Summary Report

Dexamethasone Acetate

Prepared for:

Food and Drug Administration
Clinical use of bulk drug substances nominated for inclusion on the 503B Bulks List
Grant number: 2U01FD005946

Prepared by:

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REVIEW OF NOMINATIONS

Dexamethasone acetate (UNII code: E2287TKU04) was nominated for inclusion on the 503B Bulks List by Specialty Sterile Pharmaceutical Society and Rebecca Mitchell. Dexamethasone acetate was nominated for use in various conditions via an oral solution, topical gel, and injection solutions in concentrations ranging from 0.4% to 1-24mg/mL. Additionally, dexamethasone acetate will be compounded as an 8-16mg/mL intramuscular suspension for injection.

Reasons provided for nomination to the 503B Bulks List include:

- Prescriber preference to varying concentrations, volumes, or final product containers for administration.
- Dexamethasone acetate used to be commercially available but has been discontinued.
- It is utilized by many practitioners for various indications and is preferred for its relative potency compared to hydrocortisone and other available corticosteroids, onset, duration of action, and for its lack of mineralocorticoid activity.
- It is relatively unsafe to expose the direct compounding area to hundreds of vials or ampules and hundreds of aseptic manipulations during the compounding of a typical batch size for an outsourcing facility; compounding from bulk is safer and more efficient.
- Commercially available finished products have an inherent variance in potency creating an uncertain final concentration for the new product.
- Use of state-of-the-art equipment, like the SKAN isolator technology, requires the use of bulk starting materials.

METHODOLOGY

Background information

The national medicine registers of 13 countries and regions were searched to establish the availability of dexamethasone acetate products in the United States (US) and around the world. The World Health Organization, the European Medicines Agency (EMA), and globalEDGE were used to identify regulatory agencies in non-US countries. The medicine registers of non-US regulatory agencies were selected for inclusion if they met the following criteria: freely accessible; able to search and retrieve results in English language; and desired information, specifically, product trade name, active ingredient, strength, form, route of administration (ROA), and approval status, provided in a useable format. Based on these criteria, the medicine registers of 13 countries/regions were searched: US, Canada, European Union (EU), United Kingdom (UK), Ireland, Belgium, Latvia, Australia, New Zealand, Saudi Arabia, Abu Dhabi, Hong Kong, and Namibia. Both the EMA and the national registers of select EU countries (Ireland, UK, Belgium, and Latvia) were searched because some medicines were authorized for use in the EU and not available in a member country and vice versa.

Each medicine register was searched for dexamethasone acetate; name variations of dexamethasone acetate were entered if the initial search retrieved no results. The following information from the search results of each register was recorded in a spreadsheet: product trade name; active ingredient; strength; form; ROA; status and/or schedule; approval date. Information was recorded only for products with strengths, forms, and/or ROA similar to those requested in the nominations.

In addition to the aforementioned medicine registers, the DrugBank database (version 5.1.4) and the Natural Medicines database were searched for availability of over-the-counter (OTC) products containing

dexamethasone acetate. The availability of OTC products (yes/no) in the US and the ROA of these products were recorded in a spreadsheet. Individual product information was not recorded.

Systematic literature review

Search strategy

Two databases (PubMed and Embase) were searched including any date through June 18, 2019. The search included a combination of ("dexamethasone acetate"[TIAB] AND (intravenous OR injection OR topical OR oral OR intramuscular OR suspension OR solution OR gel) AND English[lang] AND humans[MeSH Terms] NOT autism). Peer-reviewed articles as well as grey literature were included in the search. Search results from each database were exported to Covidence®, merged, and sorted for removal of duplicate citations.

Study selection

Literature reviews and/or meta-analyses, cost-effectiveness, and epidemiological studies were excluded. Dexamethasone acetate is a component of an FDA-approved product that has been discontinued by the manufacturer, not for safety or efficacy reasons. As a result, articles were excluded if dexamethasone acetate was utilized as the FDA-approved product or in the same concentration and formulation as the FDA-approved product. Articles were considered relevant based on the identification of a clinical use of dexamethasone acetate or the implementation of dexamethasone acetate in clinical practice. Articles were excluded if not in English, a clinical use was not identified, incorrect salt form, or if the study was not conducted in humans. Screening of all titles, abstracts, and full-text were conducted independently by two reviewers. All screening disagreements were reconciled by a third reviewer.

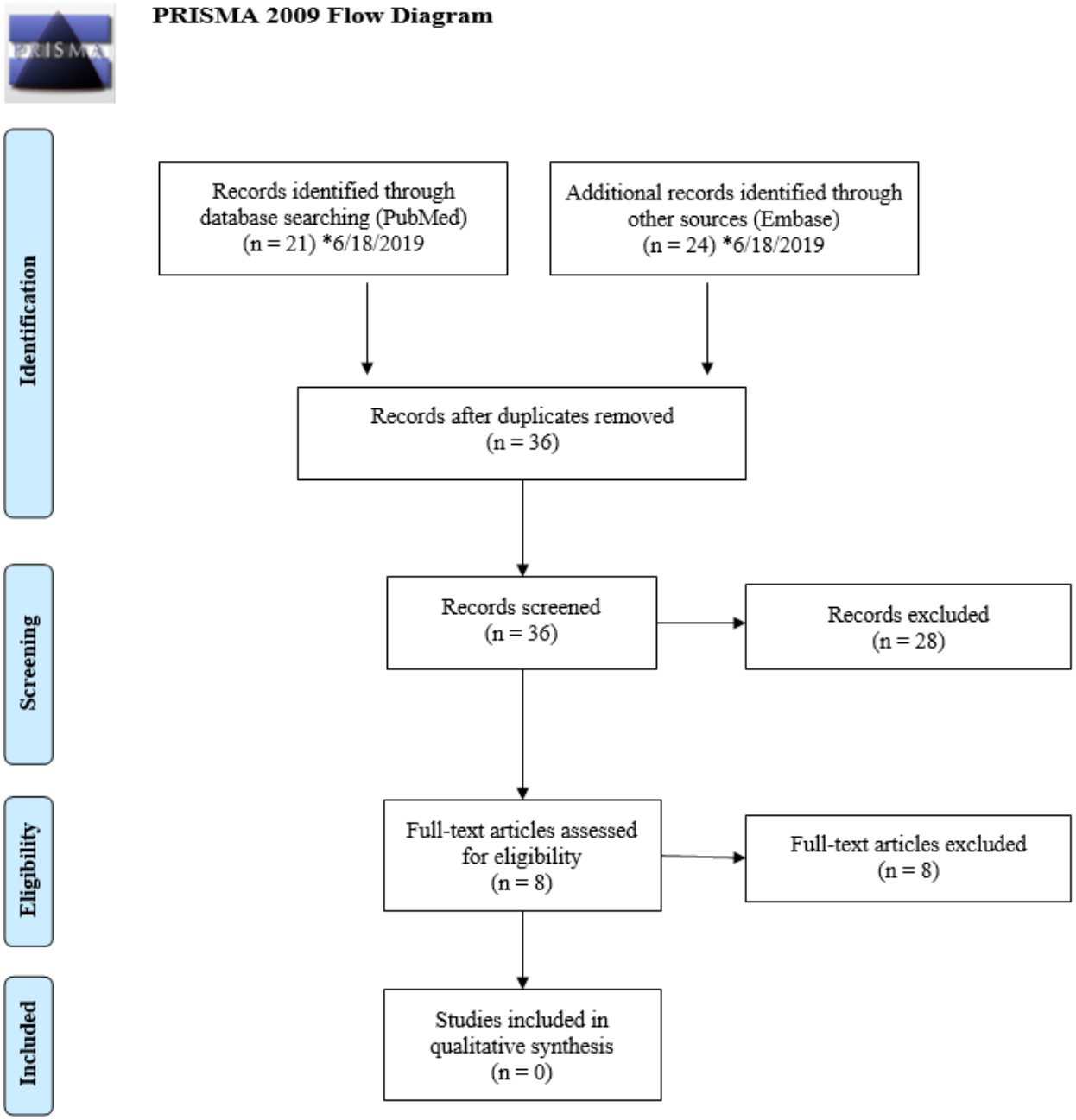
Data extraction

A standard data extraction form was used to collect study authors; article title; year published; journal title; country; indication for dexamethasone acetate use; dose; strength; dosage form; ROA; frequency and duration of therapy; any combination therapy utilized; if applicable, formulation of compounded products; study design; and any discussion surrounding the use of dexamethasone acetate compared to alternative therapies.

Results

Please refer to Figure 1.

Figure 1. Summary of literature screening and selection (PRISMA 2009 Flow Diagram)



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

Outreach to medical specialists and specialty organizations

Using the indications from the nominations and the results of the literature review, sixteen (16) medical specialties that would potentially use dexamethasone acetate were identified: allergy, dermatology, endocrinology, gastroenterology, hematology, infectious disease, nephrology, neurology, oncology, ophthalmology, otolaryngology, pain management, primary care, pulmonology, rheumatology, and surgery. Semi-structured interviews were conducted with subject matter experts within these specialties. Interviews lasted from 30-75 minutes and were conducted via either telephone or in-person. Criteria for selecting subject matter experts included recommendations provided by specialty professional associations, convenient geographic location, authorship within the specialty, or referral by an interviewee. Up to nine (9) interviews were conducted per substance. Six (6) experts were contacted for interviews, of which two (2) accepted. One (1) expert specializing in gastroenterology replied via email that dexamethasone acetate is not used in GI practice, no additional follow-up was warranted. Three (3) experts, one (1) specializing in otolaryngology, one (1) in neurology, and one (1) in oncology, failed to respond to the interview request. Interviews were recorded and transcribed via ©Rev.com. QSR International's NVivo 12 software was utilized for qualitative data analysis. The University of Maryland, Baltimore IRB and the Food & Drug Administration RIHSC reviewed the study and found it to be exempt. Subject matter experts provided their oral informed consent to participate in interviews.

Survey

General professional medical associations and specialty associations, identified from the nominations, literature review, and interviews, were contacted to facilitate distribution of an online survey. A Google™ search was conducted to identify relevant professional associations within each specialty. Associations were included if their members are predominantly practitioners, national associations, and organizations focused on practice within the US. Organizations without practicing physicians and state or regional organizations were excluded. The association's website was searched in order to identify the email of the executive director, regulatory director, media director, association president, board members, or other key leaders within the organization to discuss survey participation. If no contact information was available, the "contact us" tab on the association website was used.

An online survey was created using Qualtrics® software (Provo, UT). The survey link was distributed to 26 associations. If an association had more than one (1) substance with indications relevant to that specialty, substances were combined into one (1) survey with no more than 14 substances per survey. Table 1 highlights the associations that agreed to distribute the survey link and Table 2 includes the associations that declined to participate. Additionally, single substance surveys were created and posted on the project website which was shared with survey participants.

Participation was anonymous and voluntary. The estimated time for completion was 30 minutes with a target of 50 responses per survey. The Office of Management and Budget (OMB) approved this project.

Table 1. Participating associations

Specialty	Association
Allergy/Immunology	American Academy of Allergy, Asthma and Immunology (AAAI)
Dermatology	American Academy of Dermatology (AAD)
	American Society for Dermatologic Surgery (ASDS)
Nephrology	Renal Physicians Association (RPA)
Ophthalmology	American Academy of Ophthalmology (AAO)
	American Society of Cataract and Refractive Surgery (ASCRS)
	American Society of Retina Specialist (ASRS)
Pain Medicine	American Academy of Pain Medicine (AAPM)
Primary Care	American Academy of Environmental Medicine (AAEM)
Rheumatology	American College of Rheumatology (ACR)

Table 2. Associations that declined participation

Specialty	Association	Reasons for Declining
Allergy/ Immunology	American College of Allergy, Asthma & Immunology (ACAAI)	Declined, "unaware of any bulk drug substances used by allergies in their practices"
Endocrinology	American Association of Clinical Endocrinologists (AACE)	Declined, "endocrinologists are not generally in the compounding space."
Gastroenterology	American Gastroenterological Association (AGA)	Failed to respond
Hematology	American Society of Hematology (ASM)	Failed to respond
Medicine	American Medical Association (AMA)	Failed to respond
	American Osteopathic Association (AOA)	Failed to respond
Nephrology	American Society of Nephrology (ASN)	Failed to respond
Neurology	American Academy of Neurology (AAN)	Failed to respond
Oncology	American Society of Clinical Oncology (ASCO)	Declined, "they are unable to share survey with members"
Otolaryngology	American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS)	Failed to respond
	American Academy of Otolaryngic Allergy (AAOA)	Declined, stating that they did not think otolaryngologists were the target market for the survey
	American Rhinologic Society (ARS)	Declined, stating they do not send out surveys unless they are requested by a member; unable to identify a member to request survey distribution
Primary Care	American Academy of Family Physicians (AAFP)	Failed to respond
	American College of Physicians (ACP)	Failed to respond
Pulmonology	American Thoracic Society (ATS)	Failed to respond
Surgery	American College of Surgeons (ACS)	Failed to respond

CURRENT AND HISTORIC USE

Summary of background information

- Dexamethasone acetate is not available as an FDA-approved product. Dexamethasone acetate was commercially available as an 8mg/mL and a 16mg/mL injection, but these products have been discontinued.
- Dexamethasone acetate is not available as an OTC product in the US.
- There is a current United States Pharmacopeia (USP) monograph for dexamethasone acetate.
- Dexamethasone acetate is not available in any of the foreign registries in the nominated formulations. It is available in Hong Kong in a different dosage form and combination.

Table 3. Currently approved products – US

No approved products in the US

Table 4. Currently approved products – select non-US countries and regions

No approved products in the selected non-US countries and regions

Summary of literature review

No studies identified that met the inclusion criteria.

Table 5. Types of studies

No studies identified that met the inclusion criteria

Table 6. Number of studies by country

No studies identified that met the inclusion criteria

Table 7. Number of studies by combinations

No studies identified that met the inclusion criteria

Table 8. Dosage by indication – US

No studies identified that met the inclusion criteria

Table 9. Dosage by indication – non-US countries

No studies identified that met the inclusion criteria

Table 10. Compounded products – US

No studies identified that met the inclusion criteria

Table 11. Compounded products – non-US countries

No studies identified that met the inclusion criteria

Summary of focus groups/interviews of medical experts and specialty organizations

Two (2) interviews were conducted.

Table 12. Overview of interviewee

Interviewee	Level of Training	Specialty	Current Practice Setting	Experience with Dexamethasone Acetate	Interview Summary Response
END_03	MD	Endocrinology	Academic medical institution	Yes	• Patients usually buy commercially, but there are few patients who get it compounded because of adrenal insufficiency with other GI issues so they don't have good absorption of oral steroid and need injectable. • Has 1-2 patients that have used injectable dexamethasone due to it being a longer-acting steroid compared to hydrocortisone. • Does not stock in office, all written prescriptions.
DER_07	MD	Dermatology/ Immunology	Consulting	No	• Has not used it before because the practice site had a limited formulary. • Usually preferred to use commercially available products because of greater faith in the stability of those products.

Abbreviation: MD, Doctor of Medicine.

Efficacy/safety

- Dexamethasone is more potent and effective than hydrocortisone but also potentially more harmful. Depending on the indication, there may be a need for mineralocorticoid activity. For adrenal insufficiency, you would shy away from dexamethasone because of the potential for more negative side effects, but for someone with inflammation, edema, or cerebral edema, there may be a need for something more potent.

Office use

- One (1) interviewee stated that there may be a potential for in office use for specialties like orthopedics or rheumatology, but not in endocrinology.
- One (1) interviewee stated that dexamethasone is something that would be dispensed for long-term use, not used one time in the office. Personally, does not see the need for it to be compounded from outsourcing facilities, but can see a scenario where someone may want it so does not feel strongly against it compared to other substances because there is no concern regarding safety.

Compounded use instead of the FDA-approved products

- There is a commercial formulation but there have been issues getting it consistently, so compounding is an alternative method to obtain the product.

Use as topical gel

- One (1) interviewee offered insight on why someone may want topical gel. The interviewee stated a potential use of a topical gel for hair-bearing areas (scalp, groin), mouth sores and ulcers, Behcet's syndrome, or due to an allergy to certain steroids.

Summary of survey results

Table 13. Characteristics of survey respondents [119 people responded to the survey[a]]

Board Certification	DO	MD	PhD	No Response
Allergy and Immunology	0	1	0	0
Anesthesiology	0	1	0	0
Cardiovascular Disease	0	0	0	1
Dermatology	0	3	0	0
Internal Medicine	0	2	0	0
Neurology	0	1	0	0
Ophthalmology	0	59	0	0
Pain Medicine	0	3	0	0
Pediatric Dermatology	0	1	0	0
Rheumatology	1	0	0	0
No Board Certification	0	1	1	0
No Response	0	0	0	49

Abbreviations: MD, Doctor of Medicine; ND, Naturopathic Doctor; PhD, Doctor of Philosophty.
[a]Some respondents reported more than one (1) terminal clinical degree or board certification.

Table 14. Types of products used, prescribed, or recommended

Types of Products	Respondents, n (N=65[a])
Compounded	14[b]
FDA-approved	36
Over-the-counter	0
Dietary	0
Unsure	4
No Response	19

[a]Out of 119 respondents, 65 reported using, prescribing, or recommending multiple types of dexamethasone acetate product.
[b]Six (6) respondent used in combination. See Figure 2 below.

Figure 2. Compounded combinations reported in the survey

Active ingredients in combination products:

- Dexamethasone / Moxifloxacin - intracameral
- Dexamethasone / vancomycin / ceftazidime
- "Dex moxi ketor"
- "With antibiotics or betadine"
- "With antibiotics, NSAIDs"

Table 15. Compounded use of dexamethasone acetate in practice[a]

Indication	Strength	Dosing Frequency[b]	Dosage Form[b]	ROA	Duration of Treatment	Patient Population[b]
Atopic	–	–	–	–	–	–
Cataract	–	–	–	Intraocular	Once	Cataract surgery
	0.1mL of 4mg/mL	Once	Injection			
Viral conjunctivitis, vernal keratoconjunctivitis, moderate to severe allergic conjunctivitis	–	–	–	–	–	–
Refractory allergic conjunctivitis	0.2	–	–	–	–	–
Severe allergic conjunctivitis, atopic and vernal keratoconjunctivitis	0.1%	Hourly	Topical	Topical	Weeks	"See condition"
Endophthalmitis	4mg	Once	Solution	Intravitreal	–	–
Ocular inflammation	0.5-1%	Once daily to hourly	–	Topical, intravitreal, intracameral	Single administration to months	All ages, sexes, comorbidities
	0.1%	1-4x/day	Injectables, drops	Topical, subconjunctival	1-6 weeks	Patient sensitive to preservatives
	10mg/mL	Once	"Subconj injection"	–	Single injection	Adults
Uveitis	0.1%	Varies, sometimes as often as hourly	Eye drops	Topically	Weeks	All ages and sexes

Abbreviations: "–", not mentioned; ROA, route of administration.
[a]Ten (10) respondents.
[b]Quotations are direct words from respondents.

Table 16. Indications for which dexamethasone acetate is considered a standard therapy[a]

Indication	Standard Therapy			
	Compounded, n (N=14)	Non-compounded, n (N=28)	Unsure, n (N=4)	No Response, n (N=19)
Allergy to preservatives	1	0	0	0
Asthma	0	1	0	0
Conjunctivitis, allergic	0	2	0	0
Diabetic macular edema (DME)	0	2	0	0
Macular edema from retinal venous occlusion	0	2	0	0
Dry eye, Fuchs dystrophy (not severe enough to require corneal transplantation), episcleritis, punctual stenosis	0	1	0	0
Endophthalmitis	1	0	0	0
Inflammation	1	5	1	0
Iritis/uveitis	1	7	0	0
Keratitis (corneal inflammation)	0	3	0	0
Herpes zoster disciform keratitis	0	1	0	0
Keratitis in atopic and vernal keratoconjunctivitis	1	0	0	0
Postop inflammation	1	5	0	0
Prevent corneal graft failure	0	4	0	0
Radicular pain	0	1	0	0
Other[b]	0	0	1	0
None	0	2	0	0
No Response	9	3	2	19

[a]Some respondents reported more than one indication.

[b]"Rarely use"

Table 17. Reasons for using compounded product instead of the FDA-approved products

Theme	Reasons
No preservatives	• "Lack of preservatives" • "Preservative free option" • "Need for preservative-free drug"
Availability	• "No other option of appropriate concentration" • "No FDA-approved preservative-free agent"
Indication	• "It's for the eye" • "I think it helps intraocular inflammation"

Table 18. Change in frequency of compounded dexamethasone acetate usage over the past 5 years

	Respondents, n (N=14)
No–use has remained consistent	5
Yes–I use it LESS often now[a]	1
Yes–I use it MORE often now	2
No Response	6

[a]One (1) respondent wrote "rarely needed".

Table 19. Do you stock non-patient specific compounded dexamethasone acetate in your practice?

	Respondents, n (N=14)
No	8
Yes	0
No Response	6

Table 20. Questions related to stocking non-patient specific compounded dexamethasone acetate

No survey respondents provided this information

CONCLUSION

Dexamethasone acetate (UNII code: E2287TKU04) was nominated for inclusion on the 503B Bulks List by Specialty Sterile Pharmaceutical Society and Rebecca Mitchell for various indications. The nominated ROA and dosage forms are a suspension for injection, an intravenous and oral solution, and a topical gel. Dexamethasone acetate was commercially available in the US as an 8mg/mL and a 16mg/mL injection, but these products have been discontinued. Dexamethasone acetate is not approved in any of the national medical registries searched.

From the literature review conducted, no studies were identified that met inclusion criteria.

From the interviews, one (1) interviewee has used it but rarely for patients who cannot absorb oral steroids well requiring an injectable. The interviewee stated that there are commercial products available but there has been an issue of getting it consistently so compounding may be the alternative way to obtain products for patients. Both interviewees did not report a need to stock dexamethasone acetate in the office.

From the survey responses, 65 out of 119 respondents used dexamethasone acetate. The most common indication respondents used compounded dexamethasone acetate for was ocular inflammation. Avoiding preservatives, availability, and indications were some of the reasons for using the compounded dexamethasone acetate product over an FDA-approved product. Zero (0) out of fourteen (14) respondents who use a compounded product reported stocking compounded dexamethasone acetate in their practice

APPENDICES

Appendix 1. References

No studies identified that met the inclusion criteria.

Appendix 2. Survey instrument

Start of Block: Welcome Page

The University of Maryland Center of Excellence in Regulatory Science and Innovation (M-CERSI), in collaboration with the Food and Drug Administration (FDA), is conducting research regarding the use of certain bulk drug substances nominated for use in compounding by outsourcing facilities under section 503B of the Federal Food, Drug, and Cosmetic Act. In particular, we are interested in the current and historic use of these substances in clinical practice. This survey is for **dexamethasone acetate**. As a medical expert, we appreciate your input regarding the use of this substance in your clinical practice. This information will assist FDA in its development of a list of bulk drug substances that outsourcing facilities can use in compounding under section 503B of the Act. All responses are anonymous.

OMB Control No. 0910-0871
Expiration date: June 30, 2022

The time required to complete this information collection is estimated to average 30 minutes, including the time to review instructions, search existing data sources, gather the data needed, and complete and review the information collection. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. If you have additional questions or concerns about this research study, please email: compounding@rx.umaryland.edu. If you have questions about your rights as a research subject, please contact HRPO at 410-760-5037 or hrpo@umaryland.edu.

End of Block: Welcome Page

Start of Block: Dexamethasone acetate

Q1. What type(s) of product(s) do you use, prescribe, or recommend for **dexamethasone acetate**? Please check all that apply.

- ☐ Compounded drug product
- ☐ FDA-approved drug product
- ☐ Over the counter drug product
- ☐ Dietary supplement (e.g. vitamin or herbal supplement products sold in retail setting)
- ☐ Unsure

Skip To: Q13 If What type(s) of product(s) do you use, prescribe, or recommend for dexamethasone acetate? Please check all th... != Compounded drug product

Skip To: Q2 If What type(s) of product(s) do you use, prescribe, or recommend for dexamethasone acetate? Please check all th... = Compounded drug product

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Display This Question:

If What type(s) of product(s) do you use, prescribe, or recommend for dexamethasone acetate? Please check all th... = Compounded drug product

Q2. Please list any conditions or diseases for which you use compounded **dexamethasone acetate** in your practice. Please include the strength(s), dosing frequency(ies), dosage form(s), route(s) of administration, duration of therapy, and patient population (ex. age, gender, comorbidities, allergies, etc).

	Strength(s) (please include units)	Dosing frequency(ies)	Dosage form(s)	Route(s) of administration	Duration of therapy	Patient population
Condition 1 (please describe)						
Condition 2 (please describe)						
Condition 3 (please describe)						
Condition 4 (please describe)						
Condition 5 (please describe)						

Q3. Do you use compounded **dexamethasone acetate** as a single agent active ingredient, or as one active ingredient in a combination product? Please check all that apply.

- ☐ Single
- ☐ Combination

Skip To: Q5 If Do you use compounded dexamethasone acetate as a single agent active ingredient, or as one active ingredient... != Combination

Display This Question:

If Loop current: Do you use compounded dexamethasone acetate as a single agent active ingredient, or as one active ingredient... = Combination

Q4. Please list all combination products in which you use compounded **dexamethasone acetate**.

_____

Q5. For which, if any, diseases or conditions do you consider compounded **dexamethasone acetate** standard therapy?

_____

Q6. Does your specialty describe the use of compounded **dexamethasone acetate** in medical practice guidelines or other resources?

_____

Q7. Over the past 5 years, has the frequency in which you have used compounded **dexamethasone acetate** changed?

- ○ Yes - I use it **MORE** often now (briefly describe why) _____
- ○ Yes - I use it **LESS** often now (briefly describe why) _____

- No - use has remained consistent

Q8. Why do you use compounded **dexamethasone acetate** instead of any FDA-approved drug product?

_____

Q9. Do you stock non-patient-specific compounded **dexamethasone acetate** in your practice location?

- Yes
- No

Skip To: End of Block If Do you stock non-patient-specific compounded dexamethasone acetate in your practice location? = No

Display This Question:

If Do you stock non-patient-specific compounded dexamethasone acetate in your practice location? = Yes

Q10. In what practice location(s) do you stock non-patient-specific compounded **dexamethasone acetate** Please check all that apply.

- ☐ Physician office
- ☐ Outpatient clinic
- ☐ Emergency room
- ☐ Operating room
- ☐ Inpatient ward
- ☐ Other (please describe) _____

Q11. How do you obtain your stock of non-patient-specific compounded **dexamethasone acetate**? Please check all that apply.

- ☐ Purchase from a compounding pharmacy
- ☐ Purchase from an outsourcing facility
- ☐ Compound the product yourself
- ☐ Other (please describe) _____

Q12. Why do you keep a stock of non-patient-specific compounded **dexamethasone acetate**? Please check all that apply.

- ☐ Convenience
- ☐ Emergencies
- ☐ Other (please describe) _____

Skip To: End of Block If Why do you keep a stock of non-patient-specific compounded dexamethasone acetate? Please check all that apply. = Convenience

Skip To: End of Block If Why do you keep a stock of non-patient-specific compounded dexamethasone acetate? Please check all that apply. = Emergencies

Skip To: End of Block If Why do you keep a stock of non-patient-specific compounded dexamethasone acetate? Please check all that apply. = Other (please describe)

Q13. For which, if any, diseases or conditions do you consider **dexamethasone acetate** standard therapy?

_____

Q14. Does your specialty describe the use of **dexamethasone acetate** in medical practice guidelines or other resources?

_____

End of Block: Dexamethasone acetate

Start of Block: Background Information

Q15. What is your terminal clinical degree? Please check all that apply.

- ☐ Doctor of Medicine (MD)
- ☐ Doctor of Osteopathic Medicine (DO)
- ☐ Doctor of Medicine in Dentistry (DMD/DDS)
- ☐ Naturopathic Doctor (ND)
- ☐ Nurse Practitioner (NP)
- ☐ Physician Assistant (PA)
- ☐ Other (please describe) _____

Q16. Which of the following Board certification(s) do you hold? Please check all that apply.

- ☐ No Board certification
- ☐ Allergy and Immunology
- ☐ Anesthesiology
- ☐ Cardiovascular Disease
- ☐ Critical Care Medicine
- ☐ Dermatology
- ☐ Emergency Medicine
- ☐ Endocrinology, Diabetes and Metabolism
- ☐ Family Medicine
- ☐ Gastroenterology
- ☐ Hematology
- ☐ Infectious Disease
- ☐ Internal Medicine
- ☐ Medical Toxicology
- ☐ Naturopathic Doctor
- ☐ Naturopathic Physician
- ☐ Nephrology
- ☐ Neurology
- ☐ Obstetrics and Gynecology
- ☐ Oncology
- ☐ Ophthalmology
- ☐ Otolaryngology
- ☐ Pain Medicine
- ☐ Pediatrics
- ☐ Psychiatry
- ☐ Rheumatology
- ☐ Sleep Medicine
- ☐ Surgery (please describe) _____
- ☐ Urology
- ☐ Other (please describe) _____

End of Block: Background Information