The new school year
What will it look like?

Puzzler
Pleuropulmonary blastoma

Respiratory Disorders
What is causing that cough?

Behavioral Health
COVID-19’s emotional affect

Nutrition
How poor diet choices influence early life
The first new chemical entity launched in ADHD in over a decade1,2

Less chaos

More control1,3

INDICATION
Qelbree is indicated for the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD) in pediatric patients ages 6 to 17.

IMPORTANT SAFETY INFORMATION
WARNING: SUICIDAL THOUGHTS AND BEHAVIORS
In clinical studies, higher rates of suicidal thoughts and behaviors were reported in pediatric patients with ADHD treated with Qelbree than in patients treated with placebo. Closely monitor all Qelbree-treated patients for clinical worsening and for emergence of suicidal thoughts and behaviors.

CONTRAINDICATIONS
- Concomitant administration of a monoamine oxidase inhibitor (MAOI), or dosing within 14 days after discontinuing an MAOI, because of an increased risk of hypertensive crisis
- Concomitant administration of sensitive CYP1A2 substrates or CYP1A2 substrates with a narrow therapeutic range

WARNING & PRECAUTION
- Heart rate, blood pressure increases: Qelbree can cause an increase in diastolic blood pressure and heart rate. Assess these measures prior to starting therapy, following increases in dosage, and periodically during therapy


Please see the brief summary of full Prescribing Information on adjacent pages, or visit QelbreeHCP.com/BackToSchool.
Suicidal ideation may occur in the context of mood disorders, including bipolar disorder, schizoaffective disorder, and major depressive disorder. In patients ages 12 to 17 years, Qelbree was associated with an increased risk of suicidal thoughts and behaviors, including a detailed psychiatric history, including a personal or family history of suicide attempt or behavior, especially if these symptoms are severe or abrupt in onset, or if there is a plan for suicide.

Patients should be monitored for suicidal ideation and behavior, and to report such symptoms immediately to the healthcare provider.

Suicidal ideation has been associated with the use of Qelbree. Among 1019 patients exposed to Qelbree 100 mg to 400 mg in short-term trials, a total of nine patients (0.9%) reported suicidal ideation (N=6), behavior (N=1) or behavior, especially if these symptoms are severe or abrupt in onset, or if there is a plan for suicide.

Infections and infestations

Upper respiratory tract infection*;
Abdominal Pain*;
Nausea;
Vomiting;
Psychiatric disorders

Abdominal pain; Insomnia; initial insomnia, insomnia, middle insomnia, poor quality sleep, sleep disorder, terminal insomnia.

Overdosage

In the event of an overdose, supportive measures should be taken, including monitoring of vital signs and respiratory status. In the event of an overdose, supportive measures should be taken, including monitoring of vital signs and respiratory status. In the event of an overdose, supportive measures should be taken, including monitoring of vital signs and respiratory status. In the event of an overdose, supportive measures should be taken, including monitoring of vital signs and respiratory status.
Drugs Having Clinically Important Interactions with Qelbree (continued)

**Moderate Sensitive CYP1A2 Substrate (continued)**

- Examples: Oclozine, pirenzepine

**CYP2D6 Substrate**

- Clinical Impact: Viloxazine is a weak inhibitor of CYP2D6, and increases the exposure of CYP2D6 substrates when coadministered.

- Intervention: Monitor patients for adverse reactions and adjust dosages of CYP2D6 substrates, as clinically indicated.

- Examples: Atomoxetine, desipramine, dextromethorphan, nortriptyline, metoprolol, nebivolol, perphenazine, tolterodine, valsartan, and risperidone

**CYP3A4 Substrate**

- Clinical Impact: Viloxazine is a weak inhibitor of CYP3A4 which increases the exposure of CYP3A4 substrates when coadministered.

- Intervention: Monitor patients for adverse reactions and adjust dosages of CYP3A4 substrates, as clinically indicated.

- Examples: Alfentanil, alinfil, buspirone, conivaptan, danfacen, darunavir, elabastine, evelosmin, ibutinib, lomaptopde, lovastatin, midazolam, naxelag, ritodipine, saquinavir, simvastatin, sirolimus, tacrolimus, tipranavir, tizotazolam, vardenifil, and lirasidone

**USE IN SPECIFIC POPULATIONS**

**Pregnancy**

**Pregnancy Exposure Registry**

- Report pregnancies to the National Pregnancy Registry for Psychiatric Medications at 1-866-967-2088, and at the website (www.womensmentalhealth.org/pregn).

**Risk Summary**

- Based on findings from animal reproduction studies, viloxazine may cause maternal harm when used during pregnancy. Discontinue Qelbree when pregnancy is recognized unless the benefits of therapy outweigh the potential risk to the mother. Available data from case series with viloxazine use in pregnant women are insufficient to determine a drug-associated risk of major birth defects, miscarriage or adverse maternal outcomes.

In animal reproduction studies, oral administration of viloxazine to pregnant rats and rabbits during the period of organogenesis did not cause significant maternal toxicity but caused fetal toxicities and delayed fetal development in the rat at doses up to 2 times the maximum recommended human dose (MRHD) of 400 mg, based on mg/m². In the rabbit, viloxazine caused maternal toxicity without significant maternal toxicity at doses > 7 times the MRHD based on mg/m². The no observed adverse effect levels (NOAELs) for fetal toxicity are approximately equal to 1 and 2 times the MRHD, based on mg/m² in the rat and rabbit, respectively. Oral administration of viloxazine to pregnant rats and mice during pregnancy and lactation caused maternal toxicities and deaths at doses approximately 2 and 1 time the MRHD, based on mg/m², respectively (see Data). At these maternally toxic doses, viloxazine caused offspring toxicities. The NOAEL for maternal and developmental toxicity is approximately equal to or less than the MRHD, based on mg/m², in the rat and mouse, respectively (see Data).

**Data**

**Animal Data**

Viloxazine was administered orally to pregnant rats during the period of organogenesis at doses of 43, 87, and 130 mg/kg/day, which are approximately 4, 7, and 11 times the MRHD of 400 mg, based on mg/m², respectively. Viloxazine did not cause maternal toxicity at doses up to 82 mg/kg/day. Viloxazine at 82 mg/kg/day increased early and late resorption, delayed fetal development, and possibly incidences of fetal malformations or anomalies (craniochondrosis, missing cervical vertebrae, and morphological changes associated with hydranephrocalyceal). The NOAEL for fetal toxicity and malformation is 33 mg/kg/day, which is approximately equal to the MRHD, based on mg/m². Viloxazine was administered orally to pregnant rabbits during the period of organogenesis at doses of 43, 87, and 130 mg/kg/day, which are approximately 4, 7, and 11 times the MRHD of 400 mg, based on mg/m², respectively. Viloxazine decreased maternal body weight, weight gain, or food consumption at doses ≥ 87 mg/kg/day, but did not cause fetal toxicity at doses up to 130 mg/kg/day. The NOAEL for maternal and fetal toxicity is 43 and 130 mg/kg/day, respectively, which is approximately 4 and 11 times the MRHD, based on mg/m², respectively. Viloxazine was administered orally to pregnant rats during gestation and lactation at doses of 43, 87, and 217 mg/kg/day, which are approximately 1, 2, and 5 times the MRHD of 400 mg, based on mg/m², respectively. Viloxazine caused maternal toxicity of decreased body weight, weight gain, and food consumption at doses ≥ 87 mg/kg/day and maternal deaths near term at 217 mg/kg/day. At these maternally toxic doses, viloxazine caused lowered live birth, decreased viability, and delayed growth and sexual maturation without affecting learning and memory in the offspring. The NOAEL for maternal and developmental toxicity is 43 mg/kg/day, which is approximately equal to the MRHD, based on mg/m². Viloxazine was administered orally to pregnant mice during gestation and lactation at doses of 13, 33, and 82 mg/kg/day, which are approximately less than or equal to the MRHD of 400 mg, based on mg/m². Viloxazine treatment at 82 mg/kg/day during the gestation period caused maternal deaths and decreased body weight in the offspring. The NOAEL for both maternal and developmental toxicity is 33 mg/kg/day, which is less than the MRHD, based on mg/m².

**Lactation**

**Risk Summary**

- There are no data on the presence of viloxazine in human milk, the effects on the breastfed infant, or the effects on milk production. Viloxazine is likely present in rat milk. When a drug is present in animal milk, it is likely that the drug will be present in human milk.

The developmental and health benefits of breastfeeding should be considered along with the mother’s clinical need for Qelbree and any potential adverse effects on the breastfed child from Qelbree or from the underlying maternal condition.

**Pediatric Use**

- The safety and effectiveness of Qelbree in pediatric patients ages 6 to 17 years of age with ADHD have been established based on randomized, placebo-controlled studies in pediatric patients.

The safety and effectiveness of Qelbree have not been established in pediatric patients younger than 6 years old.

 Patients treated with Qelbree should be monitored for suicidal thoughts and behavior, and for changes in weight.

**Juvenile Animal Toxicity Data**

Viloxazine was administered orally to juvenile rats from postnatal day (PND) 23 through PND 79 at doses of 43, 130, and 217 mg/kg/day, which are approximately 1, 2, and 3 times the MRHD of 400 mg, based on mg/m² in children, respectively. Viloxazine decreased body weight, weight gain, and food consumption in both sexes at 217 mg/kg/day. Sexual maturation, reproductive capacity, and learning and memory were not affected. The NOAEL for juvenile toxicity is 130 mg/kg/day, which is approximately 2 times the MRHD, based on mg/m² in children.

**Geriatric Use**

- Clinical trials of Qelbree in the treatment of ADHD did not include sufficient numbers of patients aged 65 and older to determine whether or not they respond differently from younger patients.

**Renal Impairment**

- Dose reduction is recommended in patients with severe eGFR of < 30 mL/min/1.73m² (MDRD) renal impairment.

- No dosage adjustment of Qelbree is recommended in patients with mild to moderate eGFR of 30 to 89 mL/min/1.73m² (MDRD) renal impairment.

- The exposure of viloxazine increases in patients with renal impairment.

**Hepatic Impairment**

- The effect of hepatic impairment on the pharmacokinetics of viloxazine is unknown. Qelbree is not recommended in patients with hepatic impairment.

**OVERDOSAGE**

**Human Experience**

- The pre-marketing clinical trials with Qelbree do not provide information regarding symptoms of overdose.

- Literature reports from post marketing experience with immediate-release viloxazine include cases of overdose from 1000 mg to 6500 mg (2.5 to 16.25 times the maximum recommended daily dose). The most reported symptom was drowsiness. Impaired consciousness, diminished reflexes, and increased heart rate have also been reported.

**Treatment and Management**

- There is no specific antidote for Qelbree overdose. Administer symptomatic and supportive treatment as appropriate. In case of overdose, consult a Certified Poison Control Center (1-800-222-1222 or www.poisson.org).

**NON-CLINICAL TOXICOLOGY**

**Carcinogenesis, Mutagenesis, and Impairment of Fertility**

- Carcinogenesis: Viloxazine did not increase the incidence of tumors in rats treated for 2 years at oral doses of 22, 43, and 87 mg/kg/day. The high dose of 87 mg/kg/day is approximately equal to the MRHD of 400 mg, based on mg/m² in children.

- Viloxazine did not increase the incidence of tumors in rats treated for 26 weeks at oral doses of 43, 13, and 43 mg/kg/day.

- Mutagenesis: Viloxazine was not genotoxic in a battery of genotoxicity tests. It was not mutagenic in the in vitro bacterial reverse mutation Ames assay or clastogenic in the in vitro mammalian chromosomal aberration assay or in the in vivo rat bone marrow micronuclear assay.

- Impairment of Fertility: Viloxazine was orally administered to male and female rats prior to and throughout mating and continued until completion of the second littering at doses of 13, 33, and 82 mg/kg/day, which are less than, equal to, and 2 times the MRHD of 400 mg, based on mg/m², respectively. Viloxazine did not affect male or female fertility parameters in the rat. The NOAEL for male and female fertility is 82 mg/kg/day, which is approximately 2 times the MRHD, based on mg/m².

**Animal Toxicology and/or Pharmacology**

- In animal studies, viloxazine treatment caused dose-dependent convulsions at oral doses of ≥ 130, ≥ 173, and ≥ 39 mg/kg/day in the rat, mouse, and dog, respectively, which are approximately equal to or slightly higher than the MRHD of 400 mg, based on mg/m² in children.
Eradicating misinformation

On July 15, 2021, US Surgeon General Vivek H. Murthy, MBA, MD, hosted a webinar at the Stanford Internet Observatory, a research lab at Stanford University that studies abuse in current information technologies. In his opening remarks, Murthy (who himself lost 10 family members to COVID-19) called misinformation an “imminent and insidious threat,” noting that false news stories online are shared 70% more often than accurate ones. Murthy’s call to arms included asking for clinicians, educators, investigators, journalists, technology companies, and governments to use a number of methods (transparency, bringing stakeholders together, support communities trying to stop the spread of misinformation, and more) to mitigate this danger.

“Misinformation...takes away our freedom to make informed decisions about our health and the health of our loved ones,” the surgeon general emphasized.

Lee Beers, MD, FAAP, president of the American Academy of Pediatrics (AAP), was also on the webinar, and discussed the initiatives created by the AAP to combat the disinformation campaign. These include training pediatricians on social media; producing animated science explainer videos about COVID-19 vaccines for pediatricians to share with their patients; and creating a public service announcement on the importance of all vaccines.

Health misinformation is nothing new. When the smallpox vaccination was introduced in 1796, news spread that the vaccine could turn someone into a cow, because it comes from cow puss. Today, scientists offer evidence-based studies that allow clinicians and their patients to make the most informed decisions possible. As Murthy said, urging people to create open dialogues; not judging without hearing the other side; and establishing common ground will, with hope, lead to a “pathway for reliable information and a kinder, more connected world.”

Mike Hennessy Sr
Chairman and Founder
MJH Life Sciences™

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in this issue

AUGUST 2021

BACK TO SCHOOL: SPECIAL REPORT

infectious disease
24 What will the coming school year look like?
Sara Bode, MD, an executive committee member of the American Academy of Pediatrics’ Council on School Health, discusses COVID-19 and the return to in-person learning. Lois Levine

devlopmental health
26 The challenge of virtual learning
How have children fared academically after more than a year of remote education? Sandy L. Chung, MD, FAAP, FACHE

mental health
28 Assessing COVID-19’s impact
Psychosocial functioning and suicidal ideation in the wake of a pandemic. Michael S. Jellinek, MD; and Anamika Dutta, BA

puzzler
12 Pleuropulmonary blastoma in an adolescent female
A previously healthy teenager presents with chest pain and shortness of breath. Emma Batchelder, MD; and Elizabeth Imboden, MD

respiratory disorders
18 Bronchitis in children: Should it be on your radar?
How to diagnose the correct source of a child’s cough. Rachael Zimlich, BSN, RN

pediatric pharmacology
22 IDP-126 meets end point in second phase 3 study
A new treatment option for acne vulgaris. Linda Stocum

dermatology
32 Acne vulgaris in teenagers
Best treatments for this common adolescent ailment. Keshav Patel, MS, MD; and Bernard Cohen, MD

nutrition
33 Early diet affects nutrition later
A look at the impact of poor nutrition during the first 7 years of a child’s life. Miranda Hester

in addition
5 CHAIRMAN’S LETTER
8 EDITOR’S VIEW
9 JOURNAL CLUB
22 MEDICAL ECONOMICS®

THE EDITORS ARE PLEASED TO ANNOUNCE the availability of our new parent company’s continuing education activities. We’ve picked this one especially for our Contemporary Pediatrics® readers. Go to: bit.ly/3apPvkB
With kids home and parents looking for things to do that include “social distancing,” more families will take to the outdoors. The only thing, ticks don’t play by the same rules, so Lyme disease could end up on the rise. When patients aren’t feeling well, anxiety levels could be especially high – and now more than ever they’ll ask to be tested. Sofia 2 Lyme FIA uses a finger-stick whole blood sample to provide accurate, objective and automated results in as few as 3 minutes, getting practitioner and anxious patient on a path to treatment much sooner.

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- CLIA waived
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- Less than 1 minute hands-on-time
- Accuracy comparable to laboratory testing methods

For more information contact Quidel Inside Sales at 858.431.5814
Or go to our website at Sofia2Lyme.com
hope everyone has had a nice summer and a chance to relax and enjoy the fun activities that only the season can bring. It is hard to believe that the new school year is already upon us. As the delta variant of SARS-CoV-2 spreads throughout the United States, especially in unvaccinated populations, it is important to remember that the COVID-19 pandemic is not over. This variant has significant potential to determine the protective protocols that need to be in place so that children can safely return to school this fall.

This month’s journal is a special back-to-school issue focusing on “What will the new school year look like?” It includes:

- An interview with Sally Bode, MD, of the American Academy of Pediatrics’ Council on School Health, who discusses its recommendations for a safe return to in-person learning.
- A must-read article on how remote learning has affected children over the past 18 months, with necessary steps for helping students catch up from remote learning challenges that have significantly impeded academic and social progress.
- An article that examines the emotional fallout in children after 18 months of COVID-19 isolation and the impact that this has had on their mental wellbeing.
- The respiratory report—“bronchitis in children”—is a practical article that provides tips on diagnosing a cough due to bronchitis, and how to distinguish from a COVID-19 cough.
- The dermatology section report is a comprehensive review of everything you need to know about acne vulgaris including the latest treatment regimens.
- The nutrition section reviews a recent study published in the Journal of the Academy of Nutrition and Dietetics that showed children have a lower quality diet between ages of 1 and 3 years.

As always, thank you for providing outstanding care to your patients during these challenging times. Please make time to take care of yourselves. As Jon Bon Jovi stated, “Miracles happen everyday. Change your perception of what a miracle is and you will see them all around you”.

Please stay safe and well. And, as always, I welcome your suggestions, comments, and questions.

With warmest regards,
Tina
Tina Q. Tan
email: titan@luriechildrens.org
iving vitamin D supplements as an adjunct to standard treatment does not lead to better asthma control in children, according to a recent randomized, controlled trial in India. The 3-month trial was conducted in 60 youngsters aged 6 to 11 years who had moderate persistent asthma. Half of the participants were assigned to the intervention group and received 2000 IU of vitamin D per day. The other 30 children, assigned to the control group, received a daily placebo. At baseline, all participants underwent spirometry and fractional exhaled nitric oxide (FeNO) testing and were evaluated for the best forced expiratory volume in 1 second (FEV1). Blood samples were taken to evaluate serum 25(OH)D levels. All participants were treated with daily doses of budesonide 400 µg and formoterol 24 µg. Patients also used a diary to record symptoms, such as cough, breathlessness, sleep disturbance, school absences due to asthma, and use of rescue medicine. Participants were evaluated at monthly clinic visits, with asthma control assessed by the Childhood Asthma Control Test (C-ACT).

As expected, at the trial’s conclusion 12 weeks later, vitamin D levels were significantly higher in the intervention group (35.5 ng/mL vs 18.8 ng/mL). Nonetheless, C-ACT scores (the primary outcome) did not differ significantly between the groups, with median scores of 25 in both (a score of at least 19 indicates well-controlled asthma). Nor was there a significant difference between the 2 groups in FEV1 and FeNO levels. Eleven children had exacerbations (4 in the intervention group and 7 in the placebo group); none required emergency visits or hospitalization. The 2 groups did not differ in the number of exacerbations, emergency visits, and hospital admissions. Systemic steroids were given to 4 participants in the intervention group, 7 in the placebo group.

We are still searching for simple interventions for asthma and for areas in which vitamin D supplementation may be helpful. This does not appear to be such an area. Nevertheless, supplementation is a good idea for many children. Although it did not affect asthma control, vitamin D levels were low in the placebo group.


Jon Matthew Farber, MD, section editor for Journal Club, is a pediatrician in Woodbridge, Virginia. Marian Freedman is a freelance medical editor and writer in New Jersey. The editors have nothing to disclose in regard to affiliations with or financial interests in any organizations that may have an interest in any part of these articles.
Streptococcal infection is common trigger for HSP

Henoch-Schönlein purpura (HSP) is highly associated with streptococcal infection. However, this infection does not aggravate renal pathologic damage, and its elimination appears to protect against relapse or recurrence of HSP. Those were the major findings of a retrospective study conducted in China in 2074 children with HSP based on patients’ histories associated with HSP onset; laboratory data, including urine tests, blood samples, and infectious agents; and renal biopsy. Patients, all of whom were aged younger than 17 years and had purpura, had a median age of 8 years. HSP onset was most common in spring and winter, with the lowest rates in July, August, and September.

Investigators divided patients into 3 groups: those with streptococcal infection (the most common infectious trigger), identified in about 19% of patients with HSP; those with other infections, such as *Helicobacter pylori*; and those with noninfectious triggers, such as allergy. Investigators found no significant differences among the 3 groups with regard to renal pathologic damage. More than a quarter (26.1%) of total patients relapsed or had a recurrence of HSP more than once within a 5-year period. The relapse/recurrence rate was significantly lower in the streptococcal infectious group than in the other infectious group or the noninfectious group.

My work-up for HSP is minimal, usually only a urinalysis. This is just 1 study, retrospective and not conclusive—in a homogenous population, at that—but enough is here that I will probably be adding a strep test when I see these patients.


Positive viral PCR test may not contraindicate cardiac surgery

All by itself, preoperative identification of viral bronchiolitis by polymerase chain reaction (PCR) does not predict increased morbidity or mortality, according to a retrospective review that compared outcomes in patients with virus detected by PCR on nasopharyngeal swabs at the time of surgery with outcomes in patients who tested viral negative. Participants included a group of single-ventricle patients and a group of 2-ventricle patients, all of whom were PCR viral positive but had only mild symptoms or were largely asymptomatic; both groups had cardiac surgery without postpone-ment. The 2 control groups comprised age-and procedure-matched patients who were viral negative at the time of surgery or had no clinical indication warranting respiratory viral testing. Investigators found no statistical difference between the 81 patients with 2 ventricles in the viral-positive group and the control group regarding extubation in the operating room, reintubation, hospital length of stay, or mortality. Similarly, the 36 single-ventricle, viral-positive patients showed no differences in any outcome variable compared with the control group.

When I first started pediatrics, routine preoperative testing included a complete blood count, urinalysis, and often a chest x-ray. We eventually learned that this was worthless in the child who had no clinical indications for testing. The wheel reinvents itself here. Testing for viruses in the not very ill child is not of benefit, even with high-risk surgery.

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In the emergency department, her temperature was 36.7 °C; heart rate was 90 beats per minute (min); respiratory rate, 18 breaths/min; and blood pressure, 112/81, mm Hg. Her height was 59 inches and weight, 48 kg (body mass index, 21). Her physical exam revealed heart rate and rhythm within normal limits and normal effort in breathing, but the patient had decreased breath sounds on the left and mild tenderness to palpation on the left sternal border. The remainder of the exam was unremarkable. There was no pallor, hepatomegaly, splenomegaly, or adenopathy.

Laboratory evaluation included complete blood cell count with differential, D-dimer, and basic metabolic panel, all of which were within normal limits. Serum lithium level was subtherapeutic at 0.3 mg/dL. A urine drug screen was not obtained. A chest x-ray revealed a moderate to large left apical pneumothorax, unremarkable cardiomedistinal silhouette, and no consolidation or effusion.

She was placed on 2 L nasal cannula, with an oxygen saturation of 99%. No change to oxygen saturation was noted on cannula removal. The thoracic surgery department was consulted; nonoperative management of her left-sided pneumothorax was initiated with oxygen via nasal cannula.

Two days after admission, the patient developed worsening pain and shortness of breath. A repeat x-ray showed the size of pneumothorax had increased (Figure). Despite a pigtail catheter chest tube placement, the pneumothorax persisted, and she required video-assisted thoracoscopic surgery (VATS) with left apical blebectomy, mechanical pleurodesis, and dual left side chest tube placement. The postoperative course was uncomplicated. Patient was discharged home on postoperative day 2 following chest tube removal. Gabapentin was added for pain control on discharge. The resected lung tissue specimen was sent for pathological examination.

**Differential diagnosis**

The most common cause of spontaneous pneumothorax in adoles-
Puzzler

Pulmonary neoplasms are uncommon primary tumors and rare causes of pneumothorax in children and adolescents. PPB, a rare malignant intrathoracic tumor in children, is typically diagnosed in children less than 6 years of age. It originates from the lungs or pleura and is classified into 3 subtypes: Type I (our patient), a purely lung cystic neoplasm with some malignant changes, usually occurs in infants and has a good prognosis; type II has both solid and cystic components, with a median age of diagnosis of 34 months; and type III, a solid neoplasm, has a median age of diagnosis of 44 months. Generally, PPB has a poor prognosis because of its aggressive natural history, rare nature, and high rate of misdiagnosis.

The presentation of PPB often consists of vague symptoms, including respiratory distress, pneumothorax, dyspnea, fever, and chest pain. Early manifestations include respiratory distress because of pneumothorax in type I or dyspnea, fever, and chest pain in types II and III. PPB has been identified in adults with smoking history presenting with a large chest mass, fever, chest pain, and hemoptysis. Our patient was beyond the typical age of diagnosis for PPB, especially for type I neoplasm.

Type I tumors require surgical resection to diagnose and treat PPB. Types II and III lesions are treated with surgical resection if possible, chemotherapy and/or radiation therapy. The 5-year disease-free survival rate is 80% to 91% in patients with type I and less than 50% in those with types II and III.

Patient outcome

This patient received a diagnosis of PPB after presenting with spontaneous pneumothorax. She has no prior diagnosis of cancer or other tumor. Diagnosis was only made after pathological examination of the resected lung tissue specimen.

She underwent surgical resection/lobectomy of the affected area in January 2020 and was referred to pediatric oncology, but there is no record of a visit. Because of multiple moves between states, the patient’s follow-up has been inconsistent. At last report, she had undergone a follow-up computed tomography scan that revealed a residual nodule.
Cough is one of the top reasons for outpatient pediatric visits, accounting for nearly 30 million visits each year in the United States alone.¹ There are lots of varieties when it comes to cough—acute, chronic, bacterial, viral—and viral upper respiratory infections are mostly to blame.

RACHAEL ZIMLICH, BSN, RN

One diagnosis that is often associated with cough in adults—both acute and chronic bronchitis—is rarely found in the pediatric population, according to Jeffrey S. Gerber, MD, PhD. Gerber is an attending physician in the Division of Infectious Diseases and medical director of the Antimicrobial Stewardship Program at Children’s Hospital of Philadelphia in Pennsylvania. Children are highly susceptible to acute respiratory infections in general, but the cause is often left underdetermined because many cases resolve on their own. “Bronchitis is rarely used as a diagnosis, and, when it is, the recommendation has always been no antibiotics in otherwise healthy children,” Gerber said.

The “no antibiotics” stance may be firm in research, but the battle can be difficult in the outpatient setting, as parents continue to worry about which bacteria or virus is making their child sick. In the COVID-19 climate, these concerns could be escalated.

The cause of the cough

Upper respiratory infections are a major cause of illness, hospitalization, and death in young children, and many viruses are to blame.² Acute viral bronchitis is generally treated with supportive care, so testing may not take place, especially in short-term, mild, or acute childhood cases.

In cases of bacterial bronchitis—a top cause of wet cough in children—both US and European experts recommend antibiotics. Most often, this involves a 2-week course of amoxicillin-clavulanate, although a 4-week course has been more recently investigated with positive results.³

Fungal infections that lead to chronic cough are another possibility, but this is a distinct condition for which treatment methods are still being debated.⁴

In a world still reeling from the pandemic, there may be questions as to how cough in children is diagnosed, especially as COVID-19 continues to circulate, and many children still remain unvaccinated.

Assessing bronchitis in children

Chronic bronchitis is suspected even less often than acute bronchitis in children. The chronic type is usually linked to adult behaviors like smoking, but children who have a lasting cough may be considered for this diagnosis. Findings of a new study investigating prevalence of chronic bronchitis in young adults reveal an overall prevalence of 5.5%.

Among the young adults in the study who received a diagnosis of chronic bronchitis, 37% were smokers; other identified risk factors included the following⁵:

- Recurrent respiratory infections
- Air pollution exposure before age 4 years
- Exclusive breastfeeding for less than 4 months

Debating the differentials

During COVID-19, it seems that any cough can strike fear of this infection, and clinicians could become overconfident—or underconfident—of their ability to accurately diagnose what is causing a cough. COVID-19 and bronchitis share several symptoms, so it takes a careful assessment, as well as perhaps some imaging studies or laboratory work, to definitively diagnose either.

As difficult as it can be for clinicians to distinguish between these
conditions, it can be even harder for parents. Even before the COVID-19 pandemic began, emergency department visits for cough were on the rise. There are little data that compare how few children were treated for cough during the period that COVID-19 raged, but as the United States approaches another cold and flu season, it is important to review symptoms and plans with parents to help them differentiate between illnesses such as influenza, bronchitis, and COVID-19.

What about this winter?
There is no good way to track how most viruses will circulate in the months ahead, but Gerber offers guidance for clinicians ahead of the post-COVID-19 cold season, especially when it comes to assessing respiratory infections.

“The post-COVID-19 world will likely be somewhat different,” Gerber said. “There are 2 themes that might influence patient and clinician experiences with respiratory viruses. First, many people have come to understand how most respiratory viruses are passed from one person to another.”

That knowledge could help influence the precautions people take as seasonal viruses that cause illnesses such as bronchitis begin to circulate. People might also become more judicious in how they interact with others when sick and how they protect themselves from getting sick, according to Gerber: “I’m not saying we should put on masks at the first sound of a cough or the first day of winter; I’m just speculating that it might happen.”

Second, Gerber said, much has been learned about viruses because of COVID-19, and, hopefully, this first-hand knowledge will better support what research has suggested for years.

“We have all just gotten a crash course in 1 critical difference between viruses, which cause the vast majority of upper respiratory infections, and bacteria, which cause many fewer: Antibiotics don’t work on viruses. Hopefully, this will stick,” Gerber says.

COMMENTS? Email them to llevine@mjhlfsciences.com

For references, go to ContemporaryPediatrics.com/bronchitis-in-children

Rachael Zimlich is a freelance medical writer in Cleveland, Ohio. She has nothing to disclose.

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Did You Know? By 6 months of age, a baby’s iron stores are depleting while their iron requirements are increasing substantially. In fact, 18% of infants are falling short on recommended iron intake. Iron deficiency in children under two years of age can have significant and irreversible effects on brain development. Several key nutrients, such as iron, zinc and choline, are essential to support healthy growth and development in the early years, particularly among infants who are exclusively breastfed and ready to transition to complementary feeding with solid foods. The American Academy of Pediatrics (AAP) recommends introducing nutrient-dense foods, such as meat, during this transition, to help ensure adequate intake of high-quality protein, iron, zinc and choline and to help protect against deficiencies that can impact a child’s development, learning, behavior and growth.

Offering complementary foods in age- and developmentally-appropriate sizes, consistencies and shapes can help infants learn to eat and swallow easily, while also minimizing choking risk. According to the AAP, approximately 2 servings of meat (1-2 ounces/day) can be provided to help meet key nutrient and energy needs. Pureed, ground, shredded, or soft, chopped beef - no more than one-half inch pieces - can introduce a variety of tastes and textures that can safely support babies’ developmental needs, reduce risk of choking and help lay the foundation for a healthy dietary pattern and lifestyle.

To learn more about infant and toddler nutrition, hover your smartphone’s camera over the QR code.

Parents and caregivers are encouraged to consult a physician or health care provider with questions about starting solid foods.

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An executive order by President Joe Biden will direct the Food and Drug Administration to work with states and tribes to import prescription drugs from Canada and pushes the Health and Human Services (HHS) department to increase support for generic and biosimilar drugs, as well as orders HHS to release a comprehensive plan to combat high prescription drug prices and price gouging, according to a fact sheet from the White House.

The July 9, 2021, order encourages the Federal Trade Commission (FTC) to ban so-called pay-for-delay agreements, in which pharmaceutical manufacturers pay generic manufacturers to stay out of the market. This has raised drug prices by $3.5 billion a year, according to the fact sheet.

A separate provision of the executive order also announces a policy for antitrust agencies to focus enforcement on several industries including health care. The order pushes the FTC to ban or limit the use of noncompete agreements in employment contracts. These agreements limit employees’ opportunities when they leave the company, and can lead to costly lawsuits. It is not clear what impact any limitations would have on physicians currently working under a noncompete agreement.

The order also calls on the FTC to ban unnecessary occupational licensing, which limits a person’s chance to find employment across states where licensure may be different. It also encourages the FTC and the US Department of Justice to limit employers’ ability to share information on worker pay, which may amount to collusion.

**REFERENCE**

Reduce Incidence & Shorten Duration of Severe Diaper Dermatitis

Infants’ less effective skin barrier, particularly of those born prematurely, results in a high incidence of diaper dermatitis (DD) in many neonatal intensive care units. Many NICUs lack a standardized approach to perineal skin, which can result in underestimations in the prevalence of DD, challenges in monitoring improvements in care and varying use of cleansing methods and products.

A recent study of 1,070 premature babies* revealed that implementation of new perineal skin care guidelines and use of WaterWipes, baby wipes purer than cotton cloth and water, resulted in a 35% reduction of severe DD, a 57% reduction in duration of severe DD, and a 17% reduction of any incidence of DD.

Read now: contemporarypediatrics.com/diaper_dermatitis

What will the coming school year look like?

Sara Bode, MD, of the AAP Council on School Health, discusses strategies for a live return to classroom learning.

As we were going to press with this issue, the American Academy of Pediatrics had just released its COVID-19 guidance for schools, which recommended, among other things, universal masking in school for everyone aged 2 years and older.

Sara Bode is associate director of the Community Pediatrics Training Initiative at the American Academy of Pediatrics (AAP); deputy editor of Pediatric Care online, incoming chair of the AAP Council on School Health; and author of the AAP’s current interim school guidance, which was being finalized as we went to press. Bode spoke with Contemporary Pediatrics® about what the 2021-2022 school year will look like as some (but not all) restrictions become more relaxed around COVID-19 protocols.

What do you consider the biggest challenges right now as children prepare to return to school this fall?

Bode: First, just as a background statement, the Council on School Health and the AAP have always had a strong statement about the goal being to get kids back to in-person learning. We knew that remote learning was not going to be ideal for both academic learning and social and emotional health, and that is still our North Star. It remains our focus: to continue to help schools work through what they need to do for every student and do it safely.

I think the biggest challenges different communities across the country are facing is changing their mandates around mitigation measures in public around masking and distancing. It is thinking about what that means for students back in the school environment, because they’re a unique group, especially for kids less than 12 years, who, right now, aren’t eligible for vaccines, as well as for older children who have special health care needs and can’t get vaccinated or may be at risk. How do we do all in-person learning safely?

How do we get schools back to all in-person learning but still maintain a safe environment?

Bode: One of the biggest things, which has already changed from last year, was physical distancing. As an example, the Centers for Disease Control and Prevention (CDC) recommendations started with 6 ft of physical distancing between students, and our concern from the Council on School Health was: [Is] that really prohibitive? So many schools just were not able to maintain that, so we had already worked in our recommendations to maintain 3 ft to get kids back. The CDC amended their recommendations to 3 ft. From our perspective, we are going to continue to try to maintain that physical mitigation strategy of 3 ft to the greatest extent possible.

Now, that’s important because there are some schools that can’t even get back to all in-person learning with 3 ft distancing. So from a mitigation strategy, it means thinking about what other layers we can add in to help keep kids safe.

We have put schools in a really tough position because in some communities, outside of the school setting, all mandates have been lifted. For example, I’m from Ohio, where there now are no more masking mandates, and they’ve left it up to individual organizations to put those back into place. And I can tell you from just what I’ve seen over the summer that there aren’t very many locations putting that in place. What that means is families are not masking anywhere in public. But then, when their child starts back in school in the fall, we’re going to say, “You know what? Even though they’re not wearing a mask anywhere else, it’s really important for them to come to school and wear a mask.”

And that is so hard for school districts. I think we’re putting them in a tough position because they’re getting a lot of strong opinions on both sides from their community.
Any thoughts or guidance on school cafeterias regarding lunchtime?

Bode: When you take away some mitigation measures, then you have to make sure you’re maintaining others. Eating lunch is a high-risk activity because, vaccinated or not, everybody’s masks are off. Often children are sitting together at social times and lunchtime. I would say that if you have other times of the school day when it’s challenging to maintain that physical distance, you want to really look at your opportunities to make sure kids are distanced farther apart while they’re eating lunch. It’s use of creative spaces, whether that’s staying in the classrooms to eat or, if it’s not inclement weather, going outside, staggering lunchtimes, those kinds of things. Schools have done a great job of using barriers and other strategies to protect students during that mealtime, so that’s going to be important to look at that as a separate consideration.

It’s impossible to maintain distance during contact sports, such as soccer and football. What does that mean for school sports programs?

Bode: The practicality of those decisions is to maintain the mitigation measures to the greatest extent that they can. We are recommending, particularly for sports, that when they’re not doing the vigorous physical activity—for example, when they come off the field or are on the sideline, all standing in a group—it would be important for them to either socially distance or put on their masks. But when you’re outside and you’re running and actively playing a sport, you may not be able to wear a mask.

Again, this isn’t zero risk. It’s balancing the risks and benefits of each activity. It’s thinking about what are the highest-risk periods and putting those mitigation layers into place while still being allowed to have the sport and play.

Much has been written about children who have fallen behind because of remote access.

Bode: I think this is going to be our biggest ongoing issue and will take continuous vigilance over the next several years. It is not only academic loss; it is also social and emotional. As schools get back to full-time, in-person learning, there will be children that have been really cut off over the past year, from both a peer perspective and an academic perspective. We will really need to think about what support must be put into place for the academic year to help provide the resources for the different levels of groups that need to be identified, for reading skills, math skills, who needs that remediation work, etc.—who is ready to move on to the next level. We need to continue to keep the spotlight on as schools need resources for that.

You simply may not be able to, with 1 teacher and 30 students, provide the level of support needed for each student based on their level of academic loss.

Do you think that will translate into bills being put before Congress?

Bode: Yes. This is going to take additional government resources. I think it’s going to take ongoing funding, and not just from the perspective of setting up safety protocols in the school and getting kids back to in-school learning. Once they are there, what support will be needed from a mental health perspective and other behavioral health support? This will really require boots-on-the-ground staff that can help with this and academic learning as well.

What is the best advice that you can give to pediatricians right now as they see children to ready them for the school year?

Bode: So many things! First of all, vaccination, if they’re eligible. If it’s a younger patient, less than 12 years old, there needs to be an open conversation with the family about that back to in-person learning. What does that mean for the rest of the family? Do other high-risk individuals live in the house and have they been vaccinated, so that they are providing that layer of support? Ask questions about what the child has done in the past year. Have they had any in-person learning, or was it all virtual? Not just did they participate, but how many days? What did their attendance look like with virtual learning? What do the parents think about where their child is in terms of academic levels? Many of our students were on an individualized education plan previously that stopped during the pandemic. Discussion of this will be important. Pediatricians might also talk with the patient’s school personnel early, and work with the teachers to get them any services they need quickly, at the beginning of the school year.

It’s also working with families to talk about how stretched schools have been and supporting the schools in this matter. For pediatricians, that may mean reaching out to teachers more this year than they did in the past. This is all 1 team.

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Conversations within families about school in the fall are occurring across the United States. It will be very important for pediatricians to focus on the concerns and challenges that children and adolescents will face as the nation returns to consistent in-person learning.

Certainly, schools are the places where children receive academic instruction and educational advancement, but they also play a hugely significant role in the overall development and health of children and adolescents. Essential services are delivered in schools, including socioemotional skill building; physical/occupational/speech therapy; mental and behavioral health care; nutrition; safety; and physical activity.

As we emerge from the worst of the pandemic, during which time students have been in varying degrees of virtual learning, it will be critical that pediatricians and pediatric clinicians focus on how to address the health impact and developmental gaps that occurred. Unfortunately, disparities that existed prior to the pandemic were exacerbated by the disproportionate impact on learning for children who are Black, Latinx, American Indian/Alaska Native, or living in poverty, and for those who have disabilities.¹

Without time, funding, and resources to prepare, virtual learning was not equitable despite concerted efforts to reach all students. The “digital divide” or technology gap was quite evident during the pandemic, with 15% of households with school-age children lacking an internet connection at home, according to the Pew Research Center.² The cost of internet connectivity disproportionately affected those with lower household incomes. The Government Accounting Office estimated in 2019 that nearly half of households with incomes less than $25,000 lacked internet access.³ Some studies estimate that more than 25 million family households did not have internet access during the pandemic.³ This created challenges for equitable access to learning, especially for families who have multiple children, limited devices, and minimal to no internet access.

In a virtual learning environment, students miss opportunities to engage directly with teachers to receive additional help with classwork or homework. Teachers are less able to identify which students need special education supports or to identify children who need further assessments for behavioral or mental health conditions, such as attention-deficit/hyperactivity disorder, depression, or anxiety. Some students are less able or unable to engage with virtual learning depending on their age, learning styles, abilities, or interest in school.

Many students lost months of learning, and studies show that long breaks from learning result in loss of skills. For example, the Northwest Evaluation Association (now known as the NWEA) demonstrated that in a normal summer break following third grade, prior to the pandemic, students lose nearly 20% of their gains in reading and 27% of their gains in math.⁴ This loss of learning was even more prominent in adolescents in middle school. Another study demonstrated that the shift to virtual learning compounded racial disparities in learning and achievement. Data from Fall 2020 showed that White students were behind by 1 to 3 months in math, whereas students of color lost 3 to 5 months.⁵

Mental health and access to mental health care were significantly affected by the pandemic and virtual learning. Among adolescents who received mental health services between 2012 and 2015, 35% received these services exclusively from school settings, according to data from the National Survey on Drug Use and Health.⁶ More than 1 in 5 (22.1%) of US children have 1 or more mental, emotional, developmental, or behavioral problems.⁷ During the pandemic, more than 25% of high school students reported worsened emotional and cognitive health. Parents with children aged 5 to 12 years were surveyed as well, and 20% reported that their children experienced worsened mental or emotional health.

“I can’t wait to go back to school!” says one child. “I want to stay home,” says another.
health.9 Loneliness and isolation resulting from virtual learning, social distancing, and stay-at-home orders all negatively affected mental health and exacerbated conditions for those who already had previous diagnoses of depression and anxiety.9

As pediatricians see children and adolescents during the summer months this year, it will be of utmost importance to screen patients for developmental, behavioral, and mental health conditions. Early intervention to avoid further worsening of conditions will be of paramount importance to avoid poor health outcomes over the long term.

The impact of virtual learning was not only felt by children, but by the parents and caregivers as well. An MMWR comparing parents of children receiving in-person schooling with parents of remote learners found that parents of children receiving virtual instruction more frequently reported their own emotional distress, difficulty sleeping, loss of work, concern about job stability, childcare challenges, and conflict between working and providing childcare.10 Pediatric clinicians should address the family and provide culturally appropriate social and mental health supports and community resources as much as possible.

As schools in most areas of the country return to in-person learning the Fall, it is reasonable to expect that some students will have concerns or anxiety about doing so. Similarly, parents/caregivers who are hesitant to send their children back to school for various reasons will need reassurance. Reacclimatization techniques may be helpful, especially for younger students. Parents and caregivers may want to see if opportunities are available for their child to visit the classroom setting prior to school starting. Although pediatricians are used to giving this type of advice for those just starting school (such as entering preschool or kindergarten), this year it may make sense for older children to experience this as well.

To help start the conversation, some opening questions to ask children and adolescents include:

- “What are you looking forward to when school starts?”
- “What are you nervous about when school starts?”

Counsel parents and caregivers to try to keep their own anxieties from impacting their child. Children sense the emotions of their parents/caregivers and can react with somatic and behavioral changes. Parental self-care is important; this helps parents be good role models for their child.

Teach parents to normalize their child’s concerns and worries. Telling children and adolescents that it is normal to be nervous about change can help them to understand that they are not alone.

If they have significant anxiety that will impede learning and successful reentry to in-person schooling, consider teaching stress management techniques such as meditation, mindfulness, and cognitive restructuring. If needed, refer them to a licensed mental health provider for therapy, such as cognitive behavioral therapy.

Before school begins, consider restarting daily routines that mimic going to school. Earlier bedtimes and waking routines, preparing and getting dressed in the mornings, eating breakfast, and being ready for a full day may be routines that need to be practiced. Resetting circadian rhythms, by going to bed 15 to 30 minutes earlier each day until the child or adolescent is going to sleep at a normal school-day bedtime, will help make the transition easier.

For families with children with special health care needs, including behavioral and mental health, therapies and treatments may have been missed or delayed to avoid potential exposure to COVID-19. Pediatric clinicians must reinforce how critical it will be to not delay care any longer. Help parents or caregivers understand early childhood brain development and the changing adolescent brain to encourage earlier treatment. Early childhood brain development research makes it clear that early trauma and early exposures change physiology and genetic expression, ultimately changing long-term health outcomes. For the adolescent brain going through the “pruning” process of normal brain development, the experiences of this past year affected this biologic process.

One can only surmise that the events of the pandemic have permanently changed genetic expression and brain development for many, and that we will be dealing with the impact of this year for decades to come. As pediatricians, it will be our job to work intently and rapidly to help children and adolescents receive the care and treatment they need to mitigate the impact, so that we can help our youngest and most vulnerable achieve optimal health care outcomes.

For references, go to ContemporaryPediatrics.com/impact-of-virtual-learning

Sandy L. Chung is a pediatrician in private practice in Fairfax, Virginia; the CEO of Trusted Doctors, a pediatrician supergroup in Northern Virginia and Maryland; and medical director of Virginia Mental Health Access Program. She has nothing to disclose.
Anxiety and depression were already common disorders among teenagers and adolescents, who are especially sensitive to the layered consequences of COVID-19. There is growing concern that the pandemic has added to the rising rate of adolescent suicide and that any increase in depression will also increase the number of adolescents with suicidal ideation.

Now that the pandemic is being brought under better control and schools are reopening, the structure of school, activities, and social relationships will likely help some adolescents feel less depressed and anxious. Many psychologists have hypothesized, however, that the byproducts of COVID-19 (ie, persistent isolation during quarantine, financial strain, and sickness or death in the family) will have lasting effects on adolescent mental health. These effects may be further exacerbated by the stresses related to re-establishing social relationships, shifting from remote school to the intensity of a classroom, and facing the burden of “catching up” on their academic work and testing (particularly for students with higher support needs and/or those without adequate access to technology over the past year). Because adolescence is a time of such rapid change, every year marks a further blossoming of identity and concomitant stresses, and this second year of COVID-19 dramatically increases the need to assess the psychosocial functioning of adolescents.

How should pediatricians in primary care approach the recognition and management of psychosocial concerns in adolescents who are facing the usual developmental challenges intensified by COVID-19? How should pediatricians assess severity and whether additional primary care management or referral is appropriate? How should they frame their role in adolescent suicidal ideation and suicide prevention? What is the role of primary care follow-up?

**Recognition**

Although parent observations and questions about their child’s mental well-being are always useful in encouraging recognition during a pediatric office visit, parents may not have the awareness or comfort to discuss potential problems in this setting, especially at an early point in adolescent psychosocial disorders. Screening all adolescents for general psychosocial problems and/or depression is the recommended approach.
and effective approach to recognition and is now a quality standard of the American Academy of Pediatrics, Medicaid, and the US Preventive Services Task Force, paralleling screening for growth and health indicators (e.g., hematocrit, urine). Screening has been facilitated by electronic medical record (EMR) systems that allow parents and teenagers to complete screens online or on electronic devices, then automatically score and post the information in the EMR prior to the visit.

For broad psychosocial screening as well as depression screening, the Pediatric Symptom Checklist (PSC) is a validated, approved, and widely used questionnaire. Available at no cost and in more than 30 languages, it is most often completed by parents (although there is also a youth-completed version), and its simple scoring system can be found on the following website: https://www.massgeneral.org/psychiatry/treatments-and-services/pediatric-symptom-checklist/bibliography. Parents can complete the questionnaire in about 3 minutes, and the EMR will report the results as an overall score reflecting psychosocial functioning at home, in school, with peers, and at activities. In addition, 3 subscale scores note risk of depression/anxiety, attention problems, and difficulties with conduct. The pediatrician can see the scores in the EMR to assess if any are positive and, later, assess trends over time with repeated administrations of the PSC.

Adolescent depression is common and has multiple consequences, including poor school performance, substance use, risk-taking behavior, low self-esteem, and suicide risk. Preliminary research suggests that the pandemic is substantially affecting youth mental well-being and indications of depression and anxiety, but about two-thirds will also have other issues related to attention, family problems, and relationships.

### There is a growing concern that the pandemic has added to the rising rate of adolescent suicide.

Some practices have relied on the parent-reported PSC and used the PHQ-9 only if the parents report a high internalizing score on the PSC; however, the PSC alone would miss those adolescents who are functioning well outwardly, but privately feel depressed. Some practices give only the PHQ-9 or the youth-reported PSC, and these will miss the parent’s historical knowledge and more accurate assessment of the teenager’s overall functioning. Based on our recent research, we recommend that primary care practices use both the parent-reported PSC and the youth-reported PHQ-9 for routine psychosocial screening.

### Next steps for patients who screen positive on the PSC and PHQ-9

About 25% of those teenagers scoring positive will be identified only by the overall score of the parent’s PSC and may have positive subscale scores in attention or conduct problems. As with any PSC positive score, most pediatricians look at answers marked “often” (such as “Often does not listen to rules”) to confirm that the parents sense difficulty in daily functioning, and try to define the problem further when talking to the teenager. Some of

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The PHQ-9 is available at no cost to download. Go to stan.md/2WsOXq4
mental health

The following is an outline of questions pediatricians should address:

**Family and teenager’s history of depression, substance use, suicide attempts**

Family and adolescent’s history of depression and substance use adds substantial risk. A family member dying by suicide can have multigenerational impact that leads to increased risk.

**Previous suicide attempt**

Only a small percentage of teenagers with suicidal ideation go on to attempt suicide, so this latter group is at higher risk, especially if their attempt was serious with rescue unlikely.

**Major loss: family discord, relationships, profound failure (subsequent impact on self-esteem)**

As adolescents try to establish their own identity outside of the family, they make large emotional bets on relationships, academics, or sports; this makes them vulnerable to feeling hopeless if they feel they have been rejected or failed. Adolescents may have a less secure home base, essential to developing their own identity, because of domestic violence and tensions increased by COVID-19–related isolation and job loss.

**Current functioning: school, activity, peers, family**

A key indicator of severity is how well the teenager can continue to function productively in the key areas of daily life. As the COVID-19 infection rate decreases and students return to school full-time, pediatricians should take particular notice of how their patients are adjusting and functioning socially, personally, and academically after such an isolating year.

**Subjective suffering; intensity of suicidal ideation**

On the basis of interview and empathy, how profoundly is the teenager suffering? How hopeless and helpless do they feel?

**Connectedness to individuals, areas of strength, religion**

Feeling connected, feeling both value and valued in a relationship (ie, with parents, coaches, friends), participating in activities (ie, orchestra, team sports) or in cultural, religious, or other organizations, and having an area of strength are seen as protective or resilience factors. Connectedness to a teacher, friends, or activities may have been particularly severed by COVID-19.

These problems, such as attention-related or divorce-related issues, will be known to the pediatrician from previous visits and require less time to evaluate.

New issues will need to be assessed for severity and a decision made whether to offer guidance, schedule follow-up visits to track the problem, or, if serious, refer for a full mental health evaluation. Practices are collaborating, or increasingly colocating, with social workers and psychologists who can provide access to mental health services onsite.

Among the teenagers with a positive screen on the parent-reported PSC, approximately 75% will also have a positive internalizing score, and most of these teenagers will also have a positive PHQ-9 score for depression. The score on the PHQ-9 defines depression severity: 0 to 4 (none), 5 to 9 (mild), 10 to 14 (moderate), 15 to 19 (moderately severe), and 20 to 27 (severe). Most scores are moderate or lower, with only about 3% of teenagers scoring in the moderately severe or severe range. Adolescents have variations in mood and on any given day, their scores may vary from mild to moderate, or moderate to severe. It is meaningful for the pediatrician to review scores and note changes from prior visits.

With these positive indications, the pediatrician should do a brief assessment of the depression and its severity, and the risk of suicide. Teenagers developmentally are often not comfortable being open and forthright with adults. The pediatrician must use clinical skill (tone, posture, taking time, listening) to create a sense of trust and connectedness with the adolescent such that sufficient honest information can be gathered to ascertain the severity and risks of the depression.
Framing an approach to suicide ideation and prevention

Pediatricians are understandably anxious given the rising rates (and the horror) of a teenager dying by suicide or a depressed teenager taking risks, such as drunk driving, that results in a death called an “accident.” The clinical dilemma arises from the rarity of these events and their lack of predictability. Preliminary research has suggested increased rates of youth suicide attempts during the pandemic compared with 2019, but it is still too soon to fully assess the impact of the pandemic on adolescent suicide rates.

Among adolescents, deaths by suicide occur at a rate of approximately 10 in 100,000, annually. Based on the results of prior research in an older adolescent and adult population, it is likely that these 10 adolescents would have varied responses to question 9 of the PHQ-9, with some endorsing suicidal thoughts frequently but others endorsing no suicidal thoughts. Although accidents, some related to risk taking and illnesses, would have contributed to some more deaths, overwhelmingly most of the 100,000 cohort would be alive. We will discuss risk factors, but our current state of knowledge cannot predict which individual will commit a suicidal act or take a harmful risk, or when.

With these statistics and our lack of knowledge, pediatricians cannot (except in unusual circumstances) expect that they will prevent suicide either immediately or over the next 2 years. Suicidal ideation, depression, and positive parent-reported PSC scores are all alerts that a teenager is in emotional distress. They are more vulnerable to problems in school, family, or with peers, and to substance use, psychiatric disorders, and emotional suffering. Rather than focusing on immediate suicide prevention, the PSC and PHQ-9 select a population of teenagers who have “enduring vulnerability.” The screening interview is the first step in assessing the severity of this vulnerability and making recommendations.

The pediatrician must use tone, posture, taking time and listening to create a sense of trust with the adolescent.

This vulnerability is chronic, and just as with any chronic condition, the pediatrician provides appropriate follow-up and tracking. It is likely that half of teenagers who are identified as positive by the PSC and PHQ-9 will improve, and on repeat screening over time, will move from the positive to the negative score range or be at much lower risk. The remaining half, approximately 7% to 10% of all teenagers, will have more chronic or enduring vulnerability and will need ongoing follow-up and efforts to optimize helpful interventions.

When to refer and follow up

Pediatricians should base referral decisions on their severity assessment and comfort level. Usually pediatricians are skillful in sensing the scale and complexity of a psychosocial issue and should refer for mental health evaluation. In general, if the PHQ-9 is positive in the range of moderate or above, and thoughts of death and suicide are frequent, timely referral is indicated to an experienced psychologist or psychiatrist. In less severe circumstances, the pediatrician can make recommendations concerning immediate stressors, suggest lifestyle changes (exercise, adequate sleep, meditation, activities that support self-esteem, tutoring, summer programs, etc), and offer guidance to both parents and the teenager. If specific depression treatment is indicated, referral for cognitive behavior therapy is a sound additional step. An increasing number of pediatricians are comfortable using first-line antidepressants to treat depression and anxiety. The evidence for the use of medication is stronger in more severe cases than in mild ones.

What will be of help in dealing with mental health requirements at baseline, and with heightened needs post COVID-19? First, psychosocial screening should be a routine process, just like taking vital signs. Second, follow-up should be consistent, to assess the trajectory of any issue, especially depression, and gain a deeper understanding of the patient. Third, have mental health experts accessible and ideally integrated into pediatric practice, working closely with clinicians to improve access and quality. In the near future, the use of artificial intelligence and large data sets derived from EMRs will hopefully facilitate the discovery of history and behavior patterns that provide more specific guidance for treatment, especially medication.

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For references, go to ContemporaryPediatrics.com/assessing-covid-19-impact
What causes acne vulgaris?
This inflammatory skin condition, which appears most commonly on the face (but can also affect the chest, shoulders, and upper back), often occurs because of a blockage of the pilosebaceous unit, increased sebum production, altered keratinization, and increased colonization of Cutibacterium acnes.

Are there common triggers and risk factors for acne?
Changes in hormones commonly trigger teenage acne. Testosterone usually increases during puberty and is one of the main causes of teenage acne. Many patients may believe that this hormone is only a trigger in boys, but testosterone levels also peak in girls around puberty. In most patients, the acne will resolve in adulthood.

Some common risk factors for acne include genetic predisposition, anxiety, stress, menstrual cycle, heat, and humidity. Use of cosmetic products, poor skin hygiene, and pregnancy may also trigger acne. Steroid use is another common trigger and may be seen in both male and female athletes who desire more muscle mass to improve their performance.

What are the different types of acne? How is it graded?
Acne can be comedonal, papulopustular, mixed, or nodular. In terms of severity, there are numerous different grading methods. It is crucial to recognize the type of acne because the clinical type and severity may affect treatment. The US Food and Drug Administration recommends grading acne via an Investigator’s Global Assessment scale (Table).

What conditions contribute to severe acne in teenagers?
Polycystic ovarian syndrome, Cushing syndrome, and congenital adrenal hyperplasia can lead to the development of acne in teenagers and will be accompanied by other symptoms. For example, with polycystic ovarian syndrome, patients may have irregular menstrual periods, excessive body hair growth, and hair thinning.

TABLE GRADING OF ACNE VIA INVESTIGATOR’S GLOBAL ASSESSMENT SCALE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Clear</td>
</tr>
<tr>
<td>1</td>
<td>Almost clear</td>
</tr>
<tr>
<td>2</td>
<td>Mild severity</td>
</tr>
<tr>
<td>3</td>
<td>Moderate severity</td>
</tr>
<tr>
<td>4</td>
<td>Severe</td>
</tr>
</tbody>
</table>

Keshav Patel, MD
Keshav Patel is an internal medicine resident physician at the University of Chicago in Illinois. He has nothing to disclose.

Bernard A. Cohen, MD
Bernard A. Cohen, section editor for Dermcase, professor of pediatrics and dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland.
There are scant data on variation in diet quality trajectories in early childhood. A report in the Journal of the Academy of Nutrition and Dietetics sought to identify and evaluate these paths.

Investigators performed a secondary analysis of an observational, longitudinal cohort study that included non-Hispanic Black and White children, as well as their parents, from racially concordant homes. Four years of follow-up included up to 13 study visits for each child. At baseline, body mass index, infant feeding habits, and data on the mother were collected. The child’s diet was evaluated at each visit through a 3-day diary. The main outcome measures were the Healthy Eating Index-2005 (HEI-2005) component scores and total HEI-2005 score.

Investigators concluded that children had low diet quality at age 3 years, and this remained stable to age 7 years. All children’s diets could be improved with increased consumption of vegetables and whole grains. In families at increased risk of overall low diet quality, there should be a concentrated effort to increase fruit intake and reduce the consumption of solid fats, alcoholic beverages, and added sugars.

For reference and to read the full article, go to bit.ly/3rkJiO8
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  NAPNAP............................... 21
  https://www.napnap.org/

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  Perrigo.................................. 11
  https://www.perrigo.com/

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  Quidel.................................... 7
  https://www.quidel.com/

- REESE PHARMACEUTICAL COMPANY
  Reese................................. 33
  https://reesepharmaceutical.com/

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