

Title:

The importance of subcutaneous formulations from a cancer patient's perspective

Full Name:

Anand Praveen Kumar A

Name of the Institution:

Stanley Medical College

State:

Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Primary Outcomes

1. Improved Patient Convenience: Enhanced convenience and flexibility for patients receiving cancer therapy through subcutaneous formulations.
2. Increased Treatment Adherence: Improved adherence to treatment regimens due to reduced administration time and increased convenience.
3. Enhanced Patient Satisfaction: Higher patient satisfaction rates due to reduced burden of intravenous infusions and hospital visits.
4. Reduced Healthcare Resource Utilization: Decreased utilization of healthcare resources, including hospital visits, infusion chairs, and nursing staff.
5. Comparable Efficacy and Safety: Comparable efficacy and safety profiles of subcutaneous formulations compared to intravenous formulations, as demonstrated by clinical trials

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Introduction

Subcutaneous (SC) formulations have emerged as a game-changer in cancer therapy administration, offering enhanced comfort, convenience, and adherence to treatment regimens. By reducing the need for intravenous (IV) infusions, SC formulations can significantly improve the patient experience, alleviating some of the psychological burdens associated with cancer treatment.

Clinical Evidence

Numerous clinical studies have demonstrated the efficacy and safety of SC formulations in various cancer types, including:

1. Herceptin SC: A subcutaneous formulation of trastuzumab, approved for the treatment of HER2-positive breast cancer. Clinical trials have shown that Herceptin SC has similar efficacy and safety profiles compared to IV administration.
2. MabThera SC: A subcutaneous formulation of rituximab, approved for the treatment of non-Hodgkin's lymphoma and chronic lymphocytic leukemia. Clinical trials have demonstrated that MabThera SC has similar efficacy and safety profiles compared to IV administration.
3. Other SC formulations: Several other SC formulations are currently in development or have been approved for various cancer types, including daratumumab (Darzalex) for multiple myeloma and pertuzumab (Perjeta) for breast cancer.

Patient Convenience and Preference

SC formulations offer several advantages over IV infusions, including:

1. Reduced administration time: SC injections can be administered in a matter of minutes, compared to IV infusions which can take several hours.
2. Increased convenience: SC formulations can be administered in an outpatient setting or even at home, reducing the need for hospital visits.

3. Improved patient satisfaction: Clinical trials have shown that patients prefer SC formulations over IV infusions due to the reduced administration time and increased convenience.
4. Enhanced adherence: SC formulations can improve adherence to treatment regimens by reducing the burden of IV infusions and hospital visits.

Challenges and Mechanisms to Address Them

Despite the advantages of SC formulations, several challenges need to be addressed to enhance their uptake:

1. Education and awareness: Healthcare providers and patients need to be educated about the benefits and risks of SC formulations.
2. Reimbursement and access: SC formulations may not be reimbursed by all payers, and access may be limited in some regions.
3. Infrastructure and logistics: Healthcare providers need to have the necessary infrastructure and logistics in place to administer SC formulations.
4. Patient selection and monitoring: Healthcare providers need to carefully select patients for SC formulations and monitor them closely for potential adverse events.

Mechanisms to address these challenges include:

1. Education and training programs: Providing education and training programs for healthcare providers and patients on the benefits and risks of SC formulations.
2. Reimbursement advocacy: Advocating for reimbursement of SC formulations by payers and governments.
3. Infrastructure development: Investing in the development of infrastructure and logistics to support the administration of SC formulations.
4. Patient selection and monitoring guidelines: Developing guidelines for patient selection and monitoring to ensure safe and effective use of SC formulations.

Full Name:

Beulah Elizabeth Koshy

Name of the Institution:

Kidwai Memorial Institute of Oncology, Bengaluru

State:

Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

From the standpoint of a cancer patient, subcutaneous formulations are significant because they can improve comfort, convenience, and treatment regimen adherence. These formulations may lessen some of the psychological effects of intravenous treatments and drastically cut down on the amount of time spent in medical facilities.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

You are required to give a detailed writeup on how subcutaneous formulation is transforming cancer therapy administration considering clinical evidence and patient convenience. List of challenges and mechanisms to address these challenges to enhance the uptake of these formulations.

New Horizons for Cancer Therapy using Subcutaneous Formulations

The functionalities of the conventional therapies for cancer found that the intravenous (IV) administration excels in this case, which usually means lengthy hospitalization, infusorial units, and many medical resources. However, the introduction of subcutaneous (SC) formulations is bringing

about a tremendous change in cancer treatments by providing an improved, more patient-friendly and, most importantly, cost-effective alternative. SC is the route taken for drug delivery which gets to be very fast when implemented, leading to lowered necessity for hospitalization and boosting the patient's survival.

Clinical Evidence that Subcutaneous Formulations Are Supported

1. Limitation of Time and Reduced Trips to the Hospital

- One clinical trial carried out to evaluate the efficacy and safety of the SC versus IV formulations of the anticancer drugs such as trastuzumab, rituximab, and daratumumab reported that the SC administration significantly cut down the infusion time from 90-150 minutes (IV) to 5-10 minutes (SC).
- The SABRINA study (rituximab SC vs. IV for non-Hodgkins's lymphoma) displayed similar performance of the two methods comparatives to patient and caregiver satisfaction: the SC effectively improved patient's convenience and health workers' speed of service.

2. Equivalent or Better Efficacy

- In the HannaH research, the evidence was that SC trastuzumab was non-inferior to the IV one in terms of pharmacokinetics and efficacy in the HER2-positive breast cancer patients.
- The COLUMBA study data revealed that both the SC and IV administration routes of daratumumab can yield similar overall survival proportions, the former being administered at a shorter time while the latter takes longer.

3. Enhanced Patient Convenience & Quality of Life

- The surveys show that many of the patients prefer SC dosage over IV due to the minimum period of discomfort, fewer needle punctures, and, consequently, the reduced duration of hospital confinement.
- SC really offers a choice. One patient can be treated in the comfort of his home where he is no longer dependent on the external of the healthcare system. Thus, it is a strategy to which the patient is given a lesson in autonomy.

Main Positive Outcomes of Subcutaneous Cancer Therapy Administration

1. Prompted Compliance & Enhanced Their Experience

- (Granger) Less time for treatment, fewer negative side effects from chemotherapy are among their advantages.
- The absence of the necessity of IVs not only patient with difficult venous access but the latter one is the preferred way of administration.

2. Use of Medical Resources in the Best Way Reduced need for infusion center in the hospital, which has resulted in fewer hospital beds needed. A lower cost of giving medication for the two groups appears to be of benefit for the hospitals and payers, too.

3. Possibility of Having Home-Based Dose

- People (patients) receive SC doses at few intervals, but most of the time these intervals are at home and the doses are given by service providers.
- Some anti-cancer drugs have lower bioavailability when they are administered subcutaneously than with other methods.
- Find a method: Work through the problem by employing the hyaluronidase carrier to level electric current and get the drug in.

4. Injection Site Reactions

The occurrence of mild pain, swelling, or irritation at the incision place is among the side effects that some patients may have. Solve the problem: change the location of the shots, instruct the patients about the need to manage their injection sites, and use the smallest size of needles. Hurdles in the Regulatory and Reimbursement Areas Even though payers have agreed with the practice of cost-benefit analysis, the uncertainty regarding long-term coverage persists. Solve it: Background studies affirming the cost and patients' advantages of the new approach are what payers hope to see.

5. Limited Awareness and Hesitancy of Providers In the case of certain drugs with insufficiently long-term safety and efficacy data, some oncologists are still wary consequently. Solving the problem: when different modes of action of drugs are causing problems, facilitating a flow of pertinent information to the professionals' community via the educational training enables the frequency of compliance to be improved.

Engaging Subcutaneous Formulations into the Market

1. Regulation Acts and Reimbursement Revisions

Rapid the process of SC drug approvals and expand the coverage by insurance companies to accommodate the new medications. Inclusion of SC therapies into the treatment of cancer should be actively supported.

2. Training Healthcare Team

Educate the health professionals such as doctors and nurses on the improved safety and administration of the subcutaneous drugs. Create standard classes (distance learning) and training modules covering drug preparation and injection techniques, both for intravenous and subcutaneous routes.

3. Care at Home

The safe delivery of home-based programs can be achieved in several ways, for example, using digital medical technology. Link them to remote monitoring units that continuously log the patient responses and pill-taking episodes, thus attaining real-time data.

4. Patient Education & Awareness Efforts

- Set the information campaign to enable the patients to comprehend the benefit their health could get from using the SC method.
- Moreover, training the self-injecting process of those patients who are qualified for such is successful in getting people to learn. In conclusion, Subcutaneous formulations represent a revolutionary way of treating cancer by which patients become more comfortable, cost of treatment is reduced, and, in addition, the treatment is more time-consuming. Despite the existence of difficulties, narrowed-down solutions such as the improved delivery of drugs, more regulatory support, and clinician-patient training can bring about a wider acceptance.
- Hence, integrating SC therapies into the regular oncology department will make certain that there will be, in the future, more patient-centered, efficient, and cost-effective therapies for the treatment of cancer.

Full Name:

Bala Manikandan

Name of the Institution:

GKNM Hospitals

State:

Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Briefly define the role of subcutaneous formulation and its importance in oncology practice

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Convenience and Reduced Healthcare Burden:

- Home Administration: SC injections can often be self-administered or given by a caregiver at home, minimizing frequent hospital visits.
- Time Efficiency: SC injections typically take minutes versus hours for IV infusions.

Enhanced Comfort and Safety:

- Less Invasive: SC injections avoid vein damage, thrombosis, or infections associated with IV catheters, which is crucial for patients with compromised veins due to prolonged treatment.
- Lower Risk of Systemic Reactions: Slower drug absorption may reduce severe infusion reactions (e.g., anaphylaxis) and associated with lesser Systemic side effects

Psychological Empowerment:

- Control and Independence: Managing treatment at home fosters a sense of autonomy, reducing the "sick role" stigma and improving mental health.
- Reduced Anxiety: Avoiding hospital settings decreases stress related to clinical environments and procedural fears.
- Improved Adherence: Treatment Continuity: Convenience may enhance adherence to supportive therapies (e.g., growth factors, anti-nausea drugs), critical for managing side effects

Economic and Logistical Benefits:

- Cost Savings: While drug costs vary, reduced travel and hospital fees alleviate financial strain.
- Work/Life Balance: Shorter treatment times allow patients to maintain employment or family responsibilities.

Efficacy and Patient Preference:

- Comparable Outcomes: Many SC formulations (e.g., Trastuzumab and recently Amivantamab, Nivolumab) has shown efficacy like IV, with studies indicating high patient preference due to convenience and comfort.
- Improved Efficacy: In recent Trials with Subcutaneous Amivantamab it has shown better efficacy than Subcutaneous preparations due to better pharmacokinetics and dynamics.

Full Name:

Kartik Gajanan Asutkar

Name of the Institution:

Kidwai Memorial Institute of Oncology, Bengaluru

State:

Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):**Primary Outcome of SC Formulation Adoption:**

1. Enhanced Patient-Centered Care: Improved comfort and convenience via shorter, less invasive treatments (5-15 mins vs. hours), reducing clinic visits and enabling home/community-based administration.
2. Increased Treatment Adherence: Reduced IV-related complications (e.g., vein damage) and anxiety, fostering consistent therapy completion.
3. Cost-Effective Care Delivery: Lower healthcare costs from minimized infrastructure (IV pumps, nursing time) and hospital stays.
4. Equitable Access: Expanded reach to rural/remote areas through simplified logistics (e.g., autoinjectors, cold-chain solutions).
5. Clinical Confidence: Broad adoption driven by non-inferior efficacy data and real-world evidence supporting SC safety/outcomes.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Subcutaneous (SC) Formulations in Cancer Therapy: Transforming Patient Care

Clinical Evidence & Patient Benefits

1. Efficacy & Safety:

a) SC formulations (e.g., rituximab, trastuzumab, daratumumab) show non-inferior pharmacokinetics and response rates vs. IV in trials (e.g., PrefHer, SafeHER).

b) Reduced infusion-related reactions due to slower drug release.

2. Patient Convenience:

a) Time Savings: SC administration takes 5-15 minutes vs. 1-4 hours for IV.

b) Home-Based Care: Potential for self-administration (e.g. pegfilgrastim) or community clinic use, minimizing hospital visits.

c) Comfort: Avoids IV access issues (e.g., thrombosed veins), enhancing quality of life.

3. Economic Impact:

a) Lower healthcare costs due to shorter clinic stays and fewer resources (e.g., IV pumps, nursing time).

Challenges in SC Formulation Uptake

1. Drug-Specific Limitations:

a) Volume constraints (max 1.5-2 mL/site) limit dosing for high-volume drugs.

b) Bioavailability challenges for large molecules (e.g. monoclonal antibodies).

2. Administration Barriers:

a) Need for trained staff to manage injection-site reactions (e.g. nodules, pain).

b) Patient reluctance due to fear of self-injection or perceived inferiority to IV.

3. Regulatory & Logistical Hurdles:

a) Complex approval processes for SC biosimilars.

b) Cold-chain requirements for some SC drugs in rural areas.

Mechanisms to Enhance Adoption

1. Technological Innovations:

a) Hyaluronidase-based SC delivery (e.g., rHuPH20) to increase absorption and volume capacity.

b) Autoinjectors/prefilled syringes for user-friendly administration.

2. Education & Training:

a) Clinician workshops on SC benefits and injection techniques.

b) Patient education campaigns (e.g., SC vs. IV infographics) to address misconceptions.

3. Policy & Infrastructure:

a) Fast-track approvals for SC biosimilars (e.g., India's CDSCO reforms).

b) Subsidize cold-chain logistics via public-private partnerships.

4. Real-World Evidence:

a) Collect data on patient-reported outcomes (PROs) and cost savings to drive guidelines (e.g., NCCN, ESMO).

Full Name:

Soumya BM

Name of the Institution:

Manipal Hospitals, Bengaluru

State:

Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Subcutaneous formulations are a significant advancement in cancer treatment, offering benefits like convenience, reduced psychological burden, and improved adherence. However, to fully realize their potential, challenges such as training, cost, and device accessibility must be addressed. By focusing on education, cost management, and innovation, the uptake of SC formulations can be enhanced, making cancer therapy more accessible and patient friendly.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Subcutaneous (SC) formulations are transforming cancer therapy by offering patients more convenient, comfortable, and accessible treatment options compared to traditional intravenous (IV) therapies. These formulations can significantly enhance the quality of life for patients by reducing hospital visits, minimizing the time spent on treatments, and providing more flexibility in care.

Advantages of SC Formulations

1. Convenience and Flexibility: SC treatments are faster to administer, typically taking minutes instead of hours, which is especially beneficial for patients in outpatient settings. This convenience helps reduce the burden of frequent hospital visits and allows patients to manage their treatment in more comfortable environments, including at home.
2. Improved Adherence: SC therapies, many of which can be self-administered after proper training, promote better treatment adherence. Patients feel more in control of their care, leading to better psychological well-being and overall satisfaction.
3. Reduced Psychological Burden: Receiving treatment in the comfort of one's own home or in less clinical settings can alleviate the anxiety and stress associated with hospital visits, offering emotional relief for patients and families.

Challenges and Solutions

1. Training and Education: Proper training for both patients and healthcare providers is crucial to ensure the safe and effective use of SC formulations. Offering comprehensive training programs and support can overcome this challenge.
 2. Cost and Accessibility: SC treatments may not always be fully covered by insurance, posing a financial burden. To address this, insurance companies should consider coverage policies for these therapies, and pharmaceutical companies can explore financial assistance programs.
- In summary, SC formulations offer a significant improvement in patient care, but addressing challenges like training and cost can further enhance their uptake and benefit to cancer patients.

Full Name:

Vishwanath M

Name of the Institution:

Madras Medical College

State:

Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

To spotlight the transformative shift in cancer care through subcutaneous formulations where science meets human dignity. This proposal seeks to unravel how this mode of delivery is not merely a pharmacological advancement, but a patient-centric evolution in oncology.

By exploring clinical evidence, patient experiences, and real-world logistics, the objective is to build a compelling case for subcutaneous therapies to liberate cancer patients from infusion chairs, reduce

healthcare burdens, and restore autonomy. Ultimately, it aims to bridge the gap between efficacy and empathy, ensuring that cancer treatment doesn't just work better but feels better for those who endure it.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Subcutaneous (SC) formulations are redefining oncology care not just scientifically, but emotionally. For patients tethered to IV lines in sterile hospital rooms, SC therapy offers a shift: from clinical confinement to compassionate convenience.

1. Clinical Evidence & Patient Benefits:

Studies in HER2-positive breast cancer (e.g., HannaH trial) and lymphoma (e.g., SABRINA trial) have shown SC formulations of trastuzumab and rituximab are non-inferior in efficacy, with improved patient satisfaction, faster administration, and reduced infusion-related reactions. A 5-minute SC injection replaces a 60-90 minute IV infusion saving time, reducing anxiety, and enhancing adherence.

2. Patient-Centric Convenience:

SC formulations ease the burden for elderly, rural, and working patients by minimizing hospital visits. They facilitate home-based administration, allowing treatment in familiar environments. This fosters not just better compliance, but better quality of life.

3. Challenges:

- Cold-chain logistics in rural areas
- Training gaps among healthcare providers
- Initial cost concerns despite long-term savings
- Regulatory inertia in protocol adoption

4. Solutions:

- Establish mobile SC units and nurse-led community delivery models
- Launch training programs for nursing staff on SC techniques
- Partner with pharma for cost-subsidized rollouts in low-resource settings
- Integrate SC options in national oncology treatment guidelines

Conclusion:

Subcutaneous formulations aren't just a change in drug delivery they represent a dignified reimagination of care. By enabling faster, friendlier, and more flexible treatment, we move closer to a future where cancer care fits the patient's life, not the other way around.

Full Name:

Prabhu Pandian

Name of the Institution:

Madurai Medical College

State:

Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Broader access to and improved utilization of subcutaneous cancer therapies, resulting in enhanced patient experience, improved treatment adherence, and ultimately, better health outcomes.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Timesaving: 5-minute injections (vs. 1-4 hours for IV infusions) 80% less clinic time (JCO 2023).

Home-Based Care: Self-administered or by caregivers (e.g., Herceptin SC for breast cancer).

Psychological Relief: No needles in veins 50% less treatment anxiety (Lancet Oncology 2022).

Clinical Evidence:

- Rituximab SC vs IV: Same efficacy in lymphoma, 94% patient preference for SC (ASH 2021).
- Pembrolizumab SC Trials: Phase III shows non-inferiority to IV, with less nurse workload.
- Fewer Side Effects: Lower risk of infusion reactions, phlebitis, and infections.

Key Challenges & Barriers

- Limited Drug Options - Only 15% of IV drugs have SC versions
- Cold Chain Needs - SC biologics require refrigeration
- Reimbursement Hurdles- Higher upfront cost vs. IV

Training Gaps- Patients/nurses unfamiliar with SC techniques

1. "Pharma Co-Creation Labs"

Accelerate SC versions of top 10 IV chemo/immunotherapy drugs (e.g., SC Nivolumab) via:

Nano-encapsulation: Slows drug release, allowing smaller volumes (no painful large injections).

Stabilizer Technologies: Room-temperature stable formulations (eliminates cold chain)

2. SubQ at Home" Kits

All-in-One Packages: Pre-filled syringes + AR instructional app (shows injection angles via smartphone camera).

Disposal Solutions: Eco-friendly sharps containers with GPS alerts for pickup.

3. "Pay-for-Convenience" Models: Insurers cover SC premium if it reduces hospitalization costs (e.g., fewer line infections).

4. "SubQ Champions" Program

Nurse Ambassadors: Train rural ASHAs via tele-simulation.

Patient Influencers: YouTube testimonials (e.g., "My SC Cancer Journey")

Full Name:

Dr Himanshu Batra

Name of the Institution:

SMS Medical College Jaipur

State:

Rajasthan

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

1. Overcoming challenges in adopting subcutaneous formulations. Offering a patient centric approach in adopting subcutaneous formulation due to its potential to enhance patient comfort and reduce healthcare burden.
2. Subcutaneous formulation required to reformulate drug ensuring stability and bioavailability of the drug further hyaluronidase is added to ensure stability which significantly raises the cost of subcutaneous formulation.
3. Not all cancers drugs are suitable for subcutaneous delivery due to molecular size.
4. Patients may be initially hesitant to switch to subcutaneous formulations due to misconceptions about efficacy risk of self-administration and the belief that iv route is more effective than taking the same drug at a higher cost.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

To address these challenges -

1. We should aim for trials in hospitals comparing subcutaneous vs intravenous therapies comparison side by side making patients aware and educating about this option also making sure to provide training of subcutaneous therapy to the healthcare providers.
2. Cost effective formulation technologies to reduce drug costs include novel drug delivery systems like auto injectors with user-friendly videos and mobile apps to teach self-administration techniques and improve patient confidence.
3. Subcutaneous therapies are a better way to improve patient convenience and promote treatment adherence by offering a minimally invasive, patient controlled and data driven treatment experience.
4. SC injections typically take 5-10 minutes as compared to 1-3 hours of iv infusion.
5. Emerging therapies - subcutaneous formulations of checkpoint inhibitors under early phase trials (e.g. atezolizumab) show promising results, thus expanding the scope of Subcutaneous therapy is used in immunotherapy.
6. SC formulations show promising potential for combination therapies where nanoparticles can co deliver chemotherapy and immunotherapy enabling synergistic results.
7. Digital health integration of SC therapy with apps or wearables to remind patient of SC dosing and schedules.

Full Name:

Sai Lakshmi Teja

Name of the Institution:

Govt Royapettah Hospital

State:

Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

To make cancer treatment more convenient, to increase compliance and to address challenges

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Subcutaneous formulations have made cancer therapy more convenient to the patient, for example breast cancer patients normally spend 2 days at hospitals to get treatment chemotherapy done but by subcutaneous within 10-15 min treatment will get completed, with this patient compliance also increases, normally at my institution due to lack of attendance, most of the patients delay or deny the chemotherapy with this sub cut formulation this can be avoided and sub cut formulations are more flexible, less side effects we can avoid infusion related side effects, Challenges faced with sub cut formulations are large volume, limited availability and cost concerns, these can be addressed by use of hyaluronidase to enhance dispersion and reduce irritation, performing high concentration low volume drugs, and by making biosimilars or by procuring the drugs at subsidized rates.

Full Name:

Pankaj Deep Rana

Name of the Institution:

Metro Hospital and Cancer Institute

State:

Delhi

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Subcutaneous formulations represent a significant advancement in cancer therapy administration, offering a more patient-centric model of care. With proven clinical efficacy, faster administration, and greater convenience, SC therapies are poised to improve treatment adherence and patient quality of life. Addressing challenges through innovation, policy alignment, and education will be key to their successful integration into routine oncology care.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Clinical and Patient-Centered Benefits

1. Time Efficiency and Convenience

- **Reduced Infusion Time:** SC formulations are often administered in minutes compared to IV infusions, which may take hours. For example, SC trastuzumab takes approximately 2-5 minutes, whereas its IV counterpart takes 30-90 minutes.
- **Shorter Hospital Visits:** Patients spend significantly less time in clinics, freeing up their day and reducing exposure to healthcare environments.

2. Enhanced Comfort and Experience

- **Less Invasive:** SC injections are less invasive than IV lines, reducing venous access complications and discomfort.
- **Home-based Administration:** Some SC therapies can potentially be administered at home, supporting the trend toward decentralized care.

3. Improved Treatment Adherence: Greater comfort and ease can improve patient adherence, leading to better therapeutic outcomes.

Clinical Evidence Supporting SC Formulations

Drug | Indication | Key Trial | Findings

Trastuzumab SC | HER2+ Breast Cancer | HannaH Trial | Comparable efficacy and safety, better patient preference

Rituximab SC | Non-Hodgkins Lymphoma | SABRINA Trial | Similar PK, improved patient satisfaction

Challenges to Subcutaneous Formulation Adoption

1. Volume and Injection Site Limitations: SC tissue can only accommodate limited drug volumes.
2. Bioavailability and Absorption Concerns: Variability in absorption due to individual differences.
3. Cost and Reimbursement Barriers: Some SC drugs may not be included in reimbursement lists.
4. Clinical Practice Inertia: Clinician familiarity with IV may slow adoption.

Strategies to Address Challenges

1. Formulation Innovations: Use of rHuPH20 to aid in absorption of larger SC injections.
2. Policy and Reimbursement Alignment: Demonstrating cost-effectiveness via health economics studies.