Mild Acne - Guidelines for Prescribing Topical Treatment (BC)

- Acne vulgaris (acne) is the formation of comedones, papules, pustules, nodules, and/or cysts as a result of obstruction and inflammation of pilosebaceous units which consist of the hair shafts, hair follicles, and accompanying sebaceous glands.
- Typically starts at puberty, increases in severity until the late teens then slowly abates. However, later onset during adult years can occur.
- Diagnosis is based on physical signs and symptoms. Further investigation is not necessary unless secondary causes are suspected.
- Treatment is with a variety of topical and systemic agents intended to reduce sebum production, infection, inflammation and to normalize keratinization.

Signs and Symptoms

Areas typically affected include:

- Face
- Neck
- Chest
- Upper back
- Upper arms

Presence of comedones

- **Closed comedones** are called **"whiteheads".** Whiteheads are flesh-colored or whitish raised bumps 1 to 3 mm in diameter.
- **Open comedones** are called **"blackheads".** They present with a dark center (oxidized keratin, dead cells).
- Comedones are not infected.

Presence of inflammatory lesions

- **Papules** (small red, round or oval raised bumps)
- **Pustules** (pus-filled lesions)
- **Nodules** (tender, red, swollen with less defined borders)
- **Cysts** (deep pustules)

Severity of the patient's acne

- **Mild**: Some papules or pustules; no nodules or cysts
- **Moderate**: Many papules and pustules; few nodules, no cysts
- **Severe**: Numerous papules and pustules; many nodules or cysts

Differential Assessment

Rule out the following conditions which have signs / symptoms that may resemble acne vulgaris:

- **Acne conglobata** - occurs when sinus tracts (channels) form between acne lesions resulting in the formation of cysts and abscesses. This type of acne is considered severe and often requires systemic treatment. Suspected cases should be referred to the patient's primary care practitioner.
- **Acne fulminans** - an acute eruption of large inflammatory nodules, occurring most frequently in males. It also presents with arthralgia and fever. This is a serious condition and requires emergency treatment.
- **Contact acne** - may be caused by hair product use, certain cosmetics, or occupational exposure to oil.
    - Suspect pomade or hair product use if the acne occurs near the hairline.
    - Ask about the use of oil-based cosmetics and if make-up is removed each night.
    - Exposure to oily substances in the environment, such as working as a fast-food cook, should also be investigated.
- **Excoriated acne** - results from the patient picking or scratching at their lesions. A hallmark sign of this is scars in the absence of cysts or nodules, or hyperpigmentation of an area that can last years.
- **Mechanical acne** - the result of physical irritation to an area leading to the acne lesions, such as a sweat band rubbing against the forehead.
- **Drug-induced acne** - from medications that can cause/worsen acne: glucocorticoids (oral, inhaled, and topical), androgens, hormonal contraceptives with higher androgenic activity,

phenytoin, lithium, isoniazid, and others. Has the patient recently started a new medication preceding the acne flare up?

- **Rosacea** - acne-like lesions (red papules and pustules) without comedones, associated with facial flushing, telangiectases, sore and tired eyes or red, sore, gritty eyelid margins.
- **Milia -** small white cysts just under the surface of the skin. Typically seen in infants but can occur in all ages. Harmless, no treatment necessary unless very bothersome to the patient.
- **Periorificial dermatitis** - lesions clustered around mouth and nasal folds. More common in women than men. Most frequently caused by topical or inhaled steroid use.
- **Skin infections** - such as **impetigo** (small fragile pustules; honey-coloured crusted erosions) or **folliculitis** (red, often itchy, papules and/or pustules, occur at base of a hair shaft). See the guideline **Superficial Bacterial Skin Infections**.

Acne Variant	Comedones		Pustules	Papules	Nodules	Other
	Open	Closed				
Vulgaris	X	X	X	X	X	
Conglobata			X	XX	XX	Cysts, abscesses, sinus tracts
Fulminans			X	XX	XX	Ulcerating cysts
Contact: hair products		XX	X			Occurs near hair-line
Contact: cosmetic	X	XX	XX	X		Occurs where cosmetics used

Acne Variant	Comedones		Pustules	Papules	Nodules	Other
Contact: occupational		XX	X	X		
Excoriated			X	X		Crusts, scars, erosions, hyperpigmentation
Mechanical		XX	XX	X		
Drug-induced		+/-	X	X		
Rosacea			X	X	+/-	Facial flushing, redness, telangiectases, ocular symptoms

When to Refer

Diagnosis of acne is based on the presence of comedones and / or inflammatory lesions. Patients with mild acne signs/symptoms generally do not require further investigation; however, assessment by the patient's primary care provider is recommended in the following situations:

- **Age < 12 years**
- **New onset at age >30 years**
- **Widespread distribution** of lesions beyond face
- Number and severity of lesions indicates **moderate or possibly severe acne**:
    - Number of comedones > 20, OR

    - Number of inflammatory lesions (papules or pustules) > 15, OR
    - Total number of lesions > 30
- Presence of erythema, papules, pustules in the absence of comedones
- Family history of scarring acne
- Signs of **hyperandrogenism** are present such as: hirsutism, infertility, infrequent menses, insulin-resistant diabetes, middle-age onset in female sex
- Sudden onset of acne associated with fever and arthralgias
- Excessive embarrassment, anxiety, low self-esteem, or feelings of shame
- Unable to confirm patient's self-diagnosis and/or self-care is not appropriate. Refer to the patient's primary care provider for further investigation and/or supervised therapy.

Treatment

Non-Pharmacologic Treatment

- General measures and basic care are recommended at all levels of management.
- Affected areas should be cleansed no more than twice daily. More frequent washings, use of antibacterial soaps, and scrubbing confer no added benefit. Scrubbing may promote the development of inflammatory lesions.
- Changes in diet are unnecessary and ineffective, although moderation of milk intake might be considered for treatment-resistant adolescent acne.
- Picking, squeezing, or excoriation of inflammatory lesions delays healing and promotes scarring, and, therefore, should be avoided.
- Choose cosmetics, hair products, creams or lotions which are labelled "oil-free" ,"water-based" or "non-comedogenic".
- Minimize mechanical occlusion from turtlenecks, bra straps, shoulder pads, orthopedic braces, and sports helmets.
- Reduce stress level. Studies have shown some correlation between stress level and acne severity among high school and university students.
- Various lasers, intense pulsed light, microdermabrasion, chemical peels and photodynamic therapy are helpful in certain situations

but are expensive, rarely insured, often painful and must be administered on an ongoing basis. They are rarely required for effective acne management.

Pharmacologic Treatment

- Topical agents should be **applied to the entire affected area** and not used as spot treatment.
- Initial worsening may occur in the first 2 to 4 weeks of treatment; allow up to 12 weeks to see maximum improvement.

Over-the-Counter Options

- Sulfur, salicylic acid, and resorcinol: these are peeling agents and are of minor therapeutic value.
- **Benzoyl peroxide** 2.5% -10% (prescription required for > 5% strengths)
    - Mildly comedolytic and antibacterial
    - First line therapy for mild to moderate acne
    - 5% formulations as effective as 10% prescription formulations with less skin irritation
    - Water-based formulations are less drying than alcohol-based products
    - **Directions:**
        - Apply to **entire affected area** once daily at bedtime
        - Dosage may be increased to twice daily
        - Start with lower strength (2.5%-5%) or less frequent nighttime application (e.g. every other night)
        - Increase strength or frequency as tolerated
        - **Benzoyl peroxide degrades retinoids - administration times must be separated** (e.g. benzoyl peroxide in the morning, retinoid at night**) or a combination product used**
        - May cause **bleaching** of hair, clothing, towels, and bedding

Prescription Options

Topical Retinoids

- Some guidelines recommend topical retinoids as first line treatment for mild to moderate comedonal (e.g. non-inflammatory lesions predominate) acne.
- There are four choices: **adapalene, tazarotene, tretinoin and trifarotene**.
    - Adapalene is the least irritating, but is expensive. A commercial product containing adapalene and benzoyl peroxide is also available.
    - Tazarotene is the most potent, and therefore, the most likely to cause irritation.
    - Tretinoin is the most cost-effective but also the most photosensitizing.
        - Exception: Retin A Micro® is approximately as irritating as adapalene.
    - Trifarotene may be better tolerated, however, there is limited comparative data. Trifarotene is the most expensive.
- The retinoids come in cream and gel formulations. Creams are typically less irritating, but less potent than gels.
- **Start with the lowest concentration** available of the chosen product, and increase as needed.
- **Directions:**
    - Apply to **entire affected area**, at bedtime waiting 30 minutes after washing to ensure that skin is dry. (Moist skin is more absorbent. This increases the risk of skin irritation.)
    - Product should disappear almost immediately; if some product remains unabsorbed, decrease the amount applied.
    - Skin redness and irritation are the most common side effects. Slowly titrating up application time can reduce this.
        - **Start** with a **low concentration** product and apply only once every 2 to 3 nights.
        - Use **short contact times** -start with 2 hours and add 30 minutes per dose.
    - Apply **separately from benzoyl peroxide products** (e.g. benzoyl peroxide in the morning, retinoid at night), unless using a combination product.
- Initial worsening may occur in the first 2 to 4 weeks of treatment; allow up to 12 weeks to see maximum improvement.
- After successful course, may consider step-down to less frequent (once every 2 to 3 nights) maintenance treatment.
- Recommend that the patient also use sunscreen SPF 15-30 due to risk of photosensitization (lower risk with adapalene).

Topical Antibiotics

- Topical antibiotics are most effective for inflammatory acne (e.g. papules, pustules, nodules, and cysts).
- **Clindamycin and erythromycin** are the most useful antibiotics for topical acne treatment.
- Not recommended for monotherapy; use in combination with benzoyl peroxide reduces the chance of bacterial resistance developing.
- Less irritating than benzoyl peroxide or retinoids, but may still cause some redness, peeling, itching, dryness and burning.
- **Directions**:
    - Apply to **entire affected area** twice daily.
    - Treatment can be stopped when inflammation is gone.
- May take 8 to 12 weeks for improvement.

Topical Antibiotics and Retinoid

- Best for cases with mixed lesion types.
- Combinations available:
    - **clindamycin + tretinoin**
- Combining topical antibiotics with topical retinoids is also effective for mild acne and may improve treatment outcome.
- **Directions**:
    - Apply to **entire affected area** once daily in the evening.
    - Recommended duration of treatment is a maximum of 12 weeks .
- Skin dryness and itchiness/rash are the most common side effects, which generally peak within 2 weeks of treatment and then decreases.
- Recommend that the patient also use sunscreen SPF 15 to 30 due to risk of photosensitization.

Topical Retinoids and Benzoyl Peroxide

- Best for cases with mixed lesion types.
- Combinations available:
    - **adapalene 0.1% + benzoyl peroxide 2.5%**
        - Note: adapalene 0.3% + benzoyl peroxide 2.5% product (e.g. TactuPump Forte®) is indicated for treatment of moderate and severe acne.

- Provides convenience of both agents in one product versus having to separate application times.
- **Directions**:
    - Apply to **entire affected area** once daily in the evening.
- Initial worsening may occur in the first 2 to 4 weeks of treatment; allow up to 12 weeks to see maximum improvement.
- Skin dryness, scaling, itching and burning/stinging are the most common side effects, which generally gradually decrease with time.
- May cause **bleaching** of hair, clothing, towels, and bedding.
- Recommend that the patient also use sunscreen SPF 15-30 due to risk of photosensitization (lower risk with adapalene).

Topical Antibiotics and Benzoyl Peroxide

- Best for cases with mixed lesion types.
- Combinations available:
    - **clindamycin + benzoyl peroxide**
    - **erythromycin + benzoyl peroxide**
- Use of combination prevents development of antibiotic resistance.
- **Directions:**
    - Apply to **entire affected area** once daily at bedtime.
    - Dosage may be increased to twice daily.
- Initial worsening may occur in the first 2 to 4 weeks of treatment; allow up to 8 to 12 weeks to see maximum improvement.
- May cause **bleaching** of hair, clothing, towels, and bedding.

Alternative Topicals: Dapsone

- Best for cases of inflammatory acne, particularly in adult females.
- Synthetic sulfone that possesses both anti-inflammatory and antimicrobial properties, although the anti-inflammatory effect is predominant.
- **Directions**:
    - Apply to **entire affected area** twice daily.
- May cause **a yellow/orange discoloration of the skin and hair if used concomitantly with benzoyl peroxide.** Be sure to wash off the benzoyl peroxide prior to application of the dapsone.
- May cause mild irritation.
- Topical treatment does not seem to pose the same risks that are associated with systemic therapy. Although the risk of hemolysis in

a patient that is glucose-6-phosphate dehydrogenase deficient is remote, emphasis should be placed on ensuring the product is only used on the face and not on a widespread area(s).

Choices during Pregnancy and Lactation

- Topical use of benzoyl peroxide, erythromycin, and clindamycin are considered safe due to minimal systemic absorption. These agents are also compatible with breastfeeding.
- **Retinoids are contraindicated** during pregnancy.
- Retinoids can be used during lactation, but little data is available, so prefer using an alternative if possible.

General Advice / Monitoring

Advice

- General measures and basic care (under non-pharmacological treatment) should be recommended at all levels of management.
- Topical agents should be applied to the entire affected area and not used as "spot treatment".
- In general, one to two pea-sized amounts are sufficient to cover the entire face. Product should quickly disappear. If it does not- reduce the amount for next application.
- Symptoms may worsen initially for the first 2 to 4 weeks; may take up to 3 months for maximum improvement of symptoms.
- Tolerance to the irritation caused by topicals usually occurs with continued use but patients should be advised to consult their pharmacist or patient's primary care provider if the skin irritation becomes severe.
    - Recommend a method to titrate up contact time to help build tolerance and reduce irritation.
- Recommend that the patient also use sunscreen with SPF 15 to 30.

Assess Benefit

- Follow-up with patient to assess effectiveness at **8 weeks**
- A reasonable goal for 8 week progress would be:
    - Lesion count decreased by 10-25%

    - Comedones have decreased or fewer are developing
    - Inflammatory lesions have mostly resolved in a few weeks
- **If no response and symptoms worsening**, refer to patient's primary care provider.
- **If no or inadequate response (but not worsening)**, consider switching topical agents (e.g. a retinoid to replace BP) or combining retinoid and BP. For inflammatory symptoms (e.g. papules, pustules), consider adding a topical antibiotic.
- **If the patient's symptoms are responding well** to initial agent(s), provide refills as appropriate, for up to 6 months total duration.
    - For patients who have responded well to **benzoyl peroxide or a topical retinoid, maintenance regimen can be continued indefinitely.**
    - **Topical antibiotics** should be **discontinued after resolution** of inflammatory symptoms.

Assess Adverse Effects

- For general skin dryness, recommend an oil-free moisturizer.
- Benzoyl peroxide: excessive skin irritation
    - Try a lower concentration of benzoyl peroxide
    - Try less frequent application (e.g. every other day or shorter contact times and slowly increasing)
    - Try a different base formulation (e.g. a cream for its moisturizing effect). Drying effects - lotion < water-based gel < alcohol-based gel
    - Contact dermatitis is a rare adverse effect. If suspected, patients should discontinue benzoyl peroxide therapy and consult their primary care provider.
- Retinoids: excessive skin irritation
    - Start with lower strength and gradually increase dose
    - Apply on alternate days initially, then increase to once daily as tolerance develops.
    - Consider switching to adapalene if not initial agent.
    - If very irritating, the product may be applied for a shortened application time and then washed off.
- Topical antibiotics rarely cause excessive skin irritation.
- If hypersensitivity reaction to any product, discontinue and consider switching to a different product once reaction has resolved or refer patient to primary care provider.

- **Eligible Schedule 1 Drugs for Mild Acne**
- **Detailed information on contraindications, cautions, adverse effects and interactions is available in individual drug monographs in CPS, Lexi-Comp, AHFS, www.drugs.com or other reliable drug monograph references. For comprehensive drug comparisons, see RxFiles charts (www.rxfiles.ca). This information should be routinely consulted before prescribing.**

Generic Name	Strength/Formulation
Adapalene	0.1% Topical Cream & Gel 0.3% Topical Gel
Adapalene : Benzoyl Peroxide	0.1% : 2.5% Topical Gel Note: 0.3% : 2.5% Topical Gel e.g. TactuPump Forte® is not indicated for mild acne
Benzoyl Peroxide	10% Wash Note: 2.5% -5% Gel, Wash & Lotion are available OTC
Clindamycin	1% Topical Solution
Dapsone	5% Topical Gel
Tazarotene	0.045% Topical Lotion
Trifarotene	0.005% Topical Cream
Tretinoin	0.01%, 0.025% & 0.05% Topical Cream 0.01%, 0.025% & 0.05% Topical Gel

Generic Name	Strength/Formulation
	0.04% Topical Gel (microsphere) 0.1% Topical Gel (microsphere)
Tretinoin : Clindamycin	0.025% : 1.2% Topical Gel
This list may not include all products approved in British Columbia, please refer to the **Health Professions Act Pharmacists Regulations** for disease, disorder or condition and associated drug categories.	