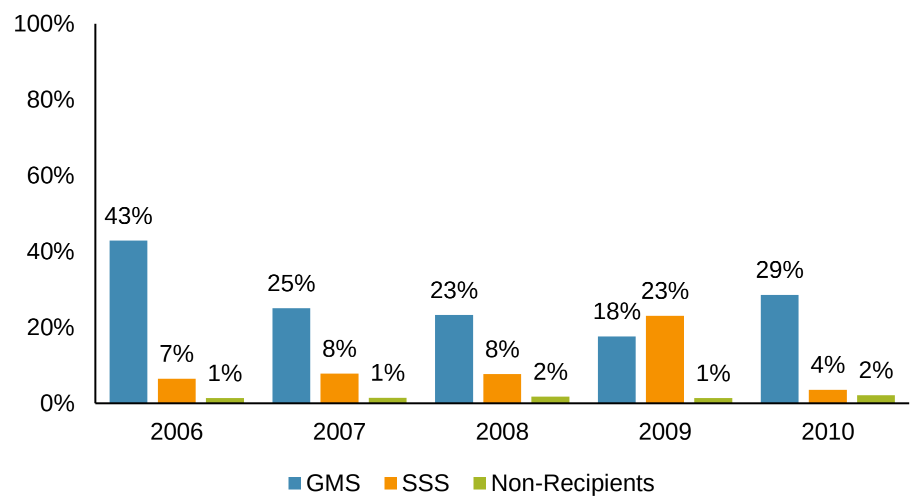
[16] See pages 43 and 44 for details on survey methodology and response rates.

[17] GSFA is authorized to award 42 University of North Georgia (UNG) Military Scholarships each year. In fiscal years 2013 through 2017, UNG received an average of 79 applications for the 42 slots available.

and 18-year-old high school seniors, some portion of whom are likely to not complete their undergraduate education, determine that they do not desire a commission, or fail to meet other commissioning requirements (moral, medical qualifications).

GMS recipients were most likely to commission as officers. Of those who enlisted in fiscal years 2006 through 2010, 27% (50 of 184) of GMS recipients and 9% (16 of 178) of SSS recipients commissioned as officers by May 2017, compared to 2% (88 of 5,577) of non-recipients. As shown in **Exhibit 10**, with the exception of the 2009 cohort, GMS recipients commissioned at a significantly higher rate than the other two groups. It should be noted, however, that although GMS and SSS enlistees are more likely to commission, they represented less than half of (66) of the 154 commissions in our sample.[18]

Exhibit 10
GMS Recipients Most Likely to Commission[1]
Fiscal Years 2006 through 2010



[1]Analysis excludes 10% (36 of 361) of scholarship recipients who attended Georgia Military College and served in the Air National Guard.

Source: DOAA analysis of Georgia National Guard data

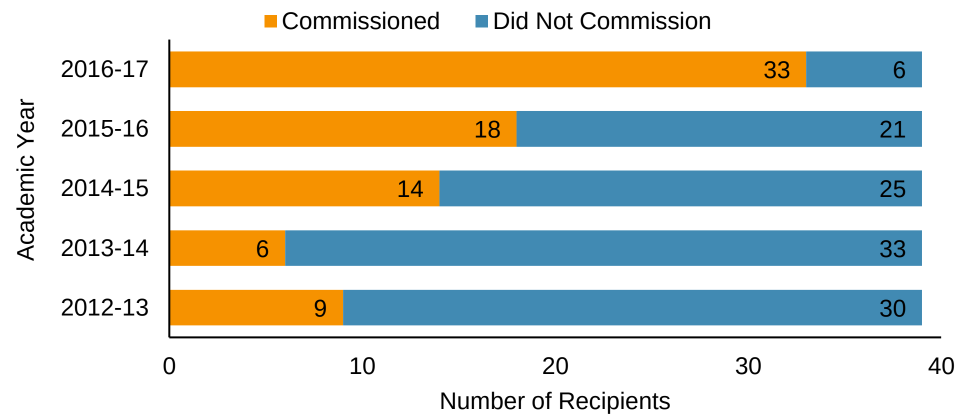
The percentage of GMS recipients commissioned as officers has increased in recent years. If all GMS recipients had commissioned, there would have been 39 commissions each year.[19] As shown in **Exhibit 11**, 85% (33 of 39) GMS recipients commissioned in the 2016-2017 academic year, compared to 23% (9 of 39) in 2013-2014. According to UNG, it has increased marketing of the

[18] National Guard officers come from numerous commissioning sources including ROTC, Officer Candidate School, In-service recruiting (ISR), and direct commissions. ISRs are those individuals coming from the Army Reserves or the active component into the National Guard.

[19] GMS grants three awards per congressional district. In 2013, one congressional district was added in Georgia, increasing the number of GMS recipients from 39 to 42, beginning with the 2013-2014 freshmen cohort. The first cohort with 42 recipients is expected to graduate in the 2017-2018 academic year.

Georgia Military Scholarship, resulting in a higher number of applicants and a more selective award process.

Exhibit 11
Percentage of GMS Recipients Commissioned as Officers has Increased, Academic Years 2012-13 through 2016-17



Source: DOAA analysis of University of North Georgia data

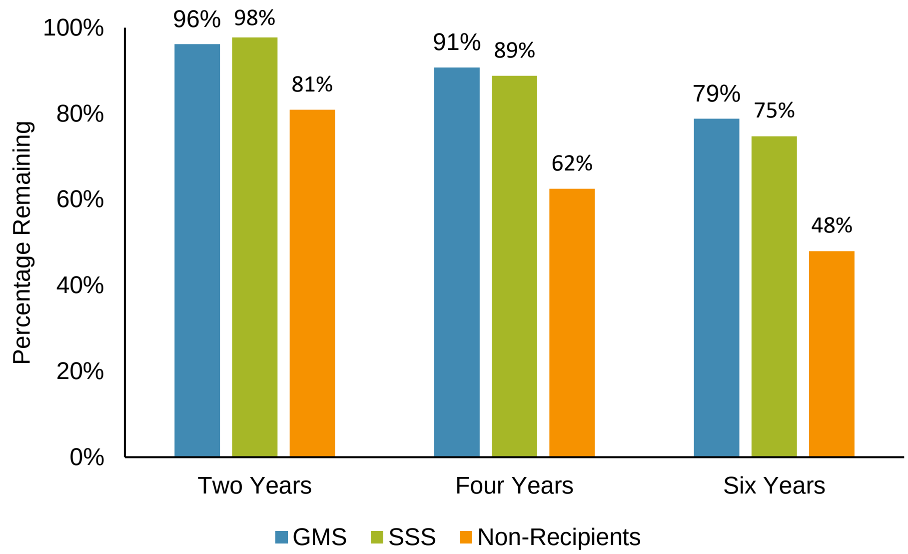
Retention

The scholarship programs appear to have a positive effect on retention. Compared to others who enlisted under a six-year contract during the same fiscal year, scholarship recipients had higher retention rates in the Army National Guard at two, four, and six years. Of those who enlisted in fiscal years 2006 through 2010, GMS and SSS recipients completed their initial six-year commitments at rates of 79% (145 of 184) and 75% (133 of 178), respectively, compared to 48% (2,677 of 5,577) for non-recipients.

As shown in **Exhibit 12**, GMS recipients were most likely to complete their initial six-year commitment, while non-recipients of awards were generally least likely to complete their initial six-year commitment. Average lengths of service for those who enlisted in fiscal years 2006 through 2010 were 6.9 and 6.0 for GMS and SSS recipients, respectively, compared to 4.6 years for non-recipients.

The service completion rates reported by GSFA likely understate the percentage of recipients meeting their service obligation due to some National Guard members not submitting a required form. GSFA requires recipients to submit a Verification of Service form each year to receive service credit against their loan balance, but there is evidence that active National Guard members simply fail to submit the form. Of 51 GMS recipients in cash repayment status as of October 2016, Georgia National Guard records indicated that 61% (31 of 51) either were still active in the Army National Guard (23) or were inactive but had previously served a sufficient number of years to have satisfied their obligation (8).

Exhibit 12
GMS and SSS Scholarship Recipients More Likely to Fulfill Army National Guard Commitment[1], Fiscal Years 2006 – 2010 Enlistees



[1]Analysis excludes 10% (36 of 361) of scholarship recipients who attended Georgia Military College and served in the Air National Guard.
Note: As discussed on page 44, this analysis was affected by data limitations that could overstate the percentages. However, because the same method was applied to all groups, we determined the relative performance to be accurate.

Source: DOAA analysis of Georgia National Guard data

Opportunities for Increased Effectiveness

While the Georgia National Guard loan forgiveness programs positively impact recruitment and retention, opportunities exist for improved effectiveness.

- **Purpose and Performance Measures** – The documented purposes of the two scholarship programs are limited and the stated purposes are not measured. State law and/or appropriations acts state that the programs have purposes to provide scholarships to worthy students; however, the service requirement indicates a more specific expectation. Georgia National Guard officials indicated that scholarship programs should produce commissioned officers and better educated soldiers. However, the state does not measure these outcomes. Current statewide performance measures address the number of students receiving awards and the percentage repaying loans with service.

- **Georgia National Guard Service Cancelable Loan Funding** – Funding would need to accommodate a significant number of applicants if the program is intended to become an effective, long-term recruiting tool. As previously noted, 102 of 130 applicants in fiscal year 2017 were denied due to a lack of funds (appropriation was $100,000). If only a small portion of members can access the program, it is less likely to serve as an effective selling point for recruits. It should be noted that in June 2017, GSFA moved $1.5 million of its funds to the program, but officials do not currently have plans for additional transfers.

RECOMMENDATIONS

1. The Georgia National Guard, UNG, and GMC should work together to adopt performance measures that assess whether the GMS and SSS programs are achieving their intended purposes. Based on stated purposes, these measures would assess the percentage of recipients that were influenced by the program, as well as graduation and commission rates.

2. The General Assembly should determine whether the funding for the Georgia National Guard Service Cancelable Loan is intended to encourage individuals to join the National Guard or to serve as a new benefit for a portion of existing Guard members. If intended to recruit and retain members, funding would likely need to accommodate a larger number of applicants.

3. GSFA and the Georgia National Guard should improve the service verification process through the use of Department of Defense data that indicates whether a Guard member qualifies for service cancelation.

Georgia Department of Defense (GaDoD) Response: *GaDoD indicated its agreement with these recommendations, stating that "the Georgia National Guard will be glad to assist the Georgia Student Finance Commission and the involved schools define and implement performance measures." In addition, GaDoD stated "the Georgia National Guard is ready to work with the General Assembly to help define the purpose of the Georgia National Guard Service Cancelable Loan Program and the amount of funding that would fulfill that purpose."*

Regarding the service verification process, GaDoD stated "the Georgia National Guard and GSFC have started the process of streamlining the verification of Guardsmen's eligibility. However, we will work with GSFC to define the process in their regulations and our standard operating procedure."

Georgia Military College Response: *GMC indicated its agreement with the report's findings, conclusions, and recommendations.*

University of North Georgia Response: *UNG stated that "The UNGMS program provides an opportunity to many students who would not otherwise consider military service or be able to afford attending a 4-year university. In an increasingly difficult military recruiting environment, the scholarship helps UNG—the Military College of Georgia and the only federally-designated senior military college in the state—meet its cadet recruitment goals and contribute to maintaining a robust Corps of Cadets. In turn, this helps Georgia Army National Guard (GAARNG) and U.S. Army achieve their officer production goals. In FY2017, UNG produced 25% of all GAARNG officers. That number is expected to increase this year, as we are projected to commission an additional 37 officers into the GAARNG."*

UNG stated that the sections of the report regarding the UNGMS were accurate and that it "looked forward to providing data and assistance to support policy makers in their decision-making process."

GSFA Response: *Regarding performance measures and program purposes, GSFA noted that "determining program influence is difficult, at best, from a research perspective. The financial and human resources necessary to execute valid and reliable survey data, both qualitative and quantitative, must be assessed before determining the level to which GSFA could measure influence."*

Regarding the Verification of Service form recommendation, GSFA noted that the awards "function legally as loans and borrower communication and response is an expected part of obtaining the loan. However, GSFA also recognizes and respects the unique circumstances and challenges that often face our service men and women. As such, GSFA actively began evaluating its paperwork requirements and operational procedures in 2016. The agency has since met with officials from both the University of North Georgia and the Georgia National Guard to begin designing a more streamlined and borrower-friendly process. Improvements have been made and, as a result, a number of borrower statuses have been updated. GSFA continues to work collaboratively with the GNG to determine if there are even further ways to automate the exchange of data and information between GSFA and Department of Defense systems."

Engineering Programs

It is uncertain whether Georgia has a statewide shortage of engineers requiring loan forgiveness programs.

While engineering has been identified as a high-demand occupation in Georgia, no agency has assessed whether the state is producing a sufficient number of engineers to meet the demand. The number of engineering graduates produced by the University System of Georgia each year greatly exceeds the number of openings projected by the Georgia Department of Labor. While shortages may exist within specific engineering fields or regions of the state, the state's Scholarship for Engineering Education (SEE) and Scholarship for Engineering Education for Minorities (SEEM) do not target specific fields or regions.

Engineering has been identified as a high-demand occupation by both the Georgia Department of Economic Development and the Georgia Department of Labor, though neither addresses whether the demand for engineers is being sufficiently met through engineering graduates and relocations.

- **Department of Economic Development (GDEcD)** – GDEcD determined engineering to be a high-demand occupation based on interviews with employers. Governor Nathan Deal created the High Demand Career Initiative (HDCI) to address the economic need for a "consistent, trained, and reliable" workforce. In 2014, GDEcD released the HDCI report which was informed by 13 meetings across the state with 80 private sector companies. The report identified the top 11 high-demand careers, which included mechanical and electrical engineers. Several other engineering careers were identified in specific industries, including chemical, aerospace, industrial, manufacturing, material, process, and software engineers.
- **Georgia Department of Labor (GDOL)** – GDOL identified mechanical and civil engineering as a high-demand occupations based on the number of projected job openings. Its analysis does not consider supply.

GSFA is responsible for administering the two engineering scholarship programs but is not assigned responsibility for ensuring that the programs are continuing to fill an unmet need. According to the Governor's Office of Planning and Budget's fiscal year 2016 Zero-Based Budget review, SEE was created in 1997 when only two public institutions had engineering programs and neither was in middle or southern Georgia. As of fiscal year 2015, two additional public institutions, including Georgia Southern University, offer engineering programs.

Our analysis of supply and demand using GDOL and University System of Georgia (USG) data indicates there may be a sufficient number of engineers in the state, though women and minorities are likely underrepresented. USG awarded 4,341 engineering degrees in 2016, including 2,800 bachelor's degrees (230 from Georgia Southern University) and 1,541 graduate degrees. GDOL estimates 1,690 annual openings for engineers, including 460 from growth and 1,230 from replenishments. Nationally, women and many of the minorities targeted by SEEM are underrepresented in the engineering field.

The Governor's Office Planning and Budget's fiscal year 2016 review of the SEE program recommended it be eliminated due to the small number of students completing their service obligation. Instead, funding for the program was increased by the General Assembly and the program for minority engineering students was created.

RECOMMENDATION

1. The General Assembly should require a state entity to periodically determine whether an engineering shortage that justifies the program continues to exist.

Mercer's Response: *"The State of Georgia approached Mercer about starting an Engineering School. The State needed more engineers quickly and Mercer did have and continues to have the reputation of meeting State requests to meet needs quickly and effectively. The SEE was designed to make this serious financial commitment by Mercer University to start and maintain an Engineering School a success for Georgia's students." Mercer also noted that the program's purpose is to encourage engineering graduates to stay in Georgia, not to convince students to major in engineering.*

Mercer further stated that the "engineering need is and was most acute at WRAFB (Warner Robins Air Force Base), which still is the largest economic engine in Middle Georgia." The state recognizes the need to keep WRAFB competitive, and Mercer ensures that its programs meet WRAFB needs by including base leadership on its Engineering Advisory Board. As a result, the school is the primary supplier of engineers to the base. Of 503 engineering graduates who received SEE, 102 work at the base. In addition, 28 of 331 engineering graduates who did not receive SEE also work at the base.

Mercer also noted that additional occupations should be considered in the analysis of annual need. Specifically, WRAFB leaders indicated a need for software engineers, which are not classified in the Department of Labor's Occupational Codes as engineering. Mercer noted that engineering and technical degrees are needed for various occupations (e.g., logisticians, information security analysts, software developers) included in other DOL Occupational Codes. With these occupations, the number of annual potential openings grows to 4,650 jobs.

Finally, Mercer noted that the program has no net cost to the state. It stated that for every award, the state has either an engineer working in Georgia or a repayment of loan amount, plus interest.

SEE recipients may be more likely to work as engineers in Georgia; however, it appears that the majority of SEE recipients would likely have majored in engineering and stayed in Georgia even without the award.

The majority (56%) of Scholarship for Engineering Education (SEE) loan recipients in our fiscal year 2007 through 2011 freshmen cohort do not work as engineers in the state. In addition, it does not appear that SEE impacted most graduates' choice of major or work location. Less than 10% of SEE recipients responding to our survey were significantly influenced by the program to major in engineering; less than 30% were significantly influenced by the program to work in Georgia.[20] This suggests that SEE may operate more as a low-interest loan for some students than a recruiting or retention tool.

[20] See page 44 for details on survey methodology and response rates.

All SEE recipients to date have attended Mercer University. As noted on page 3, SEE is limited to students enrolled at private universities in an engineering program leading to a baccalaureate degree approved by the Engineering Accreditation Commission of the Accrediting Board for Engineering and Technology. Currently, Mercer University is the only private university with a qualifying engineering program.

Because the Scholarship for Engineering Education for Minorities was established in 2016, our analysis of recruitment and retention is primarily focused on the Scholarship for Engineering Education.

Recruitment

The Scholarship for Engineering Education (SEE) did not have a significant recruiting effect on the respondents to our survey. To be considered effective, SEE should convince individuals to major in engineering who would not have done so otherwise. However, only 6% (5 of 79) of recipients who responded to our survey indicated SEE had a significant influence on their decision to major in engineering.[21] Furthermore, 40% (131 of 324) of those who received their first SEE loan in fiscal years 2007 through 2011 did not graduate from Mercer with a degree in engineering.[22]

The SEE award amount may not be high enough to influence decisions, as it only represents a small portion of Mercer students' cost of attendance. The 2016-2017 cost of attendance at Mercer University, excluding room and board, was $39,176. Maximum SEE awards amounts are $5,250 per year and $17,750 total. The incentive represents approximately 13% of students annual cost of attendance and 11% of their total cost of attendance over four years.

Since 2006, approximately 63% (432 of 681) of Mercer undergraduate engineering graduates have received SEE. According to Mercer officials, those that did not were either not a Georgia resident (i.e., ineligible), did not need the funding, or did not intend to work in Georgia after graduation.

Retention

Program recipients have higher retention rates than Mercer engineering graduates who did not receive the scholarship. However, it is unclear whether the increased retention is an effect of the scholarship, or reflective of those who qualified for and accepted the scholarship. To be an effective retention tool, SEE should encourage recipients to work as an engineer in Georgia. However, only 29% (15 of 51) of recipients who responded to our survey indicated SEE had a significant influence in their decision to accept an engineering job in the state of Georgia.[23]

As shown in **Exhibit 13**, SEE recipients who graduated in calendar years 2009 through 2014 were more likely to work and remain in Georgia after graduation. Compared to Mercer engineering graduates who did not receive SEE, SEE recipients were more likely to be working in Georgia two, four, and six years after graduation. The difference in retention was 22% two years after graduation and 19% in year six. It

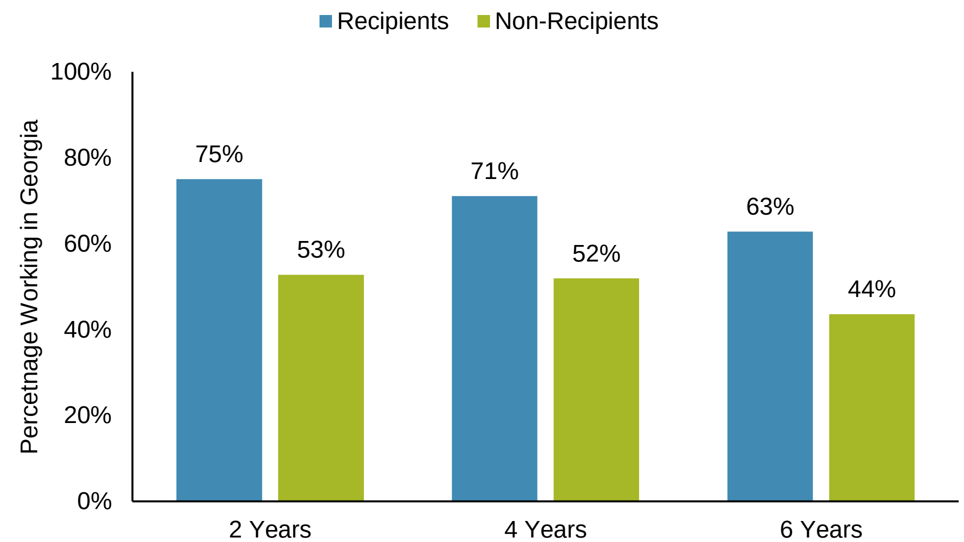
[21] Forty-nine of 79 respondents (62%) reported that the program had no influence on their choice of major and 25 (32%) reported moderate influence.

[22] Mercer reimbursed Georgia Student Finance Authority $92,750 for 40 recipients who changed their major or withdrew from Mercer in their first year between fiscal years 2013 and 2017, as required by GSFA regulations. This represents approximately 7% (40 of 562) of recipients who received their first SEE loan in those years.

[23] Ten of 51 respondents (20%) reported that the program had no influence on their decision to work in Georgia and 26 (51%) reported moderate influence.

should be noted that this analysis does not account for these graduates' occupations. It is possible that some recipients and non-recipients were not working as engineers.

Exhibit 13
SEE Recipients More Likely to Work and Remain in Georgia[1]
Calendar Year 2009-2014 Mercer Graduates



[1]Two-year retention was calculated for all 2009-2014 graduates, four-year retention was calculated for 2009-2012 graduates, and six-year retention was calculated for 2009-2010 graduates.

Source: Georgia Department of Revenue analysis of tax data

While recipients who graduate have higher retention rates than non-recipients, many recipients do not repay their loan with service. Overall, 44% (141 of 324) of those who entered as freshmen between fiscal years 2007 and 2011 repaid all or a portion of their loans with service. Not all recipients graduate with a Mercer engineering degree. The percentage repaying with service increases to 68% (131 of 193) for those who graduated from Mercer with a qualifying degree.

Service cancelation data may not accurately reflect the percentage of recipients working in qualifying occupations. GSFA regulations require that SEE recipients meet continued eligibility (i.e., remain in qualifying engineering program, graduate from Mercer) to be eligible for service cancelation. SEE recipients who transfer to other state universities and work as engineers in the state are not eligible for service cancelation, and repay loans with cash. We also identified nine SEE recipients who received service cancelation from GSFA despite not meeting eligibility. Six of the nine had a non-qualifying engineering degree from Mercer, two had an engineering degree from Georgia Tech, and one had a liberal arts degree from Mercer. Agency officials stated that they would implement additional controls to prevent future errors.

Though there has been growth in Georgia's engineering workforce, it has not been significantly impacted by SEE recipients. According to GDOL's Occupational Projections, the engineering workforce in Georgia is adding approximately 460 new jobs each year. Comparatively, Mercer graduated an average of 41 SEE recipients per year in fiscal years 2012 through 2016, and approximately 68% of SEE graduates work as engineers in Georgia. Each year, SEE recipients represent approximately 6% (28 of 460) of new engineers in Georgia.

Opportunities for Increased Effectiveness

SEE's design and limited performance measures may limit its effectiveness as a retention tool. Research found that in-school loan forgiveness programs were more effective when penalties were significant enough to discourage participants from buying out of their obligation. In addition, improved performance measures and better tracking of outcomes could enhance performance.

- **Penalty** – SEE's interest rate may not be high enough to discourage individuals defaulting on their service obligation. SEE awards up to $5,250 per year (up to $17,500 total) and assesses interest at a rate of prime plus 1% (approximately 5.25% in August 2017) for those who choose cash repayment. As discussed on page 11, research has found that higher penalties have lower default rates. Specifically, an evaluation of 16 state-funded loan forgiveness programs for physicians found that recipients of awards with very high penalties were 32% more likely to complete their service obligation (80.3% to 48.6%).

- **Performance Measures** – Effective performance measures ensure that efforts are focused on achieving specific goals. If the purpose of the scholarship is to increase the number of engineers in the state, performance measures should assess the extent to which recipients were influenced by the Program to major in engineering and work in Georgia. Current statewide performance measures for SEE only address the number receiving awards, average amount per student, and the percentage repaying loans through service. These numbers may be misleading, considering the high percentage of recipients that likely would have met the desired outcome without the program.

RECOMMENDATION

1. GSFA should adopt performance measures that measure the extent to which the engineering programs are achieving their intended purpose. The measures should account for the percentage of recipients that were influenced by the program to major in engineering and work in the Georgia.

Mercer's Response: *Mercer noted that the program's purpose is not to recruit students into the engineering program but to convince engineering graduates to stay in Georgia. It noted that of 503 graduates who received SEE, 81% remained in the state. It also noted that the survey results cannot be projected to all SEE graduates due to the low response rate.*

GSFA Response: *Regarding performance measures and program purposes, GSFA noted that "determining program influence is difficult, at best, from a research perspective. The financial and human resources necessary to execute valid and reliable survey data, both qualitative and quantitative, must be assessed before determining the level to which GSFA could measure influence.*

Regarding the service cancelation errors, GSFA stated that it has "implemented additional controls to alleviate the opportunity for such errors in 2016. While the error rate on the sample was less than 2%, GSFA has also more recently updated policies and procedures to ensure that there is a clearly *documented distinction between eligible degree types (ex. Bachelor of Science in Engineering vs. Bachelor of Science in Industrial Mgmt. from the School of Engineering). Policy discussions have ensued about the eligibility of borrowers for service repayment when the borrower transferred from Mercer, but that ultimately received an engineering degree and is working in Georgia in an engineering field. If the state program purpose is to incent students to finish an engineering degree and work in that field in Georgia, a case can be made that service cancelation is warranted even if the student did not finish the program of study at Mercer. GSFA will continue to evaluate this option and will present it to the Board of Directors if warranted."*

Student Access Loan - Public Service Employees

The loan forgiveness option of Georgia's Student Access Loan program was not designed to address a specific workforce need.

State law (O.C.G.A. 20-3-405) defines public service for the purpose of service cancelation as an employee of one of the following:

- *State of Georgia*
- *an agency or instrumentality of the state*
- *executive, legislative, or judicial branch of the state*
- *a political subdivision of the state*
- *the University System of Georgia or any unit of the university system*
- *an authority or public corporation of the state*
- *a local board of education*
- *an agency or instrumentality of a political subdivision of this state*

Although there likely are public service occupations in Georgia—particularly in certain geographic locations—that have an unmet need, the loan forgiveness option of the Student Access Loan (SAL) was not designed to address specific needs. Instead, according to GSFA officials, the loan forgiveness option may have been included to mirror federal student loan design. As it is currently structured, SAL's loan forgiveness option is not targeted toward high-need occupations or geographic locations and likely serves as a benefit to those working for eligible employers.

Many borrowers who have received service cancelation do not work in occupations that would be considered high need. As shown in **Exhibit 14**, only 32 borrowers received service cancelation between fiscal years 2012 and 2015. These include occupations that have had reported shortages at times or in certain areas (e.g., nurses, teachers, DFCS case managers), as well as occupations with no reported shortages.

Exhibit 14
Teachers and Nurses are Nearly Half of SAL Borrowers with Service Cancelation, Fiscal Years 2012-2015

Occupation	Count	% of Total
Teacher	9	28%
Nurse	6	19%
Education Support Services	4	13%
School Paraprofessional	3	9%
DFCS Case Manager	3	9%
Administrative Assistant	2	6%
Health Information IT	2	6%
Engineer	1	3%
Public Defender	1	3%
Office Manager	1	3%
Total	**32**	**100%**

Source: DOAA analysis of GSFA data

GSFA does not capture the geographic employment location of borrowers, but 63% (20 of 32) of those utilizing SAL's loan forgiveness option lived in seven metro Atlanta counties (Clayton, Cobb, Coweta, DeKalb, Douglas, Fulton, Gwinnett, and Henry). Altogether, the 32 borrowers lived in 19 Georgia counties.[24]

It should be noted that six of the 32 individuals were provided service cancelation in error. These included an employee of the federal government, private university, and several non-profits, which do not qualify under the state's definition of public service. According to GSFA officials, these were approved in the first few months of the agency

[24] Non-metro Atlanta counties include Appling, Bibb, Cherokee, Clarke, Decatur, Hall, Lumpkin, Meriwether, Peach, Talbot, and Thomas.

granting service cancelation. The officials stated that controls over the service cancelation process were improved in July 2016. Additional training was provided, and a second employee was added to the review process. Officials also noted that a new eligibility worksheet and a report that allows monitoring of decisions were created.

GSFA Response: *"It is important to note that the Student Access Loan (SAL) was included in this review, even though it is not a traditional loan forgiveness or service cancelable loan program. Rather, this program was designed as "last gap" financing for students that have exhausted other aid options during a time when the HOPE Program award amounts were reduced. SAL was not designed as a service cancelable loan or traditional loan forgiveness program. The public service loan forgiveness option, as well as the discharge option for borrowers at technical colleges, were designed simply as borrower benefits. These borrower benefits are not reflective of the program intent for SAL, but added during discussion and program design later. Accordingly, we believe it is, at times, inappropriate to include SAL as part of the broader discussion of loan forgiveness programs."*

It is unlikely that SAL recruits or retains individuals to high-need occupations or geographic locations.

The Student Access Loan is relatively new and few borrowers have utilized the service cancelation option; therefore, our ability to analyze its effectiveness in recruitment and retention was limited. However, as noted on the previous page, the loan forgiveness option was not designed to recruit or retain individuals to specific, high-need occupations. It is available to students planning to work in any occupation.

Because SAL is only available to those who have exhausted all other financial aid options, relatively few Georgia students receive the loan. In fiscal year 2016, 87,707 Georgia students received Georgia's HOPE scholarship and 3,494 received SAL.[25] In addition, a small percentage of borrowers utilize the service cancelation option. Since its creation in the 2011-2012 academic year, approximately 0.2% (32 of 16,147) of borrowers have received service cancelation.

Higher service cancelation amounts forgiven are more likely to influence individuals' employment decisions. Approximately $60,000 has been forgiven for the 32 claiming service cancelation. Seven individuals have received more than $1,000 in service cancelation, while the other 25 individuals have had $750 or less forgiven.

RECOMMENDATION

1. GSFA should consider eliminating the public service cancelation option given that it is not designed to address specific occupations with a shortage and its limited use.

GSFA Response: *"GSFA acknowledges the low number of individuals that have utilized the public service loan forgiveness option within SAL. However, GSFA maintains that this borrower benefit is helping borrowers in what are often lower-paying public sector jobs. GSFA will look at options to target the benefit to more specific public service employee sectors and to advertise the option more."*

[25] The number does not include SAL-Technical borrowers.

Appendix A: Table of Recommendations

Not all loan forgiveness programs were created to address a shortage within an occupation or field. Those that are created to address a shortage are not always well targeted and their need is not routinely assessed. (p. 7)
1. The General Assembly should ensure that legislative intent is clear for all loan forgiveness programs.
2. For those programs intended to address a shortage, the General Assembly should assign responsibility to an appropriate entity for periodically assessing whether the shortage continues to exist.
The state's loan forgiveness programs have increased the number of individuals within targeted occupations or geographic areas, but opportunities for increased effectiveness exist. (p. 9)
3. Officials should consider whether their loan forgiveness programs would benefit from improved marketing, program design changes, higher award amounts, and higher penalties. When necessary, program officials may need to seek statutory changes.
4. The General Assembly should clarify the entity responsible for assessing the performance of each loan forgiveness program.
While there is a shortage of medical professionals in areas of the state, program criteria does not ensure the neediest counties are eligible and prioritized for funding. (p. 13)
5. GBPW should revise the geographic requirement to ensure that program funds are targeted toward the highest-need rural areas.
Georgia's loan repayment program has recruited physicians to rural areas, and these physicians have slightly higher retention rates than non-program physicians. However, opportunities exist for increased effectiveness. (p. 16)
6. GBPW should improve marketing to ensure that all graduating and new medical professionals are aware of available loan forgiveness programs.
7. GBPW should consider design changes such as larger annual award amounts, multi-year awards, and a modification of the requirement that applicants already be employed in the rural area.
8. GBPW should consider providing joint awards with organizations that hire medical professionals. By requiring matching funds from the community, the state would have funds for additional awards or to increase the total award value.
9. GBPW should adopt performance measures that measure the extent to which the program meets its intended purpose of increasing the number of medical professionals in rural areas.
While there is a shortage of large animal veterinarians in certain parts of the state, the Veterinarian Loan Repayment Program's criteria does not ensure that the identified shortage areas are eligible for funding. (p. 20)
10. The General Assembly should require the Department of Agriculture to periodically determine whether a large animal veterinarian shortage that justifies the program continues to exist.
11. The General Assembly should consider revising state law to allow the State Veterinary Education Board to consider relevant statistical data, including the number of cattle and swine and the number of large animal veterinarians, when determining rural, underserved areas eligible for loan repayment.
The State Veterinary Education Board has not established performance measures to assess the effectiveness of the Veterinarian Loan Repayment Program. (p. 22)
12. The State Veterinary Education Board should adopt performance measures that measure the extent to which the program meets its intended purpose of increasing the number of large animal veterinarians in rural areas.
13. The State Veterinary Education Board should determine if opportunities identified for the programs for medical professionals (see pages 17 through 19) should be considered to maximize the effectiveness of the Veterinarian Loan Repayment Program.

The Georgia National Guard loan forgiveness programs were not created specifically to address a shortage. (p.23)
No recommendations
To varying degrees, recipients of Georgia's loan forgiveness program awards are more likely to enlist and remain in the Georgia National Guard. While they may meet the required service obligation, many scholarship recipients do not graduate or commission as officers. (p. 24)
14. The Georgia National Guard, UNG, and GMC should work together to adopt performance measures that assess whether the GMS and SSS programs are achieving their intended purposes. Based on stated purposes, these measures would assess the percentage of recipients that were influenced by the program, as well as graduation and commission rates.
15. The General Assembly should determine whether the funding for the Georgia National Guard Service Cancelable Loan is intended to encourage individuals to join the National Guard or to serve as a new benefit for a portion of existing Guard members. If intended to recruit and retain members, funding would likely need to accommodate a larger number of applicants.
16. GSFA and the Georgia National Guard should improve the service verification process through the use of Department of Defense data that indicates whether a Guard member qualifies for service cancelation.
It is uncertain whether Georgia has a statewide shortage of engineers requiring loan forgiveness programs. (p. 31)
17. The General Assembly should require a state entity to periodically determine whether an engineering shortage that justifies the program continues to exist.
SEE recipients may be more likely to work as engineers in Georgia; however, it appears that the majority of SEE recipients would likely have majored in engineering and stayed in Georgia even without the award. (p. 32)
18. GSFA should adopt performance measures that measure the extent to which the engineering programs are achieving their intended purpose. The measures should account for the percentage of recipients that were influenced by the program to major in engineering and work in the Georgia.
The loan forgiveness option of Georgia's Student Access Loan program was not designed to address a specific workforce need. (p. 37)
No recommendations
It is unlikely that SAL recruits or retains individuals to high-need occupations or geographic locations. (p. 38)
19. GSFA should consider eliminating the public service cancelation option given that it is not designed to address specific occupations with a shortage and its limited use.

Appendix B: Objectives, Scope, and Methodology

Objectives

This report examines the loan forgiveness programs that are currently funded by the state. Specifically, the audit answered the following two questions:

1. Are Georgia's loan forgiveness programs targeted toward high-need occupations and geographic areas?

2. To what extent do Georgia's loan forgiveness programs recruit and retain individuals to specified occupations and geographic areas?

Scope

This audit generally covered activity related to loan forgiveness programs that occurred between fiscal years 2006 and 2017, with consideration of earlier or later periods when relevant. The programs were primarily administered by the Georgia Board for Physician Workforce (GBPW) or the Georgia Student Finance Authority (GSFA). The programs reviewed include:

- **Physicians, Dentists, Physician Assistants, and Advance Practice Registered Nurses for Rural Areas Assistance Program** – Administered by GBPW. Physician awards beginning in fiscal year 2006 were reviewed to assess recruitment and retention effectiveness. Funding for the other professions has been added since 2015 so our review of those professions was limited to whether a need existed and the program design.

- **University of North Georgia Military Scholarship** – Administered by GSFA and the university. Awards beginning in 2006 were reviewed to assess recruitment and retention effectiveness.

- **Georgia Military College State Service Scholarship** – Administered by GSFA and the college. Awards beginning in 2006 were reviewed to assess recruitment and retention effectiveness.

- **Georgia National Guard Service Cancelable Loan** – Administered by GSFA and participating universities. Funding was resumed in fiscal year 2017; therefore, assessment was limited to need and program design.

- **Scholarship for Engineering Education** – Administered by GSFA and Mercer University. Awards beginning in 2006 were reviewed to assess recruitment and retention effectiveness.

- **Scholarship for Engineering Education for Minorities** – Administered by GSFA and universities. Funding was first allocated in fiscal year 2016; therefore, our assessment was limited to whether a need existed and the program design.

- **Veterinary Loan Repayment Program** – Administered by GSFA and the State Veterinary Education Board. Funding was first allocated in fiscal year 2017; therefore, assessment was limited to need and program design.

- **Student Access Loan/Governmental Service Credit** – Administered by GSFA. No funding is directed specifically to the credit and only 0.2% of SAL recipients claim the credit. Our review was limited to need and effectiveness based on design.

Government auditing standards require that we also report the scope of our work on internal control that is significant within the context of the audit objectives. We reviewed internal controls as part of our work on both objectives and any deficiencies are noted in the respective findings. Specific information related to the scope of our internal control work is described in the methodology section below.

Methodology

The audit team used the following methodologies to complete both objectives.

- **Review of relevant laws, rules, and regulations** – We reviewed state laws and regulations governing loan forgiveness programs.

- **Review of agency policies and procedures** – We reviewed Georgia Board for Physician Workforce and Georgia Student Finance Authority policies and procedures related the administration of loan forgiveness programs. We also reviewed applications and contracts for all programs.

- **Interviews of agency officials and staff** – We interviewed staff at Mercer University, University of North Georgia, and Georgia Military College; officials from Georgia Student Finance Authority, Georgia Board for Physician Workforce, Georgia Departments of Agriculture, Defense, Labor, and Economic Development; the Senate Budget and Evaluation Office; the House Budget and Research Office; and key stakeholders.

- **Research of loan forgiveness programs** – We reviewed existing studies related to loan forgiveness program effectiveness. These were generally related to loan forgiveness programs for medical professionals.

- **Review of loan forgiveness programs in other states** – We reviewed websites, and conducted a limited number of interviews as necessary, to identify loan forgiveness programs targeted to similar workforces in other southeastern states. We also compared program design elements of other states' programs to Georgia's.

To determine the extent to which loan forgiveness programs are targeted toward high-need occupations and geographic areas:

- **Medical-Related Rural Area Assistance Program** – We reviewed federal Health Resources and Services Administration (HRSA) reports and HRSA data related to Health Professional Shortage Areas. We also interviewed Georgia Board for Physician Workforce officials and board members; staff from the Georgia Department of Community Health's Office of Rural Health; and stakeholders.

- **Veterinarian Loan Repayment Program** – We reviewed shortage nomination forms submitted to the federal veterinarian loan repayment program by the Georgia Department of Agriculture (GDA), which described veterinarian shortage areas identified by GDA. We also reviewed data from the American Veterinary Medicine Association and interviewed GDA officials.

- **Georgia National Guard** – We analyzed authorized and assigned strength data provided by Army and Air National Guard staff. We also interviewed National Guard staff and Georgia Department of Defense officials.

- **Engineering** – We reviewed the Georgia Department of Economic Development's 2014 High Demand Career Initiative report. We interviewed staff at the Georgia Department of Economic Development, Georgia Department of Labor, and the University System of Georgia. Finally, we compared the number of engineering degrees conferred by the University System of Georgia to the number of annual openings projected by the Georgia Department of Labor.

- **Student Access Loan (public service employees)** – We interviewed staff at the Georgia Student Finance Authority.

Our analysis of recruiting and retention effects were limited to four programs that have been funded in each of the last five years: the Medical-Related Rural Areas Assistance Program, University of North Georgia Military Scholarship, Georgia Military College State Service Scholarship, and the Scholarship for Engineering Education.

To determine the extent to which loan forgiveness programs recruit individuals to specified occupations and geographic areas:

- **Medical-Related Rural Area Assistance Program** – We compiled a list of loan repayment applicants and recipients from 2006 through 2017 using Georgia Board for Physician Workforce documents. We conducted an electronic survey of physicians who received loan repayment in fiscal years 2006 through 2016 and, separately, of physicians licensed in 2011 and 2012—as identified in Georgia Composite Medical Board data—who were practicing in a qualifying rural area and did not apply for the program. Survey response rates for recipients and non-applicants were 18% (30 of 161) and 10% (23 of 210), respectively. Given the response rates, we could not project the results to the population of recipients or non-applicants. We also interviewed six recipients who responded to our survey to gain further insight into the program's recruiting effect.

- **Georgia National Guard programs** – We analyzed scholarship recipient and, as applicable, non-selected applicant data provided by the University of North Georgia (UNG) and Georgia Military College (GMC) along with GSFA's loan data. We assessed the UNG and GMC datasets and determined they were sufficiently reliable for our analyses.

  We sent an electronic survey to fiscal years 2006 through 2017 scholarship recipients for whom a valid email address was provided, approximately 60% (248 of 410) and 61% (267 of 435) of University of North Georgia Military

Scholarship (GMS) and Georgia Military College State Service Scholarship (SSS) recipients, respectively. Survey response rates were 13% (41 of 248) for GMS and 9% (34 of 267) for SSS. Given the response rates, we could not project the results to the populations of GMS or SSS recipients. We also interviewed two SSS recipients and one GMS recipient to gain further insight into the program's recruiting effect.

- **Engineering** – We analyzed engineering graduate data provided by Mercer University along with GSFA's loan data. We assessed Mercer's data and determined it was sufficiently reliable for our analysis. We sent an electronic survey to approximately 75% (557 of 739) of fiscal year 2006 through 2016 Scholarship for Engineering Education recipients for whom a valid email address was provided. The survey response rate was 11% (79 of 557). Given the response rate, we could not project the results to the full population of recipients. We also interviewed three recipients to gain further insight into the program's recruiting effect.

To determine the extent to which loan forgiveness programs retain individuals to specified occupations and geographic areas:

- **Medical-Related Rural Area Assistance Program** – We identified fiscal year 2006 through 2015 physician loan repayment recipients and non-selected applicants using Georgia Board for Physician Workforce documents. For physicians who received loan repayment, the retention calculation began on the start date of their last contract. For non-selected applicants, the retention calculation began on the earliest contract start date for the most recent year in which they applied.

  We identified National Provider Identification (NPI) numbers for each physician using a Medicaid provider list provided by the Georgia Department of Community Health (DCH). We then used DCH's Medicaid claims data, which includes provider NPI, to determine if and in which Georgia counties recipients and non-selected applicants served Medicaid patients in each applicable year. We assessed the claims data and determined it was sufficiently reliable for our analysis. Because loan repayment recipients are allowed to work in qualifying state facilities, we also reviewed state personnel data to determine if physicians not identified in the Medicaid data were working for a qualifying state agency.

- **Georgia National Guard programs** – We analyzed data provided the Georgia Army National Guard along with GSFA's loan data. The Army National Guard (ANG) maintains data related to active and inactive service members. ANG was not able to a report with start and end dates for service members. Instead, ANG staff provided reports from its personnel data system reflective of points in time for each year 2006 through 2017. The reports were then compiled into one dataset. The audit team worked with ANG staff to match ANG data with GSFA data using social security numbers. Full social security numbers were then replaced with the last four digits only. Relevant data fields included the last four digits of social security number, name, first year service member appeared in dataset, grade level, and End Term of Service (ETS); and last year service member appeared in dataset and grade level, and ETS. We assessed the data and determined it was sufficiently reliable for our analysis.

We determined that scholarship recipients generally entered service as Private 1, Private 2, or Private First Class under six-year contracts. We identified non-recipients who entered service in these grades under six-year contracts between 2006 and 2010. We determined the percentage of recipients that served for two, four, and six years.

We were able to estimate service members' start dates based on ETS dates and estimated contract length. We were unable to estimate precise end dates, only the year in which an individual was no longer present in ANG data. To ensure that retention rates were not understated, we considered all service members with 1.1 or more years of service to have been retained for two years. Likewise, those with 3.1 or more were considered retained for four years and those with 5.1 or more were considered retained for six years.

We were unable to calculate the retention of scholarship recipients who enlisted in the Air National Guard due to the inaccessibility of information on inactive service members.

- **Engineering** – Using data provided by Mercer University on its fiscal year 2006 through 2016 engineering graduates, we provided the Georgia Department of Revenue (DOR) with a list of recipients and non-recipients by graduation year. DOR staff reviewed Georgia tax data and determined if each individual had a tax liability in applicable years. We analyzed DOR's results to determine the percentage of scholarship recipients and non-recipients working in Georgia each year, by graduation year.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix C: Current Authorization and Borrower Status, as of 6/30/17

Program	Current Authorization	Active Borrowers[1]	In Repayment Status	Cash Repayment	Service Repayment	% Service Repayment
University of North Georgia Military Scholarship	O.C.G.A. 20-3-420	311	121	45	76	63%
Georgia Military College State Service Scholarship	Appropriations Acts, GSFA Regulations	174	43	26	17	40%
Georgia National Guard Service Cancelable Loan	O.C.G.A. 20-3-374(b)(2)	24	6	6[2]	0	89%[3]
Scholarship for Engineering Education	Appropriations Acts, GSFA Regulations	711	248	159	89	36%
Scholarship for Engineering Education for Minorities	GSFA Regulations	275	35	23	12	34%
Student Access Loan (low interest loan)	Appropriations Acts, GSFA Regulations	13,966	5,022	5,019	3	0.1%
Veterinary Loan Repayment Program	O.C.G.A. 20-3-518	5	5	N/A	5	100%
Medical-Related Rural Area Assistance Program	O.C.G.A. 34-31-1	44 (Physicians) 8 (Dentists) 10 (APRNs) 10 (PAs)	All	None	44 (Physicians) 8 (Dentists) 10 (APRNs) 10 (PAs)	100%

[1] For in-school programs, active borrowers includes those in school, grace, deferment, or making repayments through cash or service.

[2] At the end of each semester, Georgia National Guard Service Cancelable Loan recipients are required to provide verification to GSFA that they complied with service repayment requirements (i.e., maintained a 2.0 GPA and active duty in National Guard). Those that fail to meet requirements are required to repay funds with interest (prime plus 1%).

[3] Figure is based on the 28 individuals who received awards in fiscal year 2017. Three of the 28 (11%) did not meet the service requirement and are in cash repayment. The other three borrowers in cash repayment received loans prior to 2009.

Source: GSFA, GBPW, and GDA data

The Performance Audit Division was established in 1971 to conduct in-depth reviews of state-funded programs. Our reviews determine if programs are meeting goals and objectives; measure program results and effectiveness; identify alternate methods to meet goals; evaluate efficiency of resource allocation; assess compliance with laws and regulations; and provide credible management information to decision makers. For more information, contact us at (404)656-2180 or visit our website at www.audits.ga.gov.