# Failure to thrive by Jane Kwon, Joy Cannon, Thuy Bui

**Learning objectives:**

- Recognize causes of non-organic failure to thrive in infants
- Explore strategies to work with parents who are skeptical of vaccines
- Describe interventions to address stigma and help-seeking behavior of women with postpartum depression

**Case synopsis**

Baby D is a 4 month-old girl who is admitted to Children's Hospital for "failure to thrive." Patient's weight was in the 50$^{th}$ percentile at birth and started to plateau around 2 months of age. She was born full-term at 41 weeks after an uncomplicated pregnancy and a normal spontaneous vaginal delivery. Her birth weight was 8 pounds. At 4 months, her weight was in the 10$^{th}$ percentile. She is exclusively breastfed, every 1-2 hours for 20-30 minutes. Mom gives a history of spitting up 2-3 times a day. She has normal stools on a daily basis. She has NOT been vaccinated but her siblings have received all appropriate vaccines.

Patient lives with her mom, dad and 2 older siblings in a semirural community in Pennsylvania. Her 12-year old brother has been diagnosed with autism spectrum disorder and developmental delay. Mom used to work as case worker until pregnancy, and dad works as a truck driver with long periods of time away from home. Grandmother lives nearby. Mom's father passed away 3 weeks ago. Mom endorses significant stress and scored greater than 10 on the Edinburgh Postnatal Depression Scale at 1 and 2-month well-child checks but has declined referral to mental health services. Mom admits to lack of sleep and appears exhausted. Mom does drive and has a vehicle.

During the physical examination, baby D is noted to be slightly thin but active and alert. Her muscle strength, tone and reflexes are normal. She achieves all motor, social and language milestones for a 4-month-old infant such as head control, social smile and ability to track faces and objects visually. Screening laboratory studies are all normal including a complete blood cell count with differential, serum electrolytes, calcium, creatinine, liver and thyroid blood tests, urinalysis, stool fat (for malabsorption) and occult blood. The gastroenterology team was consulted and could not find any cause for malabsorption or increased caloric needs.

**Questions for discussion:**

1. Construct a problem list for this patient

2. Conduct root-cause analysis for at least one problem

3. Describe positive/protective social determinants of health for this patient

4. Describe negative SDH factors

5. Propose patient-level solution with attention to facilitators and barriers

6. Imagine possible health system or institutional solutions

7. Discuss potential community/societal-level solutions

# Facilitator's Guide

1. **Construct a problem list for this patient**

   1) Failure to thrive 2) no vaccination 3) maternal depression

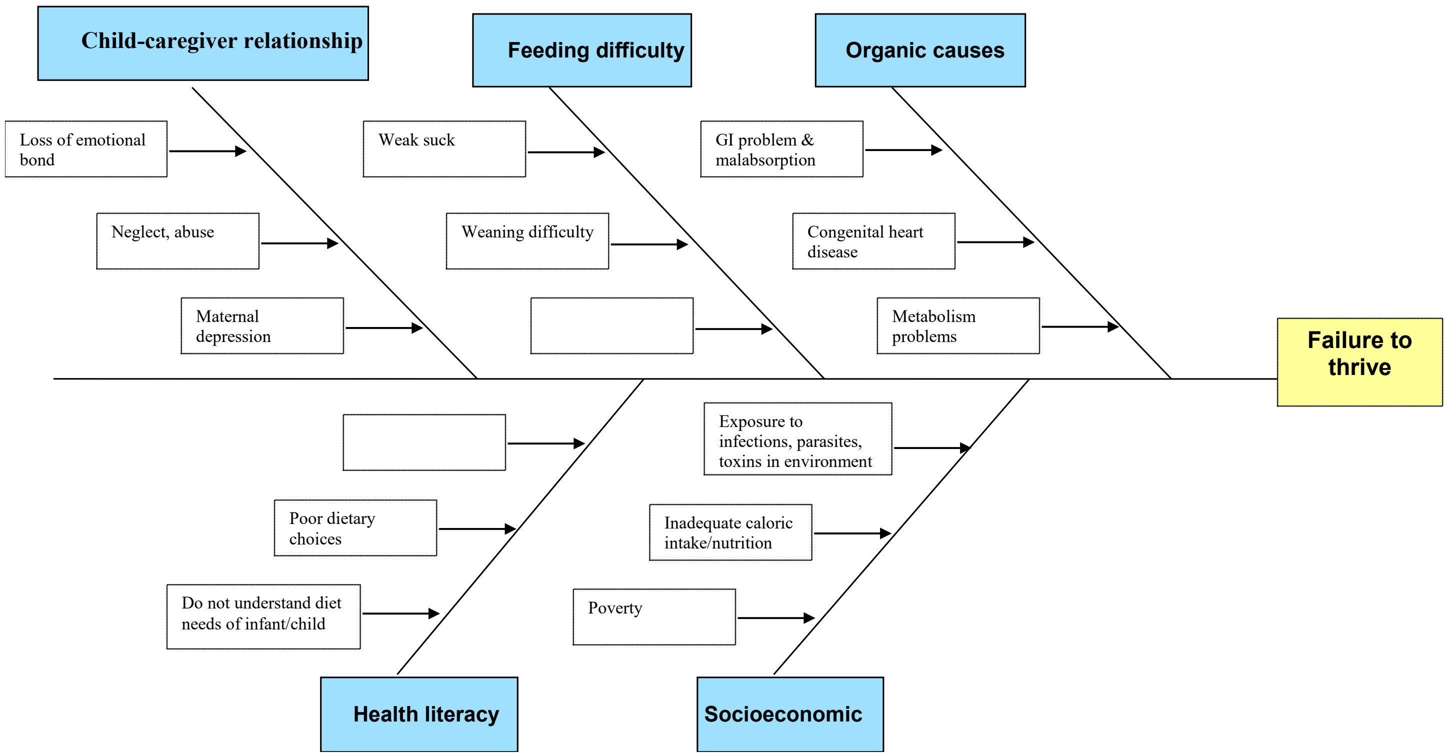
2. **Conduct root-cause analysis for at least one problem**

   Encourage students to assess mom's psychosocial factors that might impact baby D's condition. It is important to recognize from the information included in the case synopsis that there is no obvious organic cause for baby D's failure to thrive or weight faltering. Weight faltering is a complex and multifactorial condition ranging from normal variant to children with serious problems. Contrary to previous beliefs, there is no significant association between low socioeconomic status, poor educational attainment and weight faltering in western countries. Sometimes weight faltering may be associated with neglect or maternal depression. Interactive problems between parent and infant could result in poor nutrition. Observations of children who are hospitalized for poor weight gain indicate that, for some, there is chaotic family background or unusual mother-child interaction. **In this case, the mother is under a lot of stress from the recent death of her father, having a husband who is away often, having an older child who requires significant supervision, and perhaps she also suffers financial distress from loss of income by staying at home**. Maternal depression is a known risk factor for inadequate growth in an infant. Post-partum depression can interfere with mother-infant attachment, infant care, the child's development and family functioning. We don't know in this case whether unwanted pregnancy also plays a role. There is a 12-year gap between the 2 pregnancies. Some studies showed association between unintended pregnancy and subsequent postpartum depressive symptoms.

   Postpartum depression (PPD) does not reflect a character flaw or weakness, and hormonal changes may trigger symptoms of PPD. Women with history or family history of depression and bipolar disorder are at higher risk and so are those with relationship problem, financial difficulty, baby with special needs or difficulty with breastfeeding.

   With regard to lack of vaccination, mom alluded to her son's diagnosis of autism as the reason for not vaccinating baby D. She had been advised that there is no such link between vaccination and autism but what could be causing or re-enforcing her beliefs? What could be the root causes fueling the anti-vaccination movement in the US and Europe?

   It might be helpful for students work together on a fishbone diagram to illustrate multiple potential causes of a condition such as failure to thrive or weight faltering. Below is just one example.




**3. Describe positive/protective social determinants of health for this patient**

Mom appears well connected to the local pediatrician's office. The grandmother is a potential source of social support. Mom has good health literacy and is well-invested in the care of baby D. Although we don't have a specific address or name of a town where baby D's family resides, it is often helpful to explore Google maps "nearby" feature to assess neighborhood and social services agencies.

**4. Describe negative SDH factors**

Dad is not able to provide support as he is away from home for long periods of time. Other behavioral and social issues include: having a child with disability; mom's reluctance to seek help for depression; is it stigma or lack of trust in the healthcare system or lack of motivation or resources? Her decision not to vaccinate baby D might have similar underlying causes.

**5. Propose patient-level solution with attention to facilitators and barriers**

Encourage students to look up resources and think outside the box. Ask students to imagine having the responsibility to care for an infant 24/7 and as they are completely exhausted, what would be helpful for them (short of giving the baby away)? Potential solutions: connect mom to local support groups, online support groups, mobile therapy, and/or visiting nurse. Special camp for her older child with autism might give her a break (like respite care). Referral to in-home lactation consultants might be acceptable to mom. Pumped breast milk (with or without additional formula) given in a bottle will allow other people to assist mom in feeding the baby when her schedule is stressed to the limit. Many insurance plans cover breast pump.

Many anti-vaxxer parents are emotionally motivated by fear and it can be very difficult or even impossible to convince them to vaccinate. The best way to work with anti-vaccination parents is to emphasize concern for the child. Some doctors agree to anti-vaccine parents' request for exemptions by writing a letter to school or completing a form. How should physicians handle requests to be exempted from vaccination? Some studies suggest that most parents will eventually vaccinate their children in time with empathic support from healthcare providers.

**6. Imagine possible health system or institutional solutions**

Encourage students to think creatively. How could the health system or the insurance plan do more to support new parents or moms with postpartum depression? What could we do to support pediatricians or primary care physicians in rural areas? What might be some challenges for a physician or a practice to organize support groups for mother with postpartum depression? What could health systems do to address opposition to vaccines? What are the risks of spacing out vaccinations? Referral for in-home visitation on a weekly basis should be made to the Early Head Start program. Home visits by health professionals or lay supporters in the weeks following the birth have been shown to improve maternal psychological and mental health problems and neonatal morbidity. Does insurance or local nonprofits or county government provide for these services?

**7. Discuss potential community/societal-level solutions**

Encourage students to think about postpartum depression in different societies and cultures. Who is at higher risk for postpartum depression? Is postpartum depression more common in western societies? Data suggests that the bigger the social network of a mother, the less postpartum depression occurs. Some women are afraid to mention symptoms out of fear or shame. What could we do to mitigate this problem? What are some practices in other cultures which revere and protect the new mother? What is the role of FMLA/maternity leave?

Students could also focus on the drivers of increasing anti-vaccination sentiments and beliefs in some communities in the US. What is the role of social media or why anti-vaccine beliefs and ideas spread so fast on the internet? How do physicians address myths and facts about adverse events? Discuss legislation to curtail nonmedical vaccine exemptions.

**Key learning points:**

- Some women are more likely to experience postpartum depression due to risk factors, such as stressful life event during pregnancy or shortly after giving birth (job loss, death of a loved one, domestic violence or personal illness) and lack of emotional support from her partner, family or friends
- Maternal depression can put the infant at risk for failure to thrive and negative socioemotional and cognitive development of children

- Physicians needs to address parents' fear and ambivalence regarding vaccines by encouraging open communication and cultivate trust.  In addition, physicians should also combat the wrongful demonization of vaccinations through social media and other news media platforms.

**Case outcome:**

A lactation specialist works with mom to improve feeding efficiency.  Baby D is discharged from the hospital after 2-day of adequate weight gain and 5 days after admission. She is scheduled for follow-up 3 days after discharge.  During the hospitalization, support is provided to mom to ensure that mom does not feel isolated or guilty for her child's weight faltering.  Mom is very receptive to the treatment team's suggestions such as spacing out feed to longer intervals and engaging baby D. during feeds to encourage efficient feeding.  The team also communicates the importance of mom taking care of herself both physically and mentally.  Mom is comfortable following up with the community pediatrician.

# References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