

Executive Summary

Aboriginal Head Start Making A Difference in the Northwest Territories

Longitudinal Evaluation Report:

*Aboriginal Head Start in the
Northwest Territories: 2001 to 2008*



**NORTHWEST TERRITORIES
ABORIGINAL
HEAD START
PROGRAM**

Evaluation of Aboriginal Head Start in Northern and Urban Communities (AHSUNC):

The Northwest Territories (NWT)

Overview of AHSUNC in the Northwest Territories

Aboriginal Head Start in Urban and Northern Communities (AHSUNC) is a federally funded early childhood intervention program for young Aboriginal children and their families. AHSUNC programs support the spiritual, emotional, physical and intellectual growth of each child. There are 11,000 children across Canada who participate in Aboriginal Head Start.

Components for each program include culture and language, education and school readiness, health promotion, nutrition, social support and parental involvement. Currently there are eight AHSUNC programs in the Northwest Territories (NWT) in the communities of Fort Smith, Hay River, Fort Providence, Bechoko, Yellowknife/Ndilo, Inuvik, Paulatuk and Fort McPherson.

Previous Evaluation Studies

In 1998, the NWT as one territory (prior to the division in 1999) completed a summative and descriptive review of the first two years of operation. For most sites, no child or parent data was collected other than satisfaction surveys.

Following the first summative review, the Western Arctic Aboriginal Head Start

Council (WAAHSC) decided to conduct an outcome evaluation of the seven AHSUNC programs that were in operation at that time.

In 2000, WAAHSC developed a model of outcome evaluation in consultation with experienced personnel in psychometrics, evaluation design and community-based evaluation with culturally-distinct groups, as well current best practices in the evaluation of early childhood programs in North America. The model was a pre/post-test quasi-experimental design of school readiness and program quality, and is referred to as the "NWT AHS Model of Program Evaluation."

In 2003-2004, the NWT AHS model was repeated, which provided for a baseline monitoring of over 300 NWT children, ages three to four years old.

During the 2000-2001 and 2003-2004 study timelines, a longitudinal pilot was completed in Fort McPherson with AHSUNC graduates and their age-matched peers who did not attend the program.

Both longitudinal pilot studies in kindergarten/grade one, and in grades three and four provided promising results regarding the use of the NWT evaluation model, including tool selection and administration procedures. The interest was forthcoming these two pilot studies

within WAAHSC in replicating these longitudinal studies in other NWT communities with Aboriginal Head Start.

The results for the 2000-2001 and 2003-2004 evaluation studies of AHSUNC in the NWT showed the following;

1. NWTAHS programs have “good to excellent” classroom quality, as measured on the ECERS-R (n=6 sites).

Classroom quality in the AHSUNC program forms the basis for a safe, culturally-sensitive and nurturing learning environment.

2. NWTAHS children displayed significant improvement in school readiness skills from the fall to the spring for the 2001 (n=43) and 2004 (n=33) cohorts.

3. There was considerable diversity in skill levels among NWTAHS children; children who started the program with lower levels of skills, showed larger gains during the AHSUNC program year.

4. Results for the 2001 and 2004 cohorts of NWTAHS children indicated the acquisition of social skills such as cooperation, assertion and self-control, with a slight difference between boys and girls.

5. The two longitudinal pilot studies of AHS graduates indicated these children did better on measures of grade level achievement and social skills, as compared to their age-matched peers who did not attend the program.

6. The NWTAHS model of program evaluation has contributed to the increasing evaluation capacity within WAAHSC and AHS sites.

Longitudinal Evaluation in 2008

The NWT was well positioned with existing baseline child-outcome data from 2000-2001 and 2003-2004 to complete a longitudinal evaluation study in 2008.

The purpose of the longitudinal evaluation of NWTAHS in 2008 was to conduct a culturally relevant and independent evaluation of the impact of the AHSUNC program on NWTAHS graduates years after they had attended the program in NWT communities.

The design of the longitudinal evaluation study was consistent with the methodology of the NWTAHS Model of Program Evaluation, in its emphasis on a limited number of indicators of school readiness, maintaining ownership and control of the study with WAAHSC, using culturally-sensitive procedures for data collection and adhering to accepted principles of psychometric measurement.

The evaluation questions for the 2008 longitudinal evaluation of AHS in the NWT NWTAHS were:

Evaluation Questions

1. What skills and knowledge do AHS children have years after they have attended the AHS program (longitudinal view)?

Do these skills differ from their peers (cross-sectional)?

2. How do the children's skills vary across skill areas such as literacy in reading/writing, math and social skills?
3. Are there differences in achievements among AHS children who enter the program with lower or higher skills and knowledge (longitudinal and cross-sectional)?
4. Do the achievements of the AHS children differ among the two cohort groups studied, that is the 2000-2001 and the 2003-2004 groups of AHS children?
5. Are there differences in the patterns of skills and achievements for AHS children based on classroom quality measures?

Longitudinal Study Methodology

The longitudinal evaluation study of AHS in the NWT included a sample of 98 school age children who had previously attended the AHS programs from 2000-2001 to 2006-2007; a sub-sample 60 AHS graduates were assessed in 2008, for which baseline data was available from their AHS program year in 2000-2001 & 2003-2004.

This sample of NWT AHS children that could be followed over time represented 27% of the original baseline sample groups from the 2000-2001 and 2003-2004 outcome evaluation studies.

The comparison group which included the NWT AHS children's age matched peers in the same classroom, included 133 children from grades three and six, or ages 8-9 years and 11-12 years respectively. No baseline or pre-test data was available for this comparison group.

Therefore, the total sample for this longitudinal study was $n= 231$ children (AHS and their peers of the same age group) and who were from four NWT communities; Yellowknife/Ndilo, Bechoko, Hay River and Fort Providence.

The measures used for the longitudinal evaluation of AHS in the NWT sampled children's developing literacy, social skills and receptive vocabulary;

- 1) *Brigance Preschool Screen (Brigance, 2005)*: a tool used by AHSUNC teachers to identify school readiness and developmental learning, while children were in the AHS program.
- 2) *Peabody Picture Vocabulary Test or PPVT-IV (Dunn and Dunn, 2007)*: a measure of literacy used in the AHS program and the school data collection.
- 3) *Wechsler Individual Achievement Test, Abbreviated or WIAT-II-A (Wechsler, 2001)*: a measure of reading, numeracy and word writing used in the school data collection.

- 4) *Social Skills Rating Scale or SSRS (Gresham and Elliot, 1990)*: a rating scale used by teachers to identify social skills in the AHS program and in the school data collection.

The use of standardized assessment measures also permits comparisons of the skills of NWT AHS children in the sample, and norm sample children of the same age.

Limitations of the Longitudinal Evaluation of AHS in the NWT

There are limitations in the design and interpretation of the findings for this longitudinal study with AHS in the NWT.

Firstly, the data collection was limited to NWT communities in the southern part of the territory and the findings could be attributed to school and community factors beyond the influence of AHS.

Secondly, methodology factors such as sampling issues, use of abbreviated measures and interpretation of effect sizes and other statistical limitations preclude the extrapolation of the findings in this longitudinal study to other AHS programs.

As well, the measures used in this longitudinal study are standardized with North American norm-referenced groups that are based on census breakdowns, and which are inclusive of scores for Native Americans.

No equivalent measures have been developed solely for the Canadian population, with Canadian norms being developed for selected measures.

Despite the limitations, this longitudinal study provides the AHS programs in the NWT with practical and useful information for ongoing program development and assists in the furthering of an evaluation agenda with AHSUNC.

Findings

AHSUNC and Receptive Vocabulary

Both AHS graduates and their age-matched peers scored in the 21st to 25th percentile on the receptive vocabulary measure in 2008. Also, there were no significant differences between the two sample groups ($p=.09$); $n=231$.

Both the AHS and the age-matched peers were within the average range for receptive vocabulary, a measure of overall verbal abilities and cognitive potential. In comparison to the norm-referenced sample of children these 2008 scores were within the average range of scores for their age.

AHSUNC and School Work Achievement

Both AHS graduates and their age-matched peers scored in the 8th to 16th percentile on the school achievement measures in 2008. Also, there were no significant differences between the two sample groups for reading ($p=.18$), numerical operations ($p=.17$) and word writing ($p=.57$), as measured on the WIAT-II-A; $n=231$.

Therefore, both the AHS and the age-matched peers were within similar percentile ranges for school work achievement. In comparison to the norm-referenced sample of children these 2008 scores were below the expected range of scores for their age.

Longitudinal Gains from Baseline to Follow-up in 2008

The longitudinal follow-up of a sub-group of AHS children in 2008 was limited to a small sample of grade three children ($n=18$) who

were available for assessment in 2008. Based on the follow-up of the 2004 cohort, AHS graduates in grade three showed a consistent level of verbal skills as measured on the PPVT-IV (27th percentile in 2004 and 28th percentile in 2008). Both the 2004 and 2008 scores were within the low-average range, as compared to the norm-referenced sample.

Therefore, AHS students maintained their progress and/or gains made during the AHS program year through to 2008.

A sample of AHS children from the 2000-2001 AHS year through to the 2008 data collection followed a similar pattern of maintenance of their general cognitive skills (66th percentile in 2001 and 23rd percentile in 2008). Both the 2001 and 2008 scores were within the average-low average range, as compared to the norm-referenced sample.

Caution is needed in the interpretation of these longitudinal findings, due to the limited sample size for each result.

Cross-Sectional Comparison of AHS Graduates and Grade Level Differences

Results in one NWT AHS community revealed similar receptive vocabulary and school achievement for AHS graduates in grades one to three, as compared to AHS graduates in grades five and six. That is there were no between group differences found between grade levels (verbal ability scores $p=.59$).

As such, there was no “fade-out” for NWT AHS children, as documented in the early intervention literature, when comparing different grade level groups.

Cross-Sectional Comparison of AHS Graduates and Gender Differences

Gender differences were looked at from a cross-sectional perspective within the AHS graduates in 2008, as there is reported differences in the early childhood literature.

Within the AHS group in 2008 for all grade levels, the girls approached the level of significance for Word Writing ($p = .054$), that is girls could write more words as per the measure than AHS boys.

There were no significant differences between AHS boys and girls on the remaining measures of verbal abilities or PPVT-IV ($p = .54$), WIAT-Reading ($p = .15$) and WIAT- Math ($p = .35$).

Further comparisons of gender differences among different grade levels were investigated, and there were no differences among the different grades in terms of gender differences.

Cross-Sectional Comparison of AHS Graduates and Urban/Community Differences

Differences in the receptive vocabulary and verbal skills were found between to the AHS graduates who attended urban programs and schools as compared to those AHS graduates who attended remote/rural AHS programs in the NWT.

A similar patten was evident for the age-matched peers, as their receptive vocabulary and verbal skills were also significantly higher in the urban centres as compared to remote/rural communities.

Variations in the Classroom quality measure that is the ECERS-R ratings in 2000-2001 and 2003-2004, may be contributing to the urban/remote differences, and/or in addition to other issues not studied here.

Caution is indicated here in the interpretation of this result, due to methodology limitations.

Other Findings- Social Skills and Comparison to FACES (2000)

Social Skills data, as measured by the SSRS was only collected in one NWT AHS community ($n = 39$). Classroom teachers completed the rating scale, as did AHS teachers for the AHS students in 2000-2001 and 2003-2004.

Both AHS boys and girls scored within the 40th percentile or average range, as compared to the norm-referenced sample. These results are consistent with the AHS Social Skills ratings from baseline data collection in 2000-2001 and 2003-2004.

The Head Start Family and Child Experiences Survey or FACES collects data on a nationally representative sample of American Head Start programs. The results for a 2003 cohort of Head Start children showed a pattern of progress in receptive vocabulary from the Head Start program through to the early elementary grades.

In comparison, the NWT AHS scores of receptive vocabulary on the same measure, revealed a consistent pattern from the AHS program year through to their NWT schooling. Scores were comparable to the US figures on the PPVT-IV measure.

Longitudinal Evaluation Study- Successes and Challenges

The implementation of the 2008 evaluation study of AHS in the NWT was successful in gaining a substantial amount of longitudinal and cross-sectional AHS data from four NWT communities, and within restricted timeframes.

The methodology used here was well received by the AHS graduates and their age-matched peers, with no adverse effects reported during and following the administration of the standardized measures. In fact, the AHS graduates and their age-matched peers reported the experience to be fun and “better than being in class.” There were no refusals to complete the measures.

The NWT AHS sites completed necessary liaison work with their community schools, so as to complete permission and consent procedures as indicated by each school. Generally, there was interest in the longitudinal study with AHS graduates within each participating school and community.

There were some challenges in completing the work due to severe weather at the end of January/2008 that caused school closures, student absenteeism, as well as miscommunication with some school personnel, who were unfamiliar with program evaluation methodologies for early childhood programs.

The allowance of sufficient time in the planning, implementation and de-briefing of the NWT AHS evaluation study would address most of the challenges faced in the 2008 study, and would likely address sampling issues.

An advanced timeline of 12-18 months is needed in working with community schools and District Authorities in the NWT, so as to inform all applicable personnel and to work through all necessary procedures.

Discussion & Final Comments

As a first multi-site longitudinal study of AHS in the NWT, WAAHSC and participating communities can be proud of their accomplishment.

The completion of this study provides the NWT AHS sites with the capacity to report on important aspects of program outcomes beyond quarterly administrative and process type information. As well, the procedures used in the baseline studies and in 2008 allow for continued measurement and follow-up with additional cohorts of AHS graduates in the years to come.

The methodology used here continues to be well received in the NWT due in part to its basis from the existing North American literature on early childhood evaluation and its relevance to the interests of NWT AHS program staff and managers.

The findings reported here in 2008 are consistent with similar studies of a longitudinal nature and early childhood programs. AHS graduates in the NWT are **“holding their own”**, when it comes to school achievement and verbal abilities, as compared to their age-matched peers.

It is reasonable to conclude that the findings from this study are encouraging for the AHS program in the NWT, and can assist the sites in continued program developments and growth, especially in terms of curriculum development, programming and staff training.

The evaluative focus that already exists within WAAHSC can only lead to the further generation of new knowledge about

effective practices for the Aboriginal Head Start movement in the NWT.

There are many areas to learn more about including the influence of program length and duration on AHS graduates, the effects of age of entry into the program (three or four year old program), the impact of use of an early childhood curriculum and others.

For now, it is good to take caution in assessing early evaluation results, including those in this 2008 study, as many AHS programs, including those in the NWT need more time for development. Early evaluation results are best used to lead program improvements, and this the NWT AHS should be applauded for as they take their next steps in developing their own NWT AHS curriculum.

In conclusion, it is continued collaboration among AHS practitioners, policy makers and evaluation personnel that will add to the foundation of knowledge of the NWT AHS program.

Communities and AHS families provide the support and courage for children to lead happy and healthy lives, and it is the AHS children that bring the energy, excitement and hope forward to make it all happen.

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Appendices

Appendix A Successes from the Past

**Appendix B NWT AHS Model of Program
Evaluation**

Appendix C Summary of Measures

Appendix A

Successes from the Past: Western Arctic Aboriginal Head Start Council

In February, 2007, the Western Arctic Aboriginal Head Start Council continued to look forward with respect to program evaluation, and specifically for this proposed work, follow-up with children who are post their Head Start program.

Two small studies have been done in Fort McPherson to determine the progress of Aboriginal Head Start graduates.

AHSUNC sites in the NWT continue to collect yearly data on school readiness, social skills and classroom quality for year to year evaluations, with the last full set of site reports completed in December of 2004.

Highlights of AHS evaluation in the Northwest Territories:

1. AHSUNC sites in the NWT were provided with on-site training in data collection with child centered measures that address school readiness, social skills and parent surveys in the Fall of 2000; sites continue at their direction to include these child measures in their AHSUNC programs.
2. AHSUNC sites were assessed with the Early Childhood Environment Rating Scale, a measure of classroom and equipment quality and the program, in 2000-01 and 2003-04 for all seven sites, and many sites have conducted yearly ECERS reviews.
3. AHSUNC sites completed data collection in the fall & spring, providing for a pre-test/post-test analysis. This is an effective way to measure changes in skills and school readiness skills.
4. The follow-up study results are promising, indicating significant differences in school achievement (reading, math and spelling) for children who attended AHSUNC in their preschool years, as compared to children who did not attend AHSUNC in grades 3, 4, and 5.
5. AHSUNC sites in the NWT continue to provide evidence of the success of AHSUNC from a Canadian perspective. Few AHSUNC sites across Canada have a data base from which to build a study of AHSUNC children once they enter the school system, that is feasible and with few measurement and reliability/validity issues.
6. AHSUNC in the NWT are unique sites who have pooled their resources and efforts to produce yearly NWT evaluation information, qualitative reports and outcome data of their participants. The NWT has an evaluation environment that is conducive to site specific outcome evidence.
7. In 2004, the NWT AHS outcome evaluation for 2003-04 was accepted for a poster presentation at the Seventh National Research Conference for Head Start in Washington, DC- July-2004.

8. The NWT AHSUNC completed an anniversary publication: “10 Years of Aboriginal Head Start in the NWT” with a subsequent public launch of the results on February 14, 2007 in Yellowknife, NT.
9. In 2008, the NWT AHS was accepted to present as a full program symposium presentation at the Ninth National Research Conference for Head Start in Washington, DC-July 2008.

Symposium: To test or Not To Test: Lessons to Inform Policy and Practice from the Evaluation of Head Start in Eight Culturally Distinct Communities.

10. Continued interest by individual AHSUNC sites to complete their own longitudinal study with their NWT AHS graduates.

Appendix B

The NWTAHS Model of Program Evaluation

Appendix C

Early Childhood Environment Rating Scale (Revised Edition) -ECERS

Author & Year:	Harms, T., Clifford, R.M., and Cryer, D.- revised edition 1998
Publisher:	Teachers College Press,
Age:	For all early childhood programs (including culture-specific programs for children under age 6 years)
Time needed:	3 hours of classroom of observation-minimum.
Training needed:	Knowledge of early childhood & qualitative documentation
Materials:	ECERS material, early childhood classroom, plain paper

- Ratings are through the observation and scored into five scores- inadequate quality, minimal quality, average quality, good quality and excellent quality.
- Ratings are done through the cultural/language context of the observer
- Measure can be repeated on a yearly basis either through self-monitoring or external review for quality management purposes.

Comments:

The ECERS classroom quality measure has become a standard and baseline measure for many early childhood programs in North America.

As a qualitative tool, it provides feedback on classroom quality, development as well as being culturally sensitive and relevant for work with AHSUNC. It has been used with the NWT AHSUNC since 2000.

What the instruments tells us?

- Samples the classroom quality of an early childhood classroom;
- 37 areas are monitored and grouped into seven areas: Space and Furnishings, Personal Care Routines, Language-reasoning, Child Activities, Teacher-Child interaction, Program structure and scheduling, parental involvement and staff and management issues;
- Can provide classroom quality ratings, and information for program improvement and enhancement;

How does this instrument work?

Brigance Preschool Screen-II

Author & Year:	A.H. Brigance 1 st edition 1985, 2 nd edition 1998
Publisher:	Curriculum Associates
Age:	Three and four year old children (screens available for children 2 to 7 yrs) - Children are interviewed by the teacher or evaluator
Time needed:	10-15 Minutes
Training needed:	Knowledge of early childhood & screening procedures
Materials:	Screen, scoring sheet, paper, pencil, open space

What the instrument tells us?

- Assesses children's skills in a range of areas including fine and gross motor, language, general knowledge and school readiness skills.
- Gives norm-referenced tables to compare scores with a national sample.
- Can provide information about children with possible language and learning problems; can identify children with possible academic talent.
- Can provide information about growth and development over time (Growth indicators).

How does this instrument work?

- The child is asked to perform tasks that are typical of preschool programs; the screening book outlines the questions for the interviewer.
- The skills measured are consistent with child development
- A score is added up after the child has completed the tasks; analysis by evaluation team follows.

Comments:

The Brigance Screens are clear, easy to use and provide information about children's development in a timely and fun manner for the child.

The research on the Brigance screens is well documented and provides good statistical features (test-retest, inter-rater and internal consistency).

Social Skills Rating Scale (SSRS)

Author & Year: F.M. Gresham and S.N. Elliott, 1990.

**Publishers/
Distributor:** PsyCan

Age: For children 3-18 yrs, teacher/student & parents complete the scale

Time needed: 10-20 minutes

Training needed: Training of the scale; analysis done by evaluation consultants with expertise in psychometric testing

Materials: Scale and quiet area

- The prosocial skills measured are consistent with child development;
- A score is added up and analysis by the evaluation team follows.

Comments:

The SSRS is clear and easy to scale of positive child behaviours, as rated by either classroom teachers and/or parents. The research on the SSRS is well documented and it has excellent statistical features (reliability and validity).

The SSRS is one of the few scales available today for the review of positive social skills in Head Start, and has been used by early childhood programs, including Aboriginal Head Start and the United States Head Start programs.

What the instrument tells us about children:

- The scale emphasizes positive behaviours or pro-social skills that are related to academic functioning. Examples of behaviours include: sharing, helping, and relationships.
- Samples children's skills in three areas of social skill development: social skills, problem behaviours, and academic competence.
- Gives norm referenced tables to compare children.

How does the instrument work?

- The instrument is a scale that teachers/students/parents complete;
- The scale measures how a child demonstrates prosocial skills;

Peabody Picture Vocabulary Test (PPVT-IV)

Author & Year:	Lloyd M. Dunn, Leota M. Dunn & K.T. Williams; 1 st edition 1959, most recent 2007.
Publisher/ Distributor:	PsyCan
Age:	For people 2.6-90+ years (test has increasing challenge)
Time needed:	10-15 minutes
Training needed:	Conducted by experienced personnel in testing, or as trained and supervised by experienced personnel in psychometrics.
Materials:	PPVT-IV, scoring sheet and quiet area

How does the instrument work?

- The test consists of drawings which are presented to the child. The examiner says a word and the child is asked to point to the right picture. The test provides an idea of language and learning potential.
- The evaluation team would administer, score and review the results.

Comments:

The Peabody Picture Vocabulary Test-IV (PPVT-IV) is the standard tool used in most of the evaluation and research studies of children's thinking or cognitive abilities.

This measure has excellent statistical features (reliability and validity). The Peabody tool is widely used in early childhood evaluation, including Head Start and Aboriginal Head Start.

What the instrument tells us about children?

- The PPVT-IV is a test of receptive vocabulary, which is a general measure of learning and school readiness.
- The test serves as a screening test of verbal ability and can be used as one element of the evaluation of preschool and school age children.
- It is a useful tool for preschool children and those with grade level delays, as it does not require reading/math skills.
- Gives results in percentiles and age equivalents using norm referenced tables and results, that which is representative of a North American Population and is inclusive of Aboriginal groups and other minorities.

Wechsler Individual Achievement Test - Abbreviated (WIAT-II-A)

Author & Year:	David Wechsler, 2001.
Publisher:	The Psychological Corporation
Age:	6-85 years (has levels of increased challenge)
Time needed:	10-20 minutes
Training needed:	Training needed in assessment procedures; specific expertise needed for interpretation of results from these standardized measures.
Materials:	Examiner's manual, record form, word, reading, spelling card, pencil, paper and quiet area.

Comments:

The Wechsler Individual Achievement Test-Second Edition-Abbreviated (WIAT-II-A) is a quick, easy, and reliable test. The measure not only tracks academic skills, but also what interventions children may need.

The WIAT-II-A is a measure that has been used with Canadian children, Aboriginal children and also with Aboriginal Head Start in the Northwest Territories.

Statistical norms are available for Canada that are based on a breakdown of Canadian groups for a number of the Wechsler instruments, and differ only very slightly (higher) from other North American norms.

What the instrument tells us about children:

- The test also identifies skill deficits in attention/spelling, reading and math, with an overall indication of school learning, achievement and readiness.

How does the instrument work?

- The examiner takes the reading, spelling, or number card and covers the card with the screen. The child tells the examiner what is shown on the card or writes their response on paper.
- The WIAT-II-A tests children in the areas of: basic reading, mathematics reasoning, spelling and attention, reading comprehension, numerical operations, listening comprehension, oral expression and written expression.

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Contributors:

Western Arctic Aboriginal Head Start Council:

Joyce McCleod, WAAHSC Chair and Fort Providence AHS., Reanna Erasmus, Ndilo AHS., Diana Tuckey, Fort Smith AHS., Rennie Squirrel, Hay River AHS., Louise Richardson, Bechoko AHS, Donna Rogers, Inuvik AHS., Irene Ruben, Paulatuk AHS., and Julie Ann Blake and Kathy Nerysoo, Fort McPherson AHS.

And

Chalmers & Associates Consulting Ltd:

Dr. Jennifer H. Chalmers, Liz Cayen, Dr. Cheryl Bradbury and Dr. Marjan Saghatoleslami