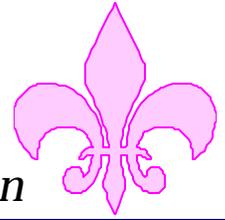




# ACDA Notes



*From the Alveolar Capillary Dysplasia Association*

Volume 4, Issue 4

<http://www.acd-association.com>

Fall 2002

Dear Friends,

The holidays are fast approaching, and for many of us, they will be especially difficult without our babies here to celebrate with us. Madonna Myers provided the article on page 7 that provides some ideas on how to cope with the holidays. Many people find that doing something creative in memory of their child gives them a sense of accomplishment and worth so we hope that you find your own special way to remember your babies this holiday season. Also in this issue of the newsletter, we focus on fundraising activities and ideas. We have been given a wonderful opportunity to help find a cure for ACD with the establishment of an ACD research fund at the National Organization for Rare Disorders (NORD). Two of our families, the [REDACTED], have been instrumental in leading this fundraising effort. See the article on page 1 to read about their efforts.

Have a wonderful holiday season and our best to you and your families during the new year.

*Fondly,*

*Steve and Donna Hanson*

[sdhanson@flash.net](mailto:sdhanson@flash.net)

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## Fundraising News

Now that an ACD research account has been set up at the National Organization for Rare Disorders (NORD), all of us have a means to contribute financially to finding a cause and cure for ACD. Two of our ACDA families have been busy raising money to contribute to this effort in memory of their children.

[REDACTED] have raised over \$500 in two Bose Wave Radio raffles held during the last year. They sent the money to NORD in honor of their son, [REDACTED]. Thanks to Bose, [REDACTED] former employer, who donated the radios.

One of our newest families, the [REDACTED] of New York, are currently working on plans to open "[REDACTED]," a women's only 30 minute circuit gym. [REDACTED] daughter, [REDACTED], died earlier this year at seven months of age. [REDACTED] are opening the gym in a commercial building they already own and thought it would be a great honor to dedicate the gym to [REDACTED]. The gym will include a picture of [REDACTED] and a beautiful poem that a fifteen year old friend of theirs wrote for her. There will also be a saying "not to take life for granted and to always be thankful for what you have."

They have decided that for every membership paid they will donate \$1 to NORD. The [REDACTED] will also post information in the gym that will encourage members to donate additional funds to ACD research. They feel that people will appreciate that some of their money is being used for a good cause.

Madonna Myers has come across a simple fundraiser offered by Tupperware. The fundraiser requires a family to make about 50 sales averaging \$15 per order. ACDA would receive about 40% of the MSRP and the proceeds can be sent directly to NORD's ACD fund. Please contact Madonna at Myers at [myers531@earthlink.net](mailto:myers531@earthlink.net), if you are interested in this fundraising opportunity.

The upcoming holidays may provide many of us and our friends and family members an opportunity to make a donation to NORD in memory of our child. Again,

*Continued on page 2*

Continued from page 1

## In Memory of [REDACTED]

Small Hands To Match Small Feet  
Innocent Eyes Asking Why  
The Strength You Kept Inside  
Your Love To Be Kept Alive

Although Your Time Was Short  
Your Courage Rises Forth  
The Inspiration For Survival  
Lies Within Your Grateful Smile

The Person Of You To Come  
Of That We'll Never Know  
But For What We'll Hold Onto  
Is The Love To Us You Showed

The Significance Behind Your Being  
Defies Your Purpose For Leaving  
Unspoken Words  
Are What Have Been Heard

For The Rest Of This Walk  
Down This Inevitable Road  
The Lessons You Taught  
Of Love And Bravery  
With Which You Fought  
For Now As We Step Forward  
We'll Take With Us

Written by Chelsea Piazza, a friend of  
the [REDACTED]  
May 24, 2002

here is the information you, friends or family need to send a financial contribution to NORD:

- Make the check payable to NORD -"Restricted Research Fund for Alveolar Capillary Dysplasia"
- Send your check to:  
National Organization of Rare Disorders  
P.O. Box 1968  
Danbury, CT 06813-1968

Thanks to the [REDACTED] families for their fundraising efforts on behalf of ACD. With their help and yours, we can raise the \$35,000 needed for a NORD research grant to study ACD. ∞

## Announcements

- As of September 15, there is \$2,750 in the ACD research fund at NORD. The account at NORD is set up in the name "Dysplasia, Alveolar Capillary."
- Dr. Bassem Bejjani, a clinical geneticist and the lead doctor on the ACD study, recently moved to the University of Washington. He will continue to work with the Baylor Houston researchers and Dr. Langston. Dr. Bejjani now has access to a more powerful genotyping and sequencing machine for the ACD research. If you need to reach him, here is his new contact information (please note he will be out of the country November 8-23).

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*Searching for Answers,  
Hoping for a Cure . . .*



*"I f tears could build a stairway and memories a lane,  
I 'd walk right up to H eaven and bring you home again."*

From [REDACTED] engraved on a stepping stone in their memorial garden for their son Christopher

# Update on ACD Genetic Study

The ACD Study team presented a summary of their research and findings to date at the Annual Meeting of the American Society for Human Genetics held in Baltimore on October 15th -19th, 2002. Bassem Bejjani M.D. and Partha Sen Ph.D have been kind enough to share this information with us and excerpts are provided below. We will attempt to post the entire presentation on the ACD website in the near future to make the Pathology summary, test methods and photomicrographs (which are not printed here) available to everyone. We have provided some medical definitions of the more technical terms at the bottom of each page for your convenience. However, if you have any questions concerning the data presented herein, please contact Dr. Bejjani or Dr. Sen.

## Abstract

Alveolar Capillary Dysplasia (ACD) is a rare and lethal developmental anomaly of the pulmonary vasculature. It is generally described as the failure of formation of the normal air-blood diffusion barrier in the newborn lung. ACD is usually associated with misalignment or displacement of the pulmonary veins. The disease presents very early in infancy, usually after a few hours of normal breathing. Infants become critically ill very rapidly in the first days of life with severe hypoxemia and pulmonary hypertension. There is no cure for ACD. The disease is uniformly lethal. Standard therapies include mechanical ventilation, high concentrations of inspired oxygen, inhaled nitric oxide and ECMO support. These therapies may prolong life by days to weeks, but have led to no long-term survival. We have established a close working relationship with the ACD Association, the only parent support organization and have already collected 29 families, each with one or more infant with ACD in preparation for positional mapping and eventually cloning the ACD gene(s). Clinical records and pathological samples from affected individuals, and DNA from affected and unaffected individuals, were obtained. Our review of the pre and postmortem records of 24 affected individuals allows us to define better both the natural history of this condition and the associated anomalies with the ACD phenotype. Our collection of families corroborates the possible recessive nature of this condition and provides additional data for genetic and prenatal counseling. Analysis of the various associated anomalies allows us to formulate a hypothesis regarding possible candidate genes and/or signaling pathways. The material collected here represents the largest cohort of ACD patients ever assembled. It also allows for positional mapping of the putative ACD gene as a first step towards understanding this condition. Perception of the clinical spectrum of ACD and cloning the responsible "gene", have implications for counseling, for prenatal testing, and for comprehending the molecular pathophysiology of ACD and other organ malformations that are associated with this condition.

*Continued on page 4*

## Medical Definitions:

**Hypoxemia:** Subnormal oxygenation of arterial blood, short of anoxia.

**Anoxia:** Absence or almost complete absence of oxygen from inspired gases, arterial blood or tissue.

**Pulmonary hypertension:** High blood pressure in the pulmonary arteries. Normally, the pressure in the pulmonary arteries is low (compared to that in the aorta). Pulmonary hypertension can irrevocably damage the lungs.

**Phenotype:** The appearance resulting from the interaction of the genetic makeup of a person with the environment.

## Results

- Our review of the pre and postmortem records of affected individuals allows us to define better, not only the natural history of this condition, but also the associated anomalies with the ACD phenotype. Further, analysis of the various associated anomalies allows us to formulate a hypothesis regarding possible candidate genes and/or signaling pathways.
- We have collected 29 families, each with one or more infants with ACD in preparation for positional mapping and eventually cloning the ACD gene(s) (Figure 1). Clinical records and pathological samples from affected individuals were obtained and analyzed from 24. Table 1 summarizes the clinical and pathological findings in these individuals. Seventy four percent of the affected individuals have major organ malformations. These include defects in the urogenital system, malrotation of the intestine, defects in the heart development among others. Most pregnancies were term and uncomplicated. However, a small percentage of the cases had oligohydramnios. Average life span was 24.7 days.

## Discussion

- The co-occurrence of lung, gut, heart, and GU anomalies in these patients suggest that the genetic defect that causes ACD also affects normal development of these other organs. Also, the presence of ACD in siblings born to consanguineous parents suggests a recessive mode of inheritance, although a dominant defect with decreased penetrance, or with parental gonadal mosaicism cannot be excluded.
- Important genes involved in the normal development of the pulmonary, gastrointestinal, renal and cardiovascular systems would be possible candidates. These would include genes that code for a variety of secreted factors such as Fibroblast Growth Factors (FGF) and Bone Morphogenetic Proteins (BMPs; with BMP4 being the most interesting candidate) or for transcription factors such as a number of HOX genes or many genes that are targets of Sonic Hedgehog (SHH) signaling pathway.
- Our review of the pre and postmortem records would define better both the natural history of ACD and its associated anomalies, providing additional data for genetic and prenatal counseling. Finally, the material collected would allow positional mapping of the putative ACD gene as a first step towards understanding the molecular mechanism underlying this condition.

### **Medical Definitions:**

**Oligohydramnios:** Scant amniotic fluid: less than usual.

**Penetrance:** The likelihood a given gene will result in disease. For example, if half (50%) of the people with the neurofibromatosis (NF) gene have the disease NF, the penetrance of the NF gene is 0.5.

**Gonadal Mosaicism:** See good explanation at <http://www.avera.org/adam/ency/article/001317.htm>

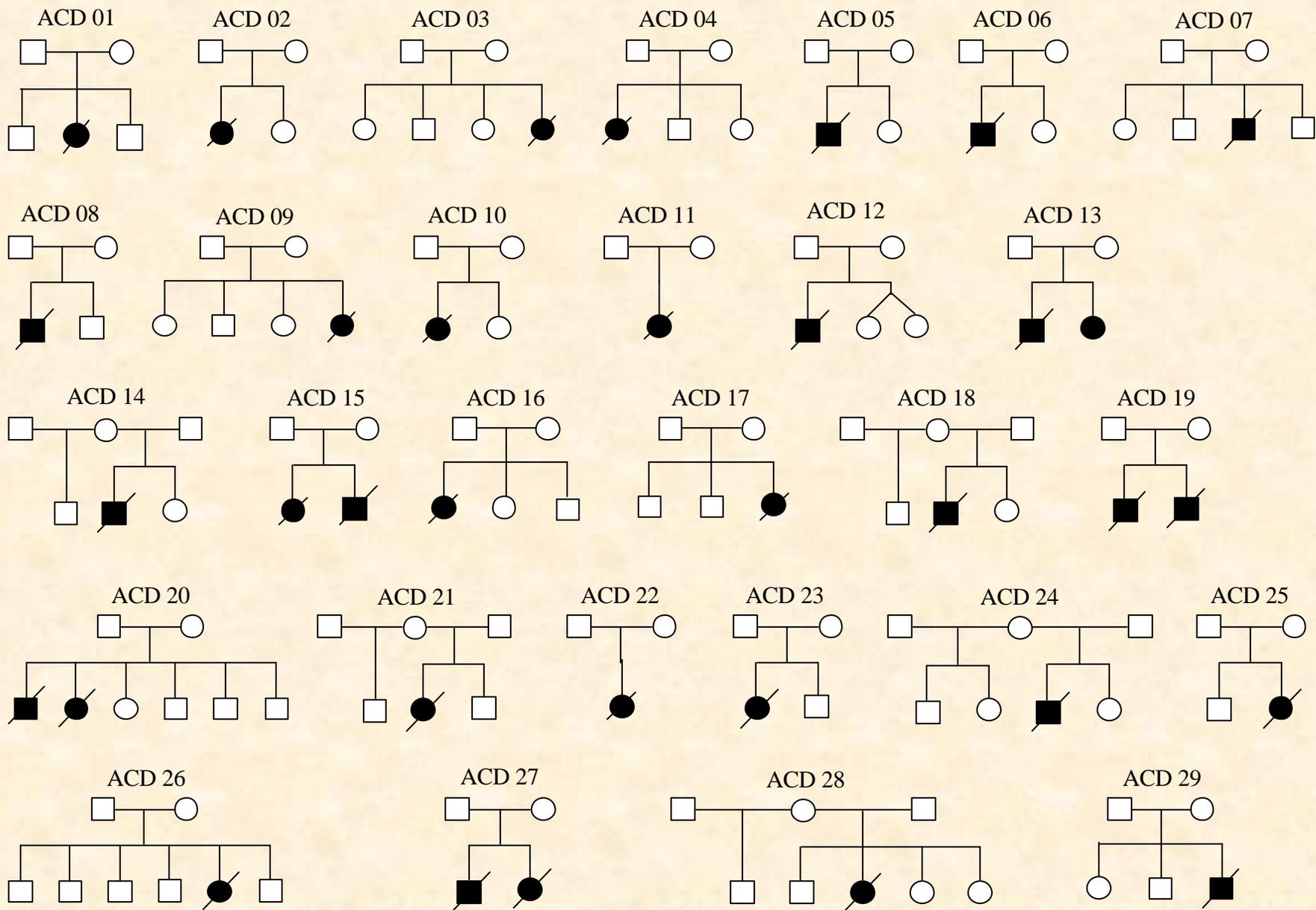
**Fibroblast Growth Factors:** Make up a large family of polypeptide growth factors of which there are 22 types in invertebrates. During embryonic development, FGF have diverse roles in regulating cell proliferation, migration and differentiation.

**Bone Morphogenetic Proteins:** A special growth factor for the induction of new bone formation

**Transcription:** Making an RNA copy from a sequence of DNA (a gene). Transcription is the first step in gene expression

**Sonic Hedgehog:** A term for a molecule that operates as a 'positional signal' during formation of parts of the body. It is a mechanism for creating patterns of different types of cells because target cells respond differently to a signaling molecule according to their distance from the source of the signal."

Figure 1



*Table 1*

Patient #	GA	BW	AD (days)	Sex	CV	Lungs	GI/Spleen	GU	Other
1	Term	?	22	F	PFO	ACD	Malformation	NL	None
2	40	?	27	F	PFO	????ACD	NL	NL	
3	?	?	1	M	NL	ACD	Hepatosplenomegaly	Obstruction	
4	38	4270	7	F	NL	ACD	Malformation	Obstruction	
5	38	3017	22	M	NL	ACD Plus	-	-	Limited Autopsy to Heart and Lungs Only
6	39	LGA	10	M	CHD	ACD	Microvesicular Steatosis	Obstruction	
7	38	3295	4	M	NL	ACD	NL	Obstruction	Prenatal DX of Oligo.Limited Autopsy to Lungs, Kidneys, Bladder and Urethra Only
8	40	?	17	M	PDA	ACD	Malformation	NL	
9	Term	3600	2	F	PFO, PDA	ACD	Malformation		
10	39	?	22	M	NL	ACD	Congestive Hepatomegaly	Obstruction	Prenatal Dx Of Oligo, Hydronephrosis and Pulm Hypoplasia
11	Term	3850	5	F	CHD	ACD	Not Examined	Clinically Normal. No Path Exam Performed	Limited Autopsy to Heart and Lungs only
12	Term	?	9	F	PDA, PFO	ACD Plus	Malformation	Clinically Normal. No Path Exam Available	No Brain Path Performed
13	32	?	10	M	CHD	ACD Plus	Malformation	Obstruction	Prenatal Dx of Polyhydramnios
14	36	3120	33	F	NL	ACD	NL	NL	None
15	Term	?	12	M	NL	ACD	NL	NL	None
16	41	2790	19	F	N/A	ACD	N/A	N/A	N/A
17	Term	2900	21	M	PDA, PFO	ACD	Malformation	NL	None
18	Term	3595	30	F	Absence Of Left Umbilical Artery	ACD	Malformation	NL	46,XX
19	N/A	N/A	N/A	F	N/A	N/A	N/A	N/A	No Autopsy Performed.
20	Term	?	87	M	NL	ACD PLUS	Moderate Hepa Tosplenomegaly	NL	
21	Term	3460	113	F	CHD	ACD	NL	NL	Limited Autopsy to Heart and Lungs Only
22	38	3267	14	F	Not Examined	ACD	Not Examined	Not Examined	Sturge-weber Syndrome. Limited Post Mortem to Lung Biopsy
23	?	?	16	F	NL	ACD	Not Examined	Not Examined	Limited Autopsy to Heart and Lungs only
24	?	2435	?	M	NL	ACD	NL	Obstruction	Has a Similarly Affected Sib.

## After the Loss: Coping with the Holidays

“I thought I was doing much better. The pain had subsided: I could laugh again. I was beginning to spend time with friends. My eating and sleeping patterns were back to normal. Then, I had to face my first holiday without him. I felt the familiar effects of grief was over me and it was just like the healing process had never begun.” (Anonymous)

Holidays. They can be the most joyous or the most painful days of the year, depending on how, and if, you’re prepared for them. Holidays are especially difficult if you’ve recently lost the love of another person through the death. By planning ahead, however, and dealing realistically with your holiday expectations, you can help insure your days are filled with peaceful satisfaction rather than painful sadness. Holidays aren’t just “something to be gotten through.” They should be a time for rejuvenation and reflection.

Whether this holiday season is the first or the fortieth you’ve faced since losing a loved one, there are some special considerations you need to think about while making your holiday plans. The first years after the loss of a loved one are the most difficult, however, and it is these days this booklet focuses on.

Notice in the sentence above, it says: “the first years” are the most difficult. Not the first hours, the first days, or the first months, but the first years. It is important for you to realize that your loss is going to require an adjustment in your life. This is especially true around the holidays. Traditions may change, the amount of entertaining you do will likely be altered, and your celebrations may be somewhat tempered. Before reading any further, it is important to accept and admit this to yourself. If you can do this, you are halfway to the point of being able to enjoy peaceful and pain free-holidays.

Anticipation: Initially, the most difficult part about facing a holiday, or an entire holiday season, is the fear about how awful the day is going to be. Often, the anticipation prior to the event is worse than the day itself due to the worry about surviving the occasion. Looking ahead and imagining what the day will be like tends to intensify any feelings of grief because we’re reminded of the lost love. Holidays also are a means of marking the passage of time and that too can be a painful reminder.

Writing down your fears in advance of a holiday will help you express your feelings. When writing, be entirely honest with yourself; it will help you gain control over your feelings. Clarifying your thoughts will help you feel less overwhelmed, especially when you begin to view the holiday as being made up of many small events rather than endless commitments and demands.

Participation: Actively participating in holiday activities, instead of thinking about what used to be, is a good way to begin your “holiday healing”. By planning ahead, you’ll have a grasp of what you do and do not want to do. This will prevent you from having to make decisions under pressure and give you the strength to say “no” if necessary. Also, being well-organized, you’ll enable yourself to limit the amount of activity you plan while using your time most effectively during the holiday(s). You’ll be able to build “quiet time” into your schedule without resenting having too much to do in a short periods of time.

Holidays are naturally demanding - - whether you’ve lost a loved one or not. They usually require entertaining or being entertained, shopping, commitments to spend time with family and friends, extra housework and cooking, etc. If you’re invited to do something you’d rather not do, be tentative in giving your answer. An honest but brief explanation of how you’ve been feeling lately will be understood and will allow you flexibility. Simply tell your host or hostess that some days are better than others since your loss and if you’re feeling up to it, you’d love to attend. This way, no firm commitment has been made and yet you still have the opportunity to enjoy the company of friends if you desire. This also allows you to observe realistic limits in your routine.

Preparation: You may find that getting into the “holiday spirit” is difficult for you this year. That’s okay. If you’re not ready to celebrate this year, don’t. If you have small children, however, you’ll need to discuss any holiday changes with them so that they don’t feel punished or confused. If they are also suffering from a loss, a traditional family celebration might be good for them. Chances are, even if you don’t feel up to it, you’ll be able to count on family members to help make the holiday as “normal” as possible for your children. If you need help, discuss it in advance with members of your family so that the day will run smoothly.

Decorating for the holidays, although it may seem like more work than it is worth, will bring warmth into your home and should not be avoided. If purchasing and decorating your tree seems overwhelming to you, let your children, other family members, neighbors or friends help you. They’ll provide valuable companionship and help make the project a special event rather than a chore. Once the decorating is done, you’ll be happy to have the seasonal reminder that life is continuing on and so must you.

If you find yourself alone for the holidays, take advantage of the time and pamper yourself. Get a book you’ve wanted to read, write letters that are overdue, treat yourself to a special meal, or call a friend who may also be alone. Being alone does not necessarily mean being lonely though, and you may find you enjoy the time to think and reflect. If you know in advance that you don’t want to be by yourself, **plan not to be**. It may mean calling family or friends and suggesting a special holiday activity, but it’s a way for you to let them know you’d like to spend time with them. Fellowship with others often is the best medicine for a grieving heart.

Continuation: Regardless of how many commitments you have over the holidays, the most important thing to remember is to keep things simple. Say no to invitations you'd rather not accept, and don't be afraid to express your feelings. If you want to cry, do. If you need to talk about your feelings, do. If you want to be alone, it's okay as long as you continue to reach out to others on occasion. Above all, take the time necessary to be in touch with your feeling and expectations and react accordingly. If you do, you'll find you're actually enjoying the holidays rather than just coping with them

Ways to Enjoy the Holidays.

- Make or bake all your holiday gifts.
- Shop by catalog in order to avoid the Christmas rush.
- Contact a local college or foreign-student center. Invite a few students to dinner.
- Call the Salvation Army, a local church, or a foster care agency and ask for the name of a needy family. Put together a holiday package or dinner basket and deliver it.
- Baby-sit for neighborhood children on New Year's Eve. Or, offer to baby-sit for parents while they shop for Christmas.
- Start a new tradition in memory of a loved one.
- Let someone do you a favor.
- Read about Christmas traditions in other countries.
- Organize a caroling group to go door-to-door or sing at a nursing home.
- Check with your church or local schools for special concerts or presentations.
- Renew a friendship.
- SMILE!

Reprint of Article Provided by Madonna Myers ☺

# Safe Arrivals

Congratulations to the following families who have been blessed with another baby:

██████████  
Born July 22, 2002  
To ██████████

██████████  
Born September 3, 2002  
to ██████████

██████████  
Born July 4, 2002  
To ██████████

██████████  
Born October 15, 2002  
To ██████████



## Please Welcome Our New Families . . .

It is with mixed emotions that we'd like to introduce a new family that has joined ACDA since the last newsletter.

Please take the time to introduce yourself, offer support and share the story of your child (children).



## Remembering your baby...

Here are two suggestions that you might consider for remembering your child during holidays:

- Choose an angel from the Salvation Army Angel Tree who is the same age your child would have been.
- Donate money to NORD in your baby's memory.
- Place a special holiday memento or ornament on your mantle or tree that is unique to your baby.
- Burn a candle in memory of your baby. ☺



# <http://www.acd-association.com>