

## Full-Length Article

**Heartbeat Recording and Composing in Perinatal Palliative Care and Hospice Music Therapy**Brian Schreck<sup>1</sup>, Alexa Economos<sup>2</sup><sup>1</sup>Norton Cancer Institute, Kentucky, USA<sup>2</sup>Cincinnati Children's Hospital Medical Center, Ohio, USA**Background**

Perinatal hospice care is an emerging area of practice for music therapists. Perinatal hospice care offers multidimensional support for pregnant women whose infants have been diagnosed with a terminal or life-limiting illness [1]. Music therapists are increasingly being employed in settings that offer services for pediatric patients with terminal illness [2]. Recent research has suggested that creating music and/or song legacy projects in pediatric palliative care may offer multidimensional support for families coping with anticipatory grief and/or bereavement. Legacy project interventions may include song dedications, music and song legacies, musical autobiographies, Therapeutic Music Videos (TMV), and/or original compositions [3-6]. Music therapy interventions that incorporate legacy work may include listening to live receptive music, music combined with other modalities (e.g. movement or art), or music-assisted counseling [7]. Families have reported a number of benefits from this process, including strengthened connections with loved ones, creating meaningful shared experiences, serving as a catalyst for difficult conversations surrounding the death, providing insight during bereavement, transforming families' perceptions of adversity, and creating continuing bonds with the deceased [6,8,9-11].

**Keywords:** *heartbeat, perinatal palliative care, recording, Doppler*multilingual abstract | [mmd.iamonline.com](http://mmd.iamonline.com)**Introduction**

Often the first sound parents hear their children make occurs during prenatal care when a Doppler ultrasound device detects the baby's heartbeat. In late 2013 at Cincinnati Children's Hospital Medical Center, Brian Schreck, MA, MT-BC, piloted an innovative music therapy intervention that involved recording intrauterine sounds to create music with patients and their families. Many devices were explored and adapted: Doppler ultrasound devices, iPad apps, a constructed stethoscope microphone, an electronic stethoscope with Bluetooth, and other digital stethoscopes to record patients' hearts beating and lungs breathing. This process aims to capture moments in time, which may be preserved for future connection with the patient and family. Apart from Therapeutic Music Video (TMV) intervention [6], specific

protocols for legacy work interventions have not been well described or explored by music therapists. Clements-Cortes [12] described my preliminary heartbeat recording protocol and case examples for the use of heartbeat recordings with mothers enrolled in perinatal hospice care.

At Cincinnati Children's Hospital, this process is offered to expectant mothers enrolled in perinatal hospice (StarShine) who have learned their baby has an incurable diagnosis. Some mothers allow the music therapist to record the baby's heartbeat. The baby's heart rhythm is integrated into a piece of music that the family and music therapist design together. If the family has other children, the sibling's heartbeats may be recorded and added to the initial recording, connecting all of their rhythms [13]. Alexa Dorris Economos, MMT, MT-BC has been continuing this work in StarShine's rapidly expanding perinatal hospice program since July 2016. Starshine works closely with patients and their doctors. The interdisciplinary team helps parents prepare a birthing plan for labor, facilitates creation of a plan for the baby's care after birth, connects parents with community resources, offers counseling to parents and other family members, assists in final arrangements when and if the child dies, and offers bereavement support for at least two years following the child's death [14].

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## Protocol

Music therapy services begin during pregnancy and may continue through labor and beyond. Prenatal heartbeats may be recorded in an obstetrical office or hospital. Post-birth, the heartbeat of the child and other loved ones may be recorded with an adapted stethoscope microphone in any location of the family's choosing.

### Perinatal Recording:

- Attend obstetrical appointment during which trained medical staff will complete a Doppler recording of prenatal heartbeat
- Use a high quality microphone connected to Garageband software
- Create new track in Garageband
- Record by placing microphone near location of Doppler microphone and record 30-60 seconds of material.

### Post-Birth Recording:

#### Stethoscope Microphone Components:

- Stethoscope (Rode SmartLav)
- Lapel Microphone (Thinklabs "One")

#### Adapting and Creating the Stethoscope Microphone:

- Use scissors to cut the tubing of the stethoscope, leaving 1.5-2.5 inches above the chest piece.
- Place the microphone end of the lapel microphone tightly inside the open end of tubing.

#### Recording:

- Ensure quiet environment
- Connect stethoscope microphone to Garageband software through headphone jack.
- Create and label a new track.
- Place stethoscope microphone onto chest cavity and record 30-60 seconds of material.
- Listen during visit to confirm recording has been completed and is clear. Figure 1 presents a sample of post-birth heartbeat recording.

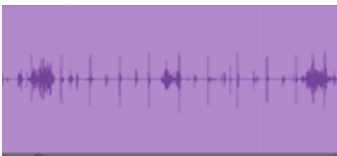


Figure 1: Post-birth heartbeat recording

## Editing

- Copy a sample of 3, 4, 6, or 8 pulses in a row to create a desired meter.
- Paste sample into a new Garageband track
- Loop for desired length of time. Figure 2 shows a perinatal heartbeat loop as it appears in Garageband.

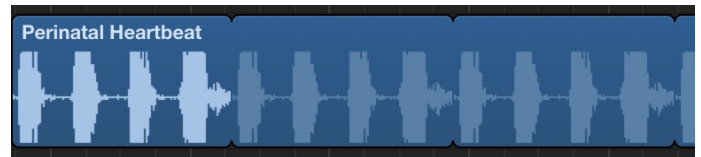


Figure 2: Perinatal heartbeat loop in Garageband

**Composition:** Select a Song of Kin, or a significant original or pre-composed song selected by the patient's family [15].

- Learn the basic structure of the Song of Kin
- Play/record in a separate track over the rhythmic pulse of the looped heart/breath sounds
- Instrumental structure of the composition created to invite the listener to hum/sing along with the recording
- Voice can be added by the music therapist, family member, or patient if possible

Components/sections of the original pre-existing recording can be woven into the piece

## Innovative Clinical Practice

### Case Example 1:

At 20 weeks pregnant, Meredith and her husband learned that their first baby, Jonathan, was missing several vital organs to support life. Meredith planned to carry her son as long as possible with the hopes of spending minutes to hours with him at birth, and she was enrolled in the perinatal hospice program.

During her music therapy assessment visit, Meredith expressed an interest in the heartbeat recording process. The MT-BC attended one of her OB/GYN visits and recorded Jonathan's heartbeat at this time. Upon hearing his heartbeat, Meredith felt inspired to rewrite a Catholic hymn of farewell. The MT-BC recorded piano accompaniment that matched the tempo of her son's heartbeat and created space for improvising over the music. As the music therapist and Meredith processed the lyrics she needed to communicate to her son, Meredith decided that it would also be important to have her heartbeat and her husband Fred's heartbeat incorporated into the music. The MT-BC used an adapted microphone and stethoscope to record Meredith and Fred's heartbeats in their home. The piano accompaniment was adapted to match the tempi of the three alternating heartbeats.

Meredith and Fred attended future music therapy sessions together during which the MT-BC facilitated co-

writing revised lyrics of the hymn. Meredith and Fred had different approaches to their grief and writing styles and decided to embrace this. Fred was a self-described analytical person and considered himself “not musical.” Meredith described herself as emotive and creative and loved to sing in her church choir. Meredith wanted to honor the relationship created with the music therapist by inviting the MT-BC to record an alto vocal line in sync with her during the chorus. Fred did not feel connected to singing and therefore felt he might offer an authentic performance of his lyrics by speaking them with piano accompaniment during the second verse. The finished song was structured as follows: First, the MT-BC and Meredith sang the original lyrics to the chorus of the hymn with soprano and alto harmony parts over Jonathan’s heartbeat; then, Meredith sang a personalized verse over Jonathan’s heartbeat; then, Fred performed spoken poetry over his own heartbeat; and finally, Meredith sang a personalized verse over her own heartbeat. At the conclusion of the piece, when Meredith sing’s “mom,” all three of their heartbeats come together and fade out into Jonathan’s.

By performing personalized lyrics to the track of their own heartbeats, Meredith and Fred found a meaningful expression of their different grieving styles within a cohesive piece of music.



*Audio 1: Jonathon’s Lullaby*

#### Case Example 2:

Kiana’s baby, AJ, was diagnosed before birth with occipital encephalocele. Kiana began work with the music therapist during her 35 week OB/GYN visit. The music therapist met her in the waiting room and began a conversation about music that was important to her, including songs like “Love Like This” by Faith Evans. The music therapist played this song while Kiana awaited the medical staff in the exam room and later explained the rationale for being there on the visit with Kiana to her obstetrician. Kiana’s husband Artrez could not be at the appointment due to his work schedule. During the visit Kiana told the music therapist that Artrez loved to rap and write original music. He loved video games and action figures including the Ninja Turtles. The music therapist compiled a CD with AJ’s heartbeat and other family preferred selections including the Ninja Turtle theme song.

AJ was born and made it home to the young couple’s apartment. The interdisciplinary hospice team set up a visit and the music therapist recorded the AJ’s post-birth heartbeat. The heartbeat tracks were formatted for Artrez to mix using his own music software, and he was encouraged to continue writing the song he had been slowly writing for his son. The music therapist continued a relationship with the family and

helped Artrez record two original songs, one only using his post-birth stethoscope microphone recording (*Audio 2*) and the more recent piece using his prenatal Doppler heartbeat recording (*Audio 3*) with an original beat: [https://youtu.be/N4kc\\_AGvao4](https://youtu.be/N4kc_AGvao4). Artrez created both the beat and the lyrics. AJ is still living, and he and his family continue to receive music therapy.



*Audio 2: Baby J*



*Audio 3: AJ Doppler*

AJ’s outpatient music therapy environment is ever-evolving, just like these pieces of music. The music created over his heartbeat can change, be altered, or completely be redesigned. For many pediatric palliative care patients, unpredictability and risk of infection are ongoing issues with which parents must cope as they care for their child. This was certainly the case for AJ and his family as AJ surpassed his medical team’s expectations: not only surviving birth, but living for years as a child with special needs. AJ’s heartbeat recording process has provided ongoing opportunities for expression and a safe outlet to contain his parent’s emotions and experiences.

#### Conclusion

This intervention is an innovative and unique tool that music therapists have to use to celebrate the baby’s life in utero, unite the family in a shared experience, comfort the mother during labor, and facilitate legacy work [14]. Although families appreciate having a physical product to cherish, the strength in this intervention lies in its flexibility to be offered as a process within the context of a music therapy relationship. As families cope with the uncertainty of carrying and potentially caring for a child with a life-limiting diagnosis, this intervention may serve as a catalyst for creating meaning over time.

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## Biographical Statements

Brian Schreck, MA, MT-BC is a music therapist who has been working with chronically ill medical patients professionally for the past 13 years. Mr. Schreck has served patients of all chronological ages with many serious diagnoses and prognoses. This heartbeat recording intervention has been piloted and used with hundreds of patients since 2014 and shared and spread to many music therapists nationally and internationally. Brian Schreck, MA, MT-BC serves on the executive board for the International Association for Music & Medicine.

Alexa Economos, MMT, MT-BC is a music therapist who works with chronically ill medical pediatric patients and their families through Cincinnati Children's StarShine palliative care and home hospice. Economos serves pregnant mothers and their families throughout the patient's lifespan from diagnoses, through delivery, and into bereavement. Alexa Economos also serves patients with life threatening illnesses with a variety of severe diagnoses and chronological ages through this state-of-the-art program.