

RAISING AWARENESS OF CONGENITAL CMV EVALUATION



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Introduction

CJFHC educates health care providers of pregnant and postpartum women about CMV through our partnerships with 14 member hospitals and numerous obstetric practices throughout the state. Information was provided at various educational activities including continuing education for nurses, professional conferences, and ongoing continuous quality improvement activities for member hospitals and care providers. CJFHC is utilizing its strong relationship with the NJDOH to share information statewide and promote advocacy at the state level, and assist in evaluating newborn screening efforts related to cCMV in New Jersey.

Educating Healthcare Professionals, Parents and Childcare Providers

The goal of the education program is to raise awareness and prevent cCMV among women of childbearing age in our service area. To meet this goal CJFHC is using a multi-stage approach to providing comprehensive cCMV education. The target population for education includes women of childbearing age who are pregnant, planning to become pregnant, or parenting; healthcare providers; child care workers; and community agencies providing services to women in our region. Inclusion of these populations in the educational programming is being done through current programs available at CJFHC. Education and awareness activities are also targeting CJFHC staff in order to incorporate education about cCMV into their interactions with clients.

To assess the effectiveness of the program, a pre-, post-survey design was implemented. The pre-, post-survey design is aimed at assessing knowledge prior to beginning the program and upon completion of the education. Both surveys ask questions regarding knowledge of risk factors, behaviors and intervention.

Participation

During the 2018-2019 grant year, CJFHC hosted a total of 12 in person CMV educational sessions where pre post questionnaires were administered.

CJFHC hosted one CMV for Healthcare Professionals Webinar. During this webinar, 30 providers completed the pre-survey and 22 providers completed the post survey. The data collected from these surveys accounts for the information shared below.

Knowledge

Overall, knowledge increased between pre- and post-survey at both 6-month and one-year evaluation for healthcare providers, childcare providers and parents, suggesting that participation in the education increased knowledge of multiple areas related to CMV. There was an overall average knowledge increase as determined by the both types of surveys of 46.5% for all participants. The remainder of this section provides a summary of pre- and post-survey results at 6 months and end of the program.

First Six Grant Months Evaluation

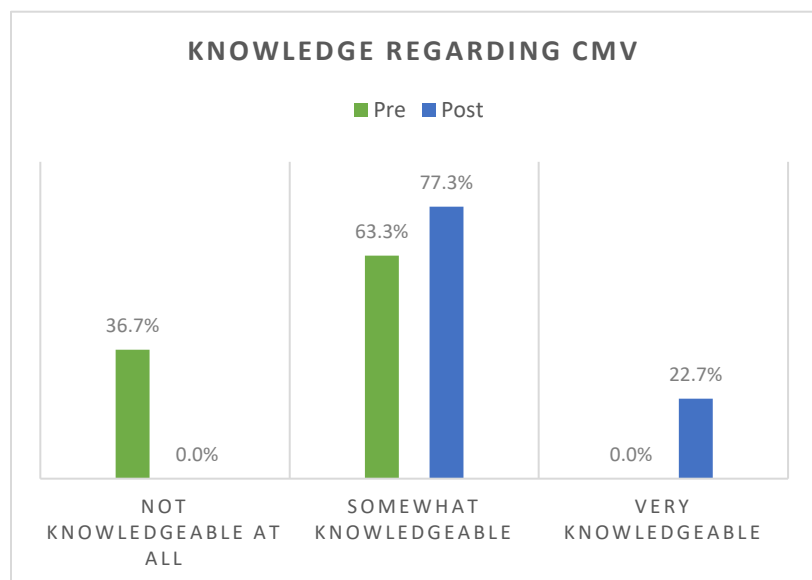
Cytomegalovirus Survey for Healthcare Professionals

Demographics

Approximately 57% of respondents to the healthcare provider pre-survey have a bachelor's degree, 27% have a graduate degree, 10% have an associate's degree and 7% have some college. Sixty-six percent of respondents are white, 14% are Asian, 14% are Hispanic and 7% are black. All respondents are female. Approximately 27% of respondents are 50-59 years old, 23% are 30-39, 20% are 40-49 years old, 20% are 60 or older and 10% are 21-29 years old. Three percent of respondents have a household income of \$25,000 to \$49,999, 24% reported a household income of \$50,000 to \$99,999, 45% reported a household income of \$100,000 and up and 28% chose not to answer the question.

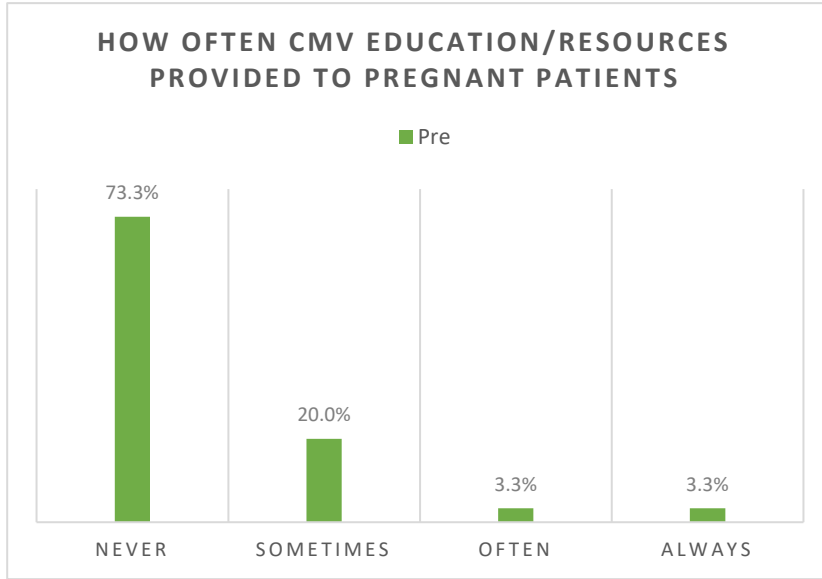
CMV Knowledge

Healthcare professionals were asked questions regarding Cytomegalovirus in order to assess knowledge gain after training. Healthcare professionals showed substantial knowledge gain in post-survey results. At pre-survey 37% of respondents reported no knowledge of CMV and this rate decreased to 0% of post-survey respondents. At pre-survey 63% reported being somewhat knowledgeable and this rate increased to 77% of post-survey respondents. At pre-survey 0% reported being very knowledgeable and this rate increased to 23% of post-survey respondents.



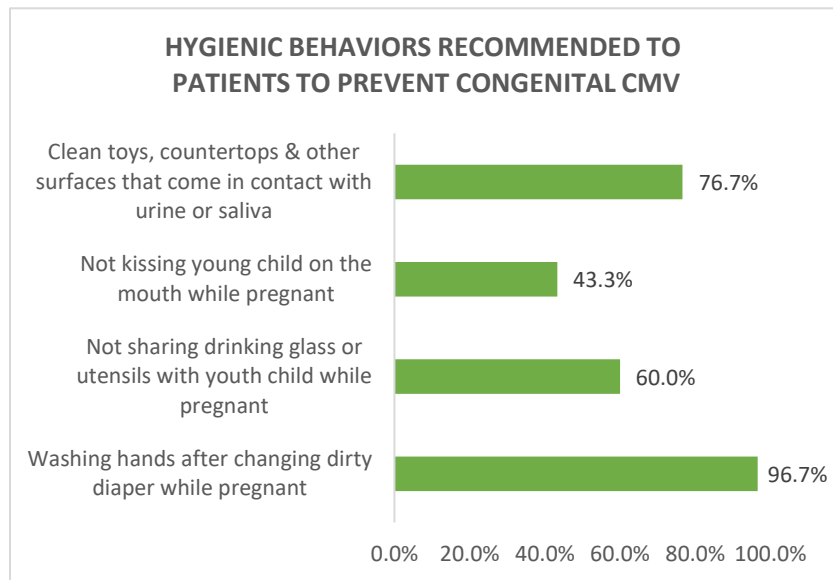
Education/Resources Provided

Healthcare professionals were asked how often they provide education or resources to their pregnant patients about CMV. 73% of respondents reported they never provide education or resources, twenty percent responded they sometimes give education and resources, 3% reported they often did this and 3% reported they always give pregnant patients education and resources about CMV

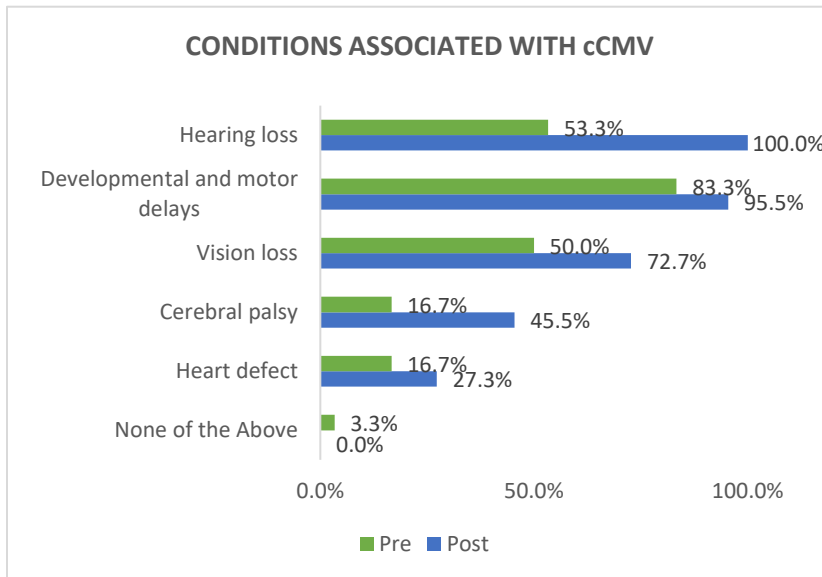


Hygienic Behaviors Recommended

Healthcare professionals were asked what hygienic behaviors they recommended to their patients to prevent congenital CMV. Seventy seven percent of respondents recommended their patients not kiss a young child on the mouth while pregnant, 60% of respondents were recommending their patients not share a drinking glass or utensils with a young child while pregnant, 77% percent of pre-survey respondents were recommending their patients clean toys, countertops and other surfaces that come in contact with urine or saliva and 97% percent of respondents were recommending hand washing after changing a dirty diaper while pregnant.



Conditions Associated with cCMV

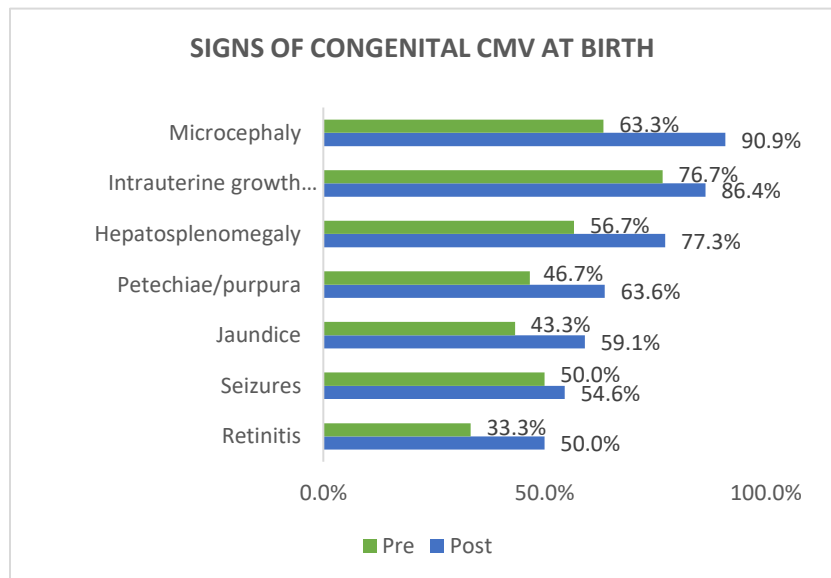


Participants were asked regarding what conditions are associated with cCMV. Respondents showed substantial knowledge gain. At pre-survey, 53% percent of respondents chose hearing loss and this rate increased to 100% at post-survey. A majority of respondents reported that developmental and motor delays were associated with cCMV at pre-survey (83%) and this rate improved at post-survey (96%). At pre-survey, 50% percent of respondents chose vision loss and this rate increased to 73% at post-survey. Seventeen percent of respondents chose cerebral palsy at pre-survey and this rate increased to 46% at post-survey. At pre-survey, 17% percent of respondents incorrectly chose heart defect and this rate increased to 27% at post-survey.

At pre-survey, 50% percent of respondents chose vision loss and this rate increased to 73% at post-survey. Seventeen percent of respondents chose cerebral palsy at pre-survey and this rate increased to 46% at post-survey. At pre-survey, 17% percent of respondents incorrectly chose heart defect and this rate increased to 27% at post-survey.

Signs of Congenital CMV

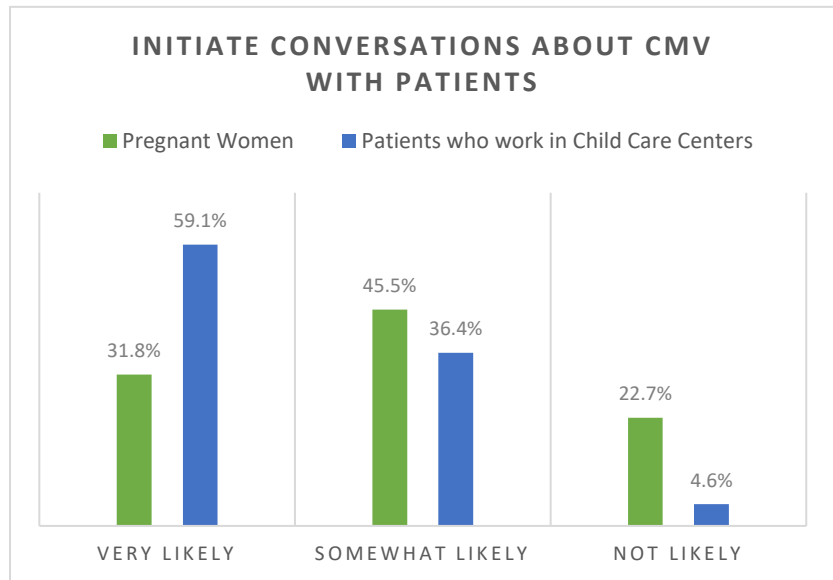
Participants were asked regarding what the signs of congenital CMV are at birth. Respondents showed substantial knowledge gain. At pre-survey, 63% percent of respondents chose Microcephaly and this rate increased to 91% at post-survey. A majority of respondents reported that intrauterine growth restriction is a sign of congenital CMV at birth at pre-survey (77%) and this rate improved at post-survey (86%). At pre-survey, 5% percent of respondents chose



chose Hepatosplenomegaly and this rate increased to 77% at post-survey. Forty-seven percent of respondents chose Petechiae/purpura at pre-survey and this rate increased to 64% at post-survey. At pre-survey, 43% percent of respondents chose Jaundice and this rate increased to 59% at post-survey. Post-survey respondents correctly chose seizure and retinitis at higher rates when compared to the pre-survey.

Conversations about CMV

Healthcare professionals were asked how likely they were to initiate conversations about CMV with pregnant women and patients who work in child care centers on the post-survey. The majority of respondents reported being somewhat likely (46%) and very likely (32%) to initiate conversations with pregnant women about CMV while 23% said they were not likely to initiate conversations with pregnant women. Approximately 59% of respondents to the post-survey reported being very likely to discuss CMV with patients who work in child care centers, 36% reported being somewhat likely and 4.6% were not likely to discuss CMV with patients who work in child care centers.



Cytomegalovirus Survey for Parent/Child Care Provider

Participation

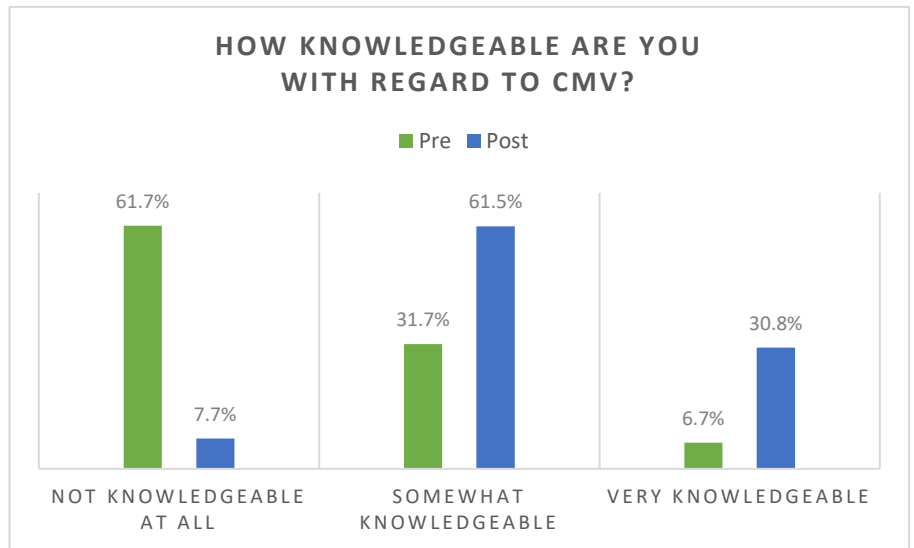
A total of 108 Child Care Providers and 18 Early Intervention Providers received formalized CMV trainings. 60 participants completed the parent/child care providers pre-survey and 39 attendees completed the post survey. Results of these findings are shared below.

Demographics

Approximately 37% of respondents to the parent/childcare provider pre-survey have a graduate degree, 34% have a bachelor's degree, 12% have an associate's degree, 10% are high school graduates and 7% have some college. Eighty percent of respondents are white, 14% are Hispanic, 3% are black and 3% are other. Ninety seven percent of respondents are female and 3% are male. Approximately 31% of respondents are 50-59 years old, 25% are 30-39, 20% are 40-49 years old, 17% are 60 or older and 5% are 21-29 years old. Twenty seven percent of respondents have a household income of \$25,000 to \$49,999, 9% reported a household income of \$50,000 to \$99,999, 30% reported a household income of \$100,000 and up and 20% chose not to answer the question.

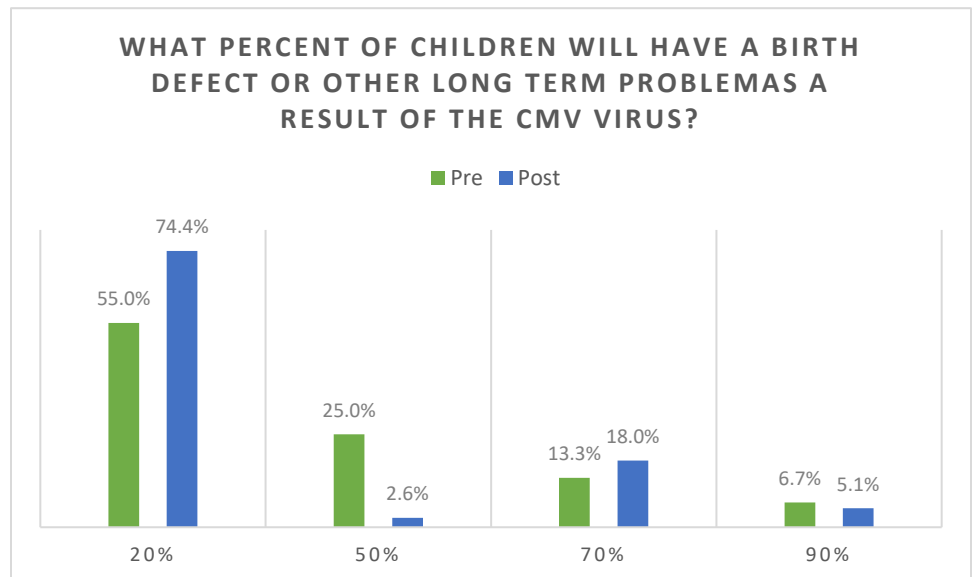
CMV Knowledge

Parent/childcare providers were asked questions regarding Cytomegalovirus in order to assess knowledge gain after training. Parent/childcare professionals showed substantial knowledge gain in post-survey results. At pre-survey 61.7% of respondents reported no knowledge of CMV and this rate decreased to 7.7% of post-survey respondents. At pre-survey 31.7% reported being somewhat knowledgeable and this rate increased to 61.5% of post-survey respondents. At pre-survey 6.7% reported being very knowledgeable and this rate increased to 30.8% of post-survey respondents.

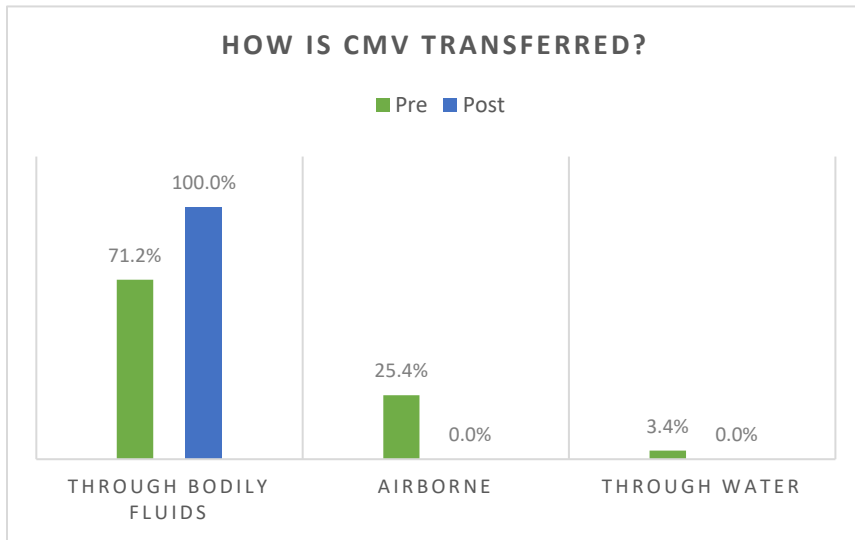


Birth Defect

Parents/childcare providers were asked a series of knowledge questions regarding CMV including what percent of children will have a birth defect or other long-term problem as a result of the CMV virus? At pre survey 55% reported 20% and at post-survey 74.4% answered 20%, which is the correct answer showing an increase in knowledge gained.



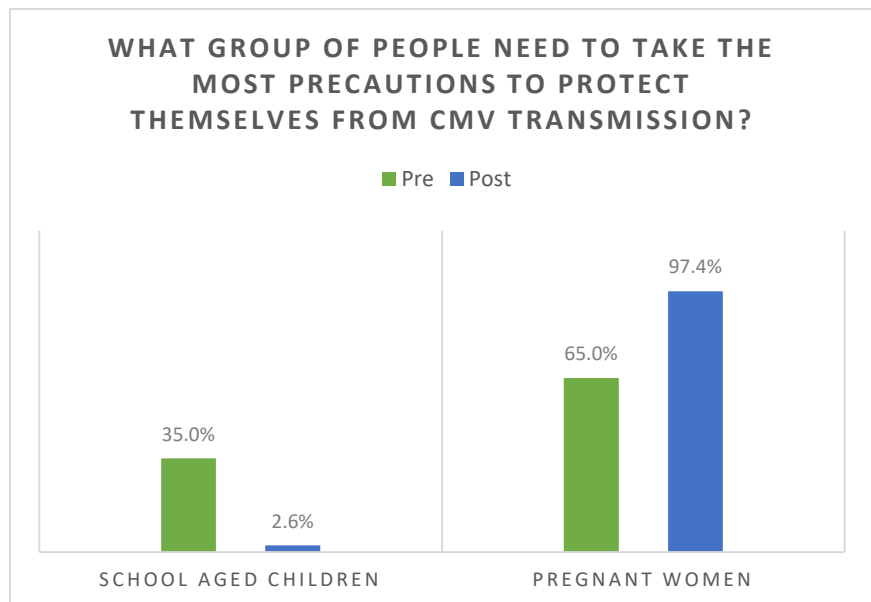
CMV Transferred



Respondents were asked how CMF is transferred. At pre-survey, 71% answered through bodily fluids which increased to 100% post-survey (this is the correct answer).

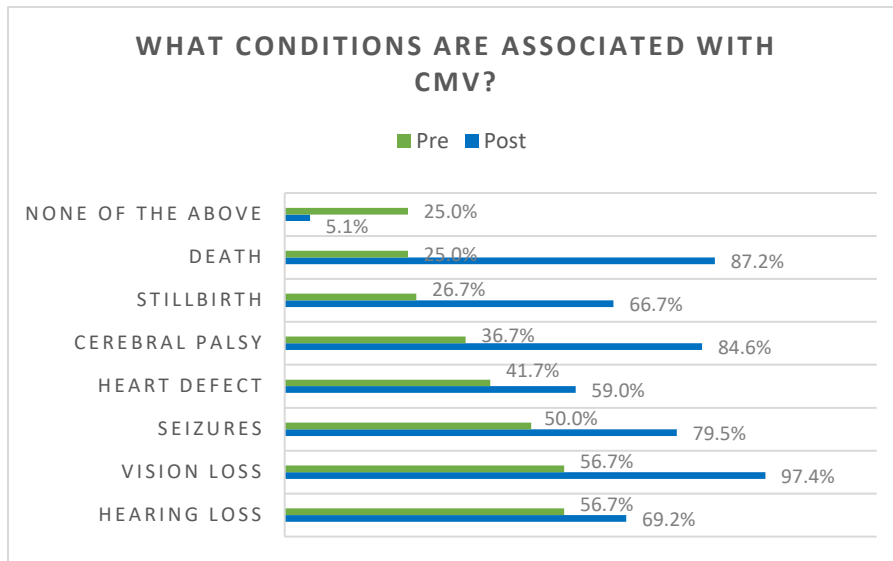
Special Precautions

Respondents were also asked what group of people need to take the most precautions to protect themselves from CMV transmission. At pre-survey 65% chose the correct answer, pregnant women, and at post-survey 97% child the correct answer.



Conditions Associated with CMV

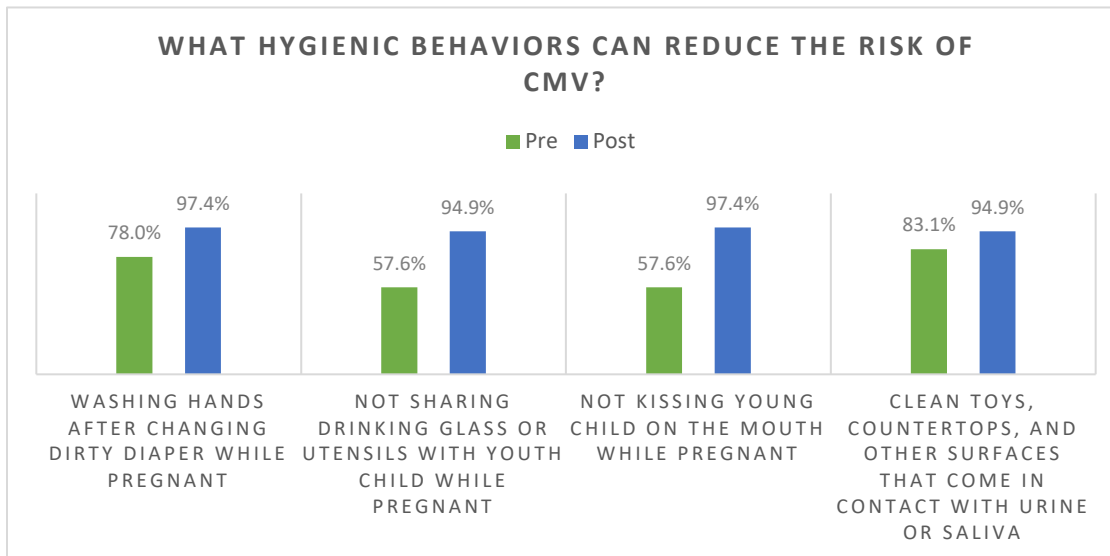
Respondents were asked what medical conditions are caused by CMV and instructed to check all that apply. The correct answer is all but heart defect. At pre-survey 25% answered none of the above which



decreased to 5.1% post-survey; at pre-survey 25% answered death and 87.2% answered death at post-survey; at pre-survey 26.7% answered stillbirth which increased to 66.7% at post-survey; at pre-survey 36.7% answered cerebral palsy which increased to 84.6% post-survey; at pre-survey 50% answered seizures which increased to 79.5% post-survey; at pre-survey 56.7% answered vision loss which increased to 97.4% post-survey; and at pre-survey 56.7% answered hearing loss which increased to 69.2% post-survey. The only incorrect answer was heart defect, which respondents answered yes to 41.7% pre-survey and 59% post-survey.

post-survey; and at pre-survey 56.7% answered hearing loss which increased to 69.2% post-survey. The only incorrect answer was heart defect, which respondents answered yes to 41.7% pre-survey and 59% post-survey.

Reduce Risk of CMV



Parents/childcare providers were also asked what hygienic behaviors can reduce the risk of CMV and instructed to check all that apply. The correct answer was all of the above. At pre-survey 78% answered washing hands after changing dirty diaper while pregnant which increased to 97.4% post-survey; at pre-survey 57.6% answered not sharing drinking glass or utensils with youth child while pregnant which increased to 94.9% post-survey; at pre-survey 57.6% answered not kissing young child on the mouth while pregnant which increased to 97.4% post-survey; and at pre-survey 83.1% answered clean toys,

countertops, and other surfaces that come in contact with urine or saliva which increased to 94.9% post survey.

Likelihood of Incorporating Hygienic Behaviors

At post-survey, respondents were asked how likely they are to incorporate hygienic behaviors into daily practice? Ninety percent responded Very Likely and 10% responded Somewhat Likely.

Difficulty in Incorporating New Behaviors

Respondents were also asked how difficult they think it will be for you to modify behaviors to prevent CMV? Forty-five percent responded Very Easy, 29% responded Easy, and 26% responded Neither Easy nor Hard. When asked how likely are you to discuss CMV risk with your health care provider 49% responded Very Likely, 31% Somewhat Likely, and 20% Not Likely.

Full Grant Year Evaluation

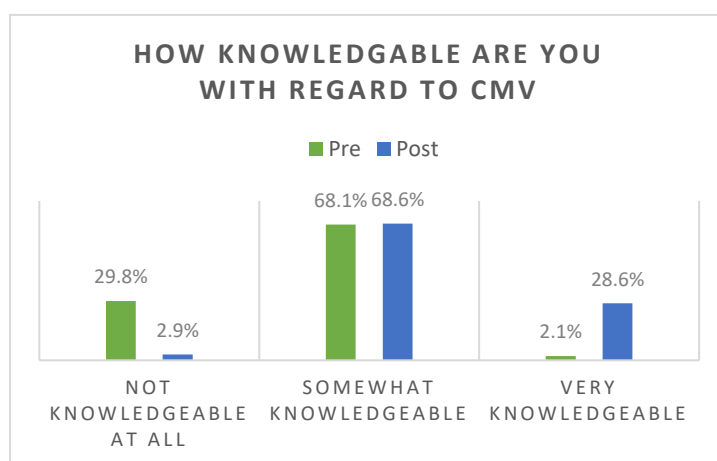
Cytomegalovirus Survey for Healthcare Professionals

Demographics

During the full grant year, 47 participants completed the pre-survey for healthcare professionals and 35 completed the post-survey for healthcare professionals. Approximately 66% of respondents to the healthcare provider pre-survey have a bachelor's degree, 21% have a graduate degree, 9% have an associate's degree and 4% have some college. Sixty five percent of respondents are white, 11% are Asian, 17% are Hispanic and 4% are black. Ninety percent of respondents are female and 2% are male. Approximately 32% of respondents are 21-29 years old, 21% are 50-59, 17% are 40-49 years old, 17% are 30-30 and 13% are 60 and over. Four percent of respondents have a household income of \$25,000 to \$49,999, 18% reported a household income of \$50,000 to \$99,999, 36% reported a household income of \$100,000 and up and 38% chose not to answer the question. 10 Audiology Graduate Students, 1 Senior Clinical Speech Pathology Supervisor, 1 Speech Language Pathology Graduate Student, 23 Registered Nurses, 1 Supervisor, 2 Home Visitor, 2 Nurse Educators, 1 Health Care Case Manager, 1 Advanced Practice Nurse, 1 Nurse Manager, 1 Clinical Outcomes Manager, 1 Staff Nurse, 1 Lactation Consultant and 1 Maternal Child Health Coordinator responded to the pre-survey.

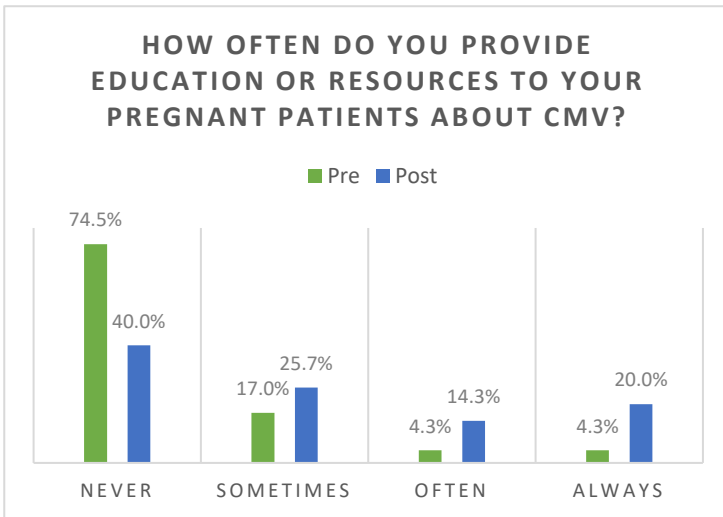
CMV Knowledge

Healthcare professionals were asked questions regarding Cytomegalovirus in order to assess knowledge gain after training. Healthcare professionals showed substantial knowledge gain in post-survey results. At pre-survey 30% of respondents reported no knowledge of CMV and this rate decreased to 3% of post-survey respondents. At pre-survey 68% reported being somewhat knowledgeable and this rate stayed essentially the same with 69% of post-survey respondents. At pre-survey 2% reported being very knowledgeable and this rate increased to 27% of post-survey respondents.



Education/Resources Provided

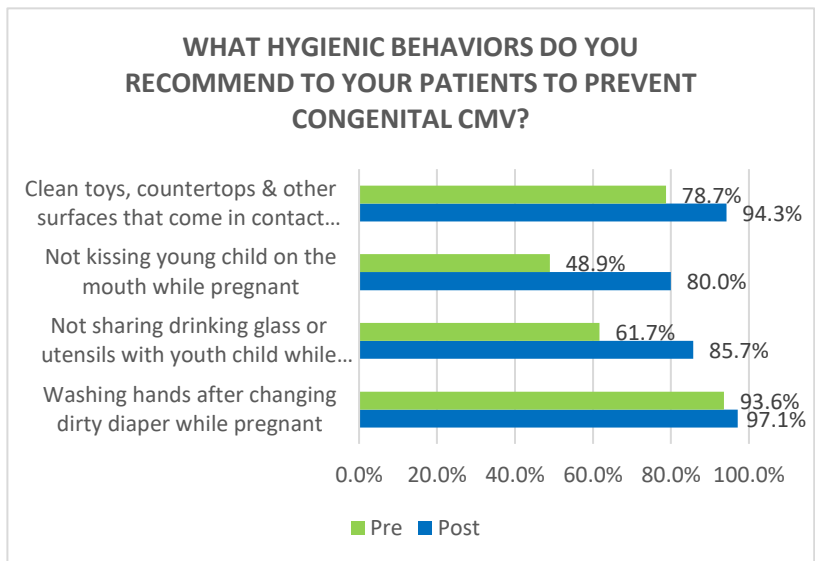
Healthcare professionals were asked how often they provide education or resources to their pregnant patients about CMV. Seventy five of respondents reported on the pre-survey they never provide



education or resources which decreased to 40% on the post survey, 17% responded they sometimes give education and resources and on the post survey this increased to 26%, respondents reported 4% for providing materials often or always, which increased to 14% reported they often did this and 20% reported they always give pregnant patients education and resources about CMV.

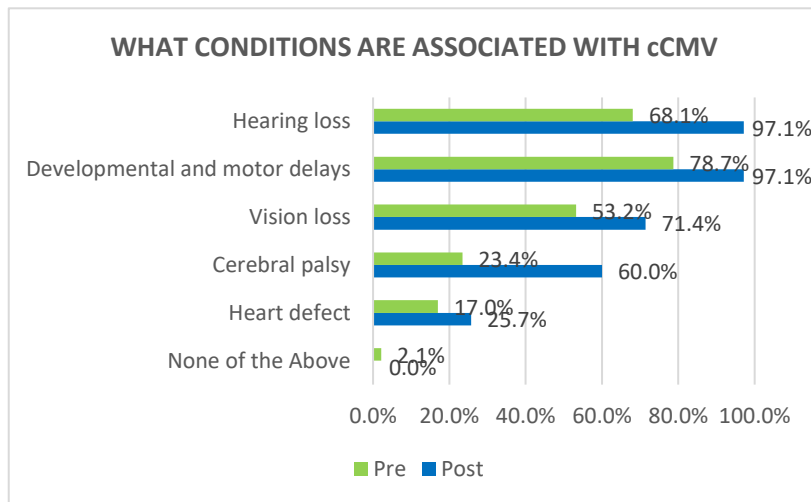
Hygienic Behaviors Recommended

Healthcare professionals were asked what hygienic behaviors they recommended to their patients to prevent congenital CMV. On the pre-survey, 48% of respondents recommended their patients not kiss a young child on the mouth while pregnant, 61% percent of respondents were recommending their patients not share a drinking glass or utensils with a young child while pregnant, 78%of pre-survey respondents were recommending their patients clean toys, countertops and other surfaces that come in contact with urine or saliva and



94% of respondents were recommending hand washing after changing a dirty diaper while pregnant. On the post-survey all survey responses increased, with 80% of respondents recommended their patients not kiss a young child on the mouth while pregnant, 86% percent of respondents were recommending their patients not share a drinking glass or utensils with a young child while pregnant, 94% of post-survey respondents were recommending their patients clean toys, countertops and other surfaces that come in contact with urine or saliva and 97% of respondents were recommending hand washing after changing a dirty diaper while pregnant.

Conditions Associated with cCMV

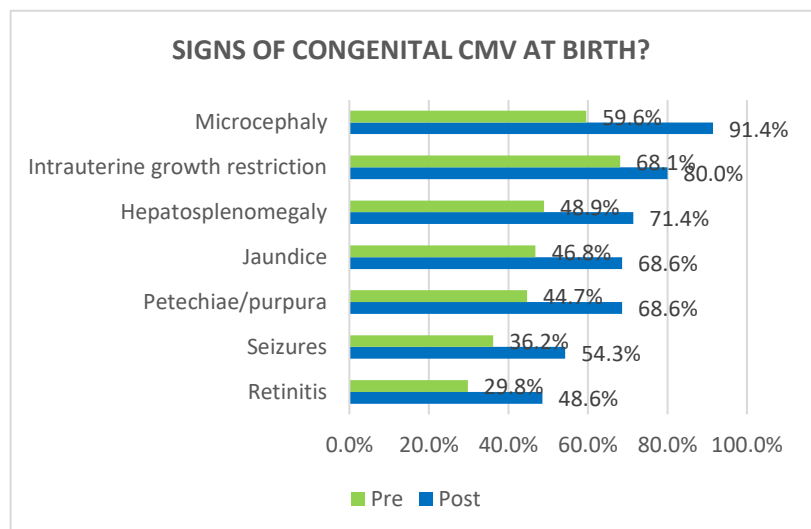


Participants were asked regarding what conditions are associated with cCMV. Respondents showed substantial knowledge gain. At pre-survey, 68% percent of respondents chose hearing loss and this rate increased to 97% at post-survey. A majority of respondents reported that developmental and motor delays were associated with cCMV at pre-survey (79%) and this rate improved at post-survey (76%). At pre-survey, 53% percent of respondents chose vision loss and this rate increased to 71% at post-survey. Twenty-three percent of respondents chose cerebral palsy at pre-survey and this rate increased to 60% at post-survey. At pre-survey, 23% percent of respondents incorrectly chose heart defect and this rate increased to 26% at post-survey.

this rate increased to 71% at post-survey. Twenty-three percent of respondents chose cerebral palsy at pre-survey and this rate increased to 60% at post-survey. At pre-survey, 23% percent of respondents incorrectly chose heart defect and this rate increased to 26% at post-survey.

Signs of Congenital CMV

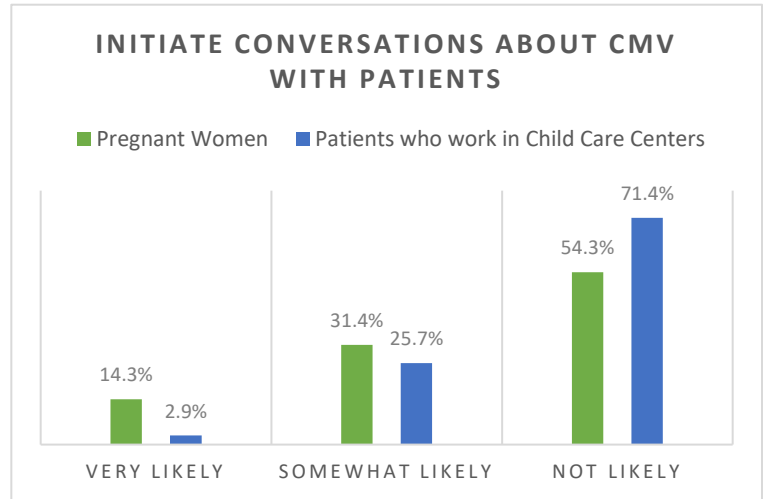
Participants were asked regarding what the signs of congenital CMV are at birth. Respondents showed substantial knowledge gain. At pre-survey, 60% percent of respondents chose Microcephaly and this rate increased to 91% at post-survey. A majority of respondents reported that intrauterine growth restriction is a sign of congenital CMV at birth at pre-survey (68%) and this rate improved at post-survey (80%). At pre-survey, 49% percent of respondents chose Hepatosplenomegaly and this rate increased to 71% at post-survey. Forty-five percent of respondents chose Petechiae/purpura at pre-survey and this rate increased to 69% at post-survey. At pre-survey, 47% percent of respondents chose Jaundice and this rate increased to 69% at post-survey. Post-survey respondents correctly chose seizure and retinitis at higher rates when compared to the pre-survey.



Participants were asked regarding what the signs of congenital CMV are at birth. Respondents showed substantial knowledge gain. At pre-survey, 60% percent of respondents chose Microcephaly and this rate increased to 91% at post-survey. A majority of respondents reported that intrauterine growth restriction is a sign of congenital CMV at birth at pre-survey (68%) and this rate improved at post-survey (80%). At pre-survey, 49% percent of respondents chose Hepatosplenomegaly and this rate increased to 71% at post-survey. Forty-five percent of respondents chose Petechiae/purpura at pre-survey and this rate increased to 69% at post-survey. At pre-survey, 47% percent of respondents chose Jaundice and this rate increased to 69% at post-survey. Post-survey respondents correctly chose seizure and retinitis at higher rates when compared to the pre-survey.

Conversations about CMV

Healthcare professionals were asked how likely they were to initiate conversations about CMV with pregnant women and patients who work in child care centers on the post-survey. Nearly half of respondents reported being Somewhat likely (31%) or Very likely (14%) to initiate conversations with pregnant women about CMV while 54% said they were Not likely to initiate conversations with pregnant women. Approximately 3% of respondents to the post-survey reported being Very likely to discuss CMV with patients who work in child care centers, 26% reported being Somewhat likely and 71% were Not likely to discuss CMV with patients who work in child care centers.



Knowledge Increase

There was an overall average knowledge increase as determined by the surveys of 49.2% for healthcare providers.

Cytomegalovirus Survey for Parent/Child Care Provider

Participation

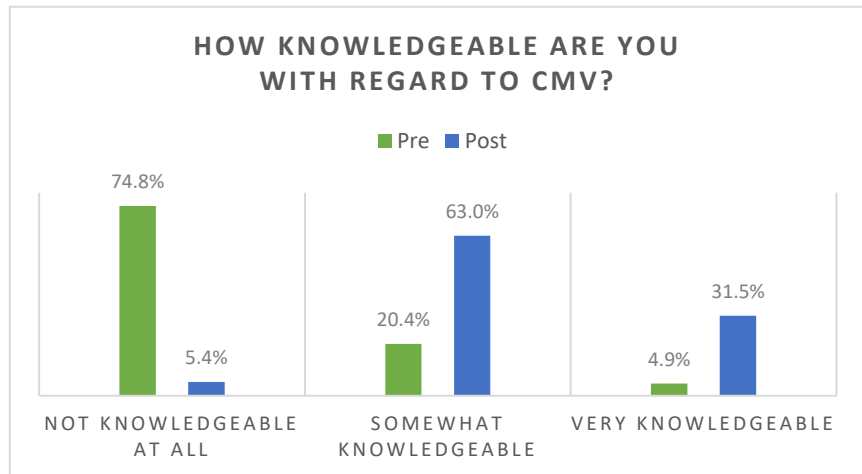
A total of 108 Child Care Providers and 18 Early Intervention Providers received formalized CMV trainings in which pre and post surveys were distributed. 309 participants completed the parent/child care providers pre-survey and 276 attendees completed the post survey. Results of these findings are shared below.

Demographics

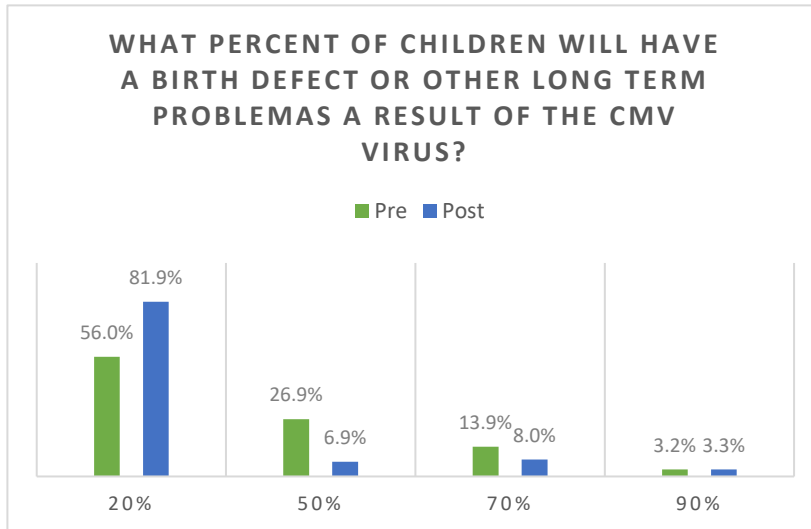
Approximately 39% of respondents to the parent/childcare provider pre-survey have a bachelor's degree, 21% have some college but no degree, 18% have a graduate degree, 11% have an associate's degree and 12% are high school graduates. Eighty percent of respondents are white, 14% are Hispanic, 3% are black and 3% are other. Ninety three percent of respondents are female and 7% are male. Approximately 33% of respondents are 21-29 years old, 21% are 30-39, 15% are 50-59 years old, 15% are 40-49, 8% are 40-49 and 7% are 60 and older. Twenty five percent of respondents have a household income of \$25,000 to \$49,999, 19% reported a household income of \$50,000 to \$99,999, 27% reported a household income of \$100,000 and up and 27% chose not to answer the question.

CMV Knowledge

Parent/childcare providers were asked questions regarding Cytomegalovirus in order to assess knowledge gain after training. Parent/childcare professionals showed substantial knowledge gain in post-survey results. At pre-survey 74.8% of respondents reported no knowledge of CMV and this rate decreased to 5.4% of post-survey respondents. At pre-survey 20.4% reported being somewhat knowledgeable and this rate increased to 63% of post-survey respondents. At pre-survey 4.9% reported being very knowledgeable and this rate increased to 31.5% of post-survey respondents.



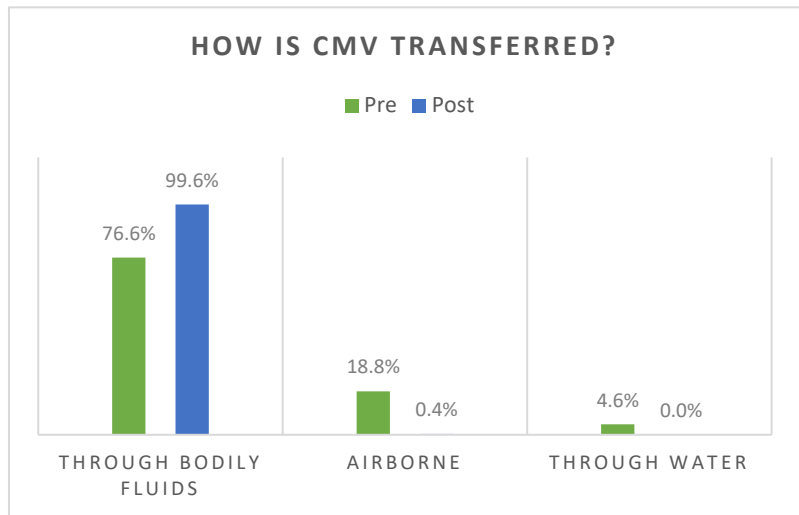
Birth Defects



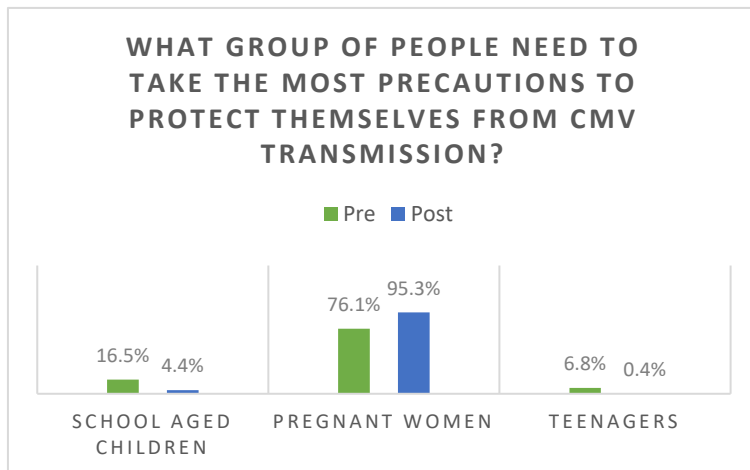
Parents/childcare providers were asked a series of knowledge questions regarding CMV including what percent of children will have a birth defect or other long-term problem as a result of the CMV virus? At pre survey 56% reported 20% and at post-survey 81.9% answered 20%, which is the correct answer showing a 25.9% increase in knowledge gained.

CMV Transferred

Respondents were asked how CMV is transferred. At pre-survey, 77% answered through bodily fluids which increased to 100% post-survey (this is the correct answer).



WHAT GROUP OF PEOPLE NEED TO TAKE THE MOST PRECAUTIONS TO PROTECT THEMSELVES FROM CMV TRANSMISSION?

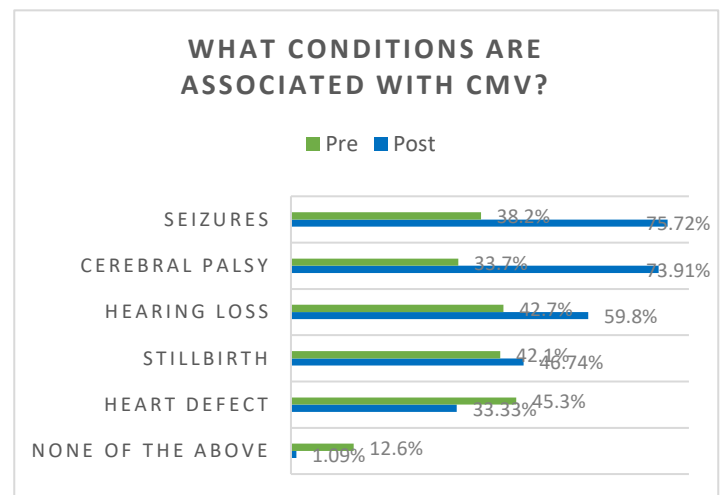


Special Precautions

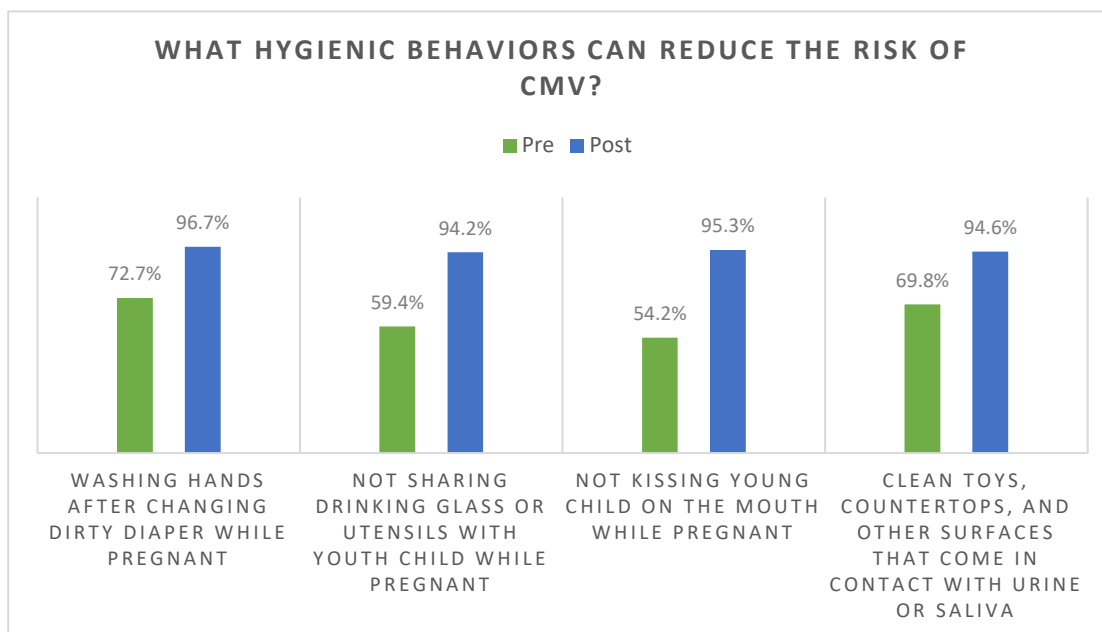
Respondents were also asked what group of people need to take the most precautions to protect themselves from CMV transmission. At pre-survey 76% chose the correct answer, pregnant women, and at post-survey 95% chose the correct answer.

Respondents were asked what medical conditions are caused by CMV and instructed to check all that apply. The correct answer is all but heart defect. At pre-survey 13% answered none of the above which decreased to 1% post-survey; at pre-survey 42.1% answered stillbirth which increased to 46.7% at post-survey; at pre-survey 33.7% answered cerebral palsy which increased to 73.9% post-survey; at pre-survey 38.1% answered seizures which increased to 75.7% post-survey and at pre-survey 42.7% answered hearing loss which increased to 59.8% post-survey. The only incorrect answer was heart defect, which respondents answered yes to 45.3% pre-survey and 33.3% post-survey.

Conditions Associated with CMV



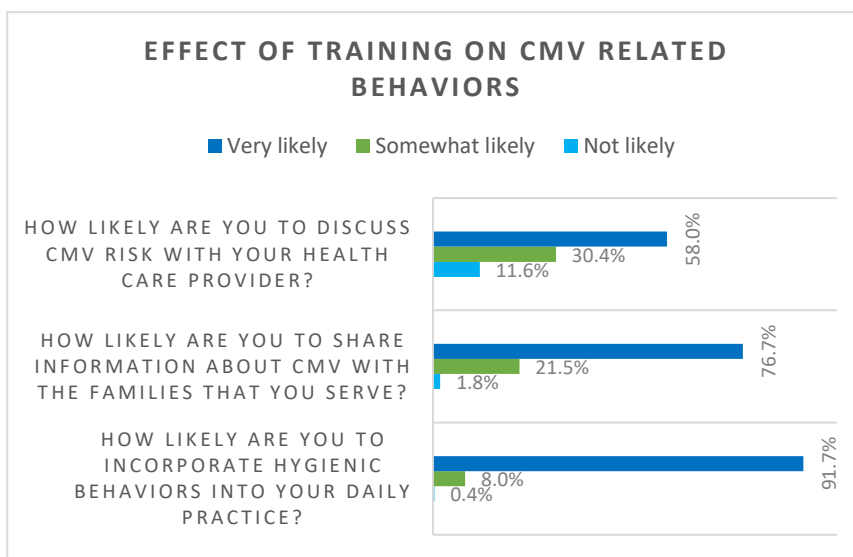
Reduce Risk of CMV



Parents/childcare providers were also asked what hygienic behaviors can reduce the risk of CMV and instructed to check all that apply. The correct answer was all of the above. At pre-survey 73% answered washing hands after changing dirty diaper while pregnant which increased to 96.7% post-survey; at pre-survey 59.4% answered not sharing drinking glass or utensils with youth child while pregnant which increased to 94.2% post-survey; at pre-survey 54.2% answered not kissing young child on the mouth while pregnant which increased to 95.3% post-survey; and at pre-survey 69.8% answered clean toys, countertops, and other surfaces that come in contact with urine or saliva which increased to 94.6% post survey.

Likelihood of Incorporating Hygienic Behaviors

At post-survey, respondents were asked how likely they are to discuss CMV risk with your healthcare provider, how like they are to share information about CMV with the families they service and how likely they are to incorporate hygienic behaviors into your daily practice? Respondents were most likely to incorporate hygienic behaviors into daily practice with 91.7% Very Likely, 8% Somewhat Likely and 0.4% Not Likely. Fifty eight percent were Very Likely to discuss CMV risk with their healthcare provider, 30.4% were Somewhat Likely, and 11.6% reported that they will Not Likely discuss their CMV risk with the healthcare providers. Over 75% of respondents reported they were Very Likely to



Over 75% of respondents reported they were Very Likely to

share information about CMV with the families that they serve, 21.5% were Somewhat Likely and 1.8% were Not Likely to share information about CMV with the families that they serve.

Knowledge Increase

There was an overall average knowledge increase as determined by the surveys of 43.8% for parents and childcare providers.